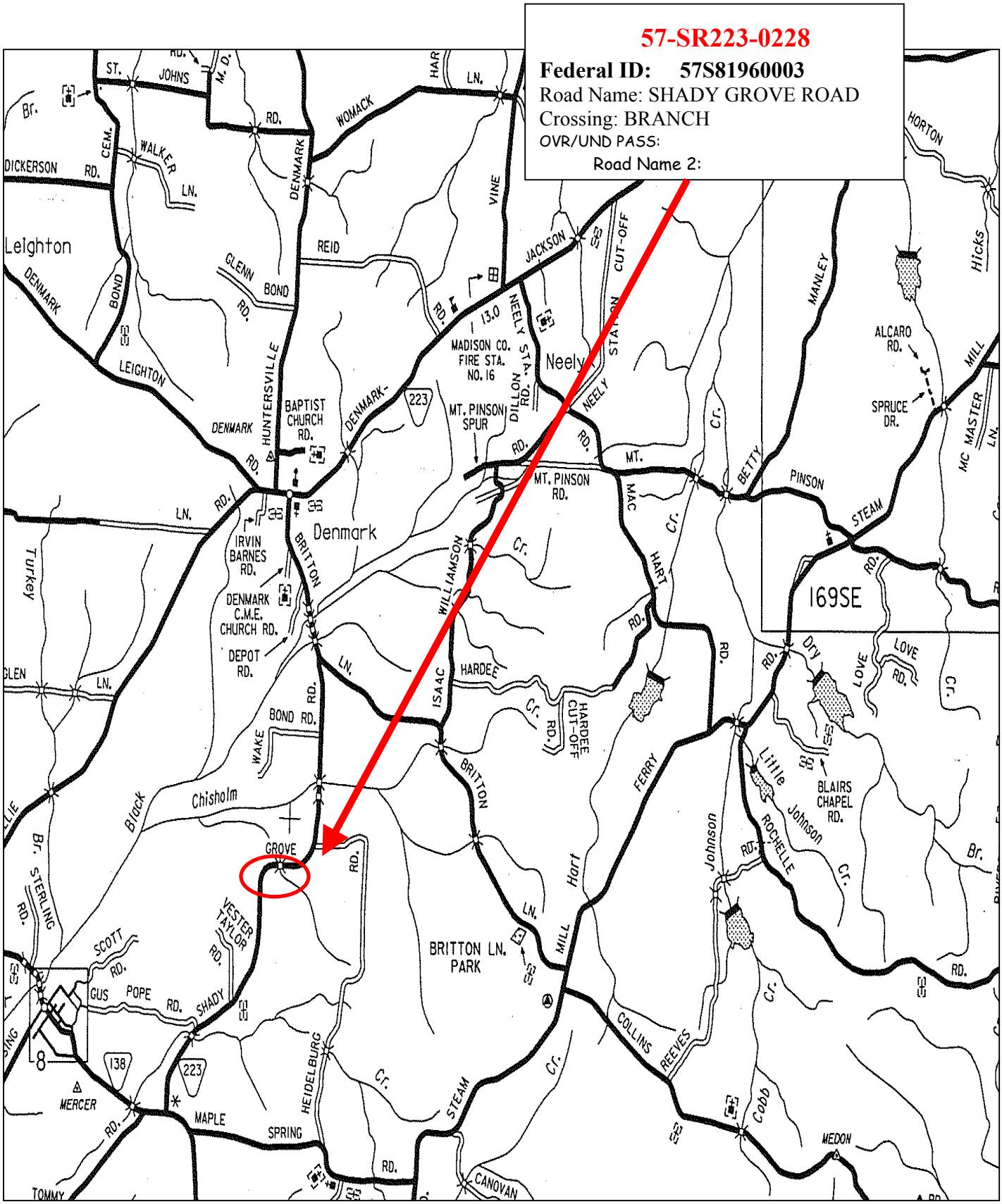
MADISON COUNTY



BRIDGE MAINTENANCE RECOMMENDATIONS

COUNTY: MADISON
LOCATION: 57-SR223-02.28-
CO. SEQ.: 1 SPEC. CASE: 0

Tennessee Department of Transportation

CROSSING: BRANCH
FED. BRIDGE NO.: 57S81960003
MAINT. DIST.: 57

REPAIR LIST NO.: 3
DATE ADDED: 07/10/2017
REVISED: 06/10/2019

FACILITY CARRIED:	FAS 223			NUMBER OF MAIN SPANS:	1
HIGHWAY SYSTEM:	05-STP	RURAL,	STATE	NUMBER OF APPROACH SPANS:	0
BRIDGE WIDTH (CURB TO CURB):	20 FT	11	IN	BRIDGE LENGTH (FT):	23
BRIDGE WIDTH (OUT TO OUT):	22 FT	3	IN	MAXIMUM SPAN LENGTH (FT):	23
APPROACH ROADWAY (W/SHOULDERS):	29 FT	10	IN	SKEW ANGLE (DEGREES):	60

MAINTAINED BY:	STATE HIGHWAY AGENCY
MAIN SPAN MATERIAL:	STEEL
MAIN SPAN DESIGN TYPE:	STRINGER/MULTI-BEAM OR GIRDER
APPROACH SPAN MATERIAL:	OTHER OR NOT APPLICABLE
APPROACH SPAN DESIGN TYPE:	OTHER OR NOT APPLICABLE

INSPECTION DATE:	06/10/2019	GENERAL CONDITION:	FAIR
EVALUATION DATE:	08/09/2017	STRUCTURALLY DEFICIENT:	YES
PPRM PIN NUMBER:	124712.00		
H TRUCK RATING @ INV.:	20 TONS	SUFFICIENCY RATING:	12.6

SUGGESTED ROUTINE MAINTENANCE AND COMMENTS
APPROACH GUARDRAILS ARE SUBSTANDARD
BRIDGERAILS ARE SUBSTANDARD

GENERAL COMMENTS:

BRIDGE IS ON THE IMPROVE ACT. EARLIEST LETTING IS CY 2017.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

Bridge Condition Coding Form

Revised 06/11/2019

Bridge Number: (Includes Item 5A)	57S819600031
Feature Intersected:	BRANCH
Evaluation Status:	CONDITION ITEM CHANGE
County:	57
Route:	SR223
Special Case:	0
County Sequence:	1
Log Mile:	2.28

CODE ONLY THOSE VALUES WHICH HAVE CHANGED

ITEM #	DESCRIPTION	VALUE
90	LAST INSPECTION DATE	06/10/2019
	EARLIEST DATE OF NEXT REGULAR INSPECTION	04/10/2021
10	MINIMUM V.C. OVER DECK (ROADWAY + SHOULDERS)	99 FT. 99 IN. / FT. IN.
520	MINIMUM V.C. OVER DECK (EXCLUDES SHOULDERS)	99 FT. 99 IN. / FT. IN.
36	TRAFFIC SAFETY FEATURES	Br. Rail 0 / Trans. 0 / Appr. Rail 0 / Terminal 1 / SPEED LIMIT 45
41	STRC OPEN/CLOSED/POSTED (A K P)	P
58	DECK	6
59	SUPERSTRUCTURE	6
60	SUBSTRUCTURE	6
61	CHANL/CHANL PROTECTION	6
62	CULVERT AND RETAIN WALL	N
71	WATERWAY ADEQUACY	5
72	APPROACH RDWY ALIGNMENT	8
521	OVERALL CONDITION	FAIR

16	LATITUDE	N 35° 29.7150′
17	LONGITUDE	W 89° .0767′

TEAM LEADER SIGNATURE

REVIEW DATE

CONDITION CODING GUIDELINES
(Values for Coding Items 58, 59, 60 and 62)

- 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.

Bridge Loc. No: 57-SR223-02.28 Date: 06-10-19

BRIDGE NUMBER

LOOKING AHEAD ON ROUTE & WEIGHT LIMIT SIGN

Bridge Loc. No: 57-SR223-02.28 Date: 06-10-19

APPROACH # 2

VIEW ACROSS TOP OF DECK

Bridge Loc. No: 57-SR223-02.28 Date: 06-10-19

RIGHT SIDE UP STREAM

LEFT SIDE DOWN STREAM

Bridge Loc. No: 57-SR223-02.28 Date: 06-10-19

APPROACH # 2

LOOKING BACK ON ROUTE & WEIGHT LIMIT SIGN

Bridge Loc. No: 57-SR223-02.28 Date: 06-10-19

ABUTMENT # 1

BOTTOM DECK

Bridge Loc. No: 57-SR223-02.28 Date: 06-10-19

ABUTMENT # 2

RIGHT SIDE ELEVATION

Bridge Loc. No: 57-SR223-02.28 **Date: 06-10-19**

LEFT SIDE ELEVATION

BRIDGE INSPECTION REPORT

JUN 10 2019

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

Field Report No. 25 Date 6/10/19
Previous Report No. 24 Date 8/3/17
Co Seq: 01 Plans: YES ( ) NO ( )

Bridge No. 57S81960003 (Eleven Digit No.) Bridge Location No. 57 - SR223 - 0228 (Co. - Route - Log Mile) - - (OVER/UNDER PASS)

SHADY GROVE ROAD (Road Name) BRANCH (Feature Intersected) (CITY)

Year Constructed 2017 County Madison Maint. Dist.: 48 Maint.Resp: 02

Year Widened _____ Year Rehabilitated _____ _____ (Structure Name (If Named))

FEATURES

Wearing Surface Concrete ( ) Timber ( ) Asphalt (X) Depth 1½" (in.)
Flared Width Yes ( ) No (X) Median Width Open ( ) None (X) Closed ( )
Navigational Control Yes ( ) No (X) Bridge Skew 75R ° LT ( ) RT ( )
Structure Type (Main Span) P.C.C.S.
Structure Type (Appr.Spans) _____
No. Main Spans 1 No. Approach Spans _____
Maximum Span Length 28.0 (**.* ft.)
Total Length 28.0 (**.* ft.)

INSPECTORS

1. L Jones TC
2. Ferrell
3. HAYes
4. Thomas
5. Prince
6. _____
7. _____
8. _____

WIDTHS (*.* ft.)

Deck Out-to-Out 27.5
Roadway Curb/Curb 26.5
Roadway Rail/Rail _____
Sidewalk Rt. _____ Lt. _____
*Approach Roadway 18.0
*(Does Not Include Shoulders)
Approach Shoulder Rt. 2.0
Lt. 2.0

CLEARANCES

Min. Vertical Clearance over Deck _____ (ft.-in.)
Min. Vertical Under Clearance _____ (ft.-in.)
Min. Lateral Under Clearance Rt. _____ (*.* ft.)
Min. Lateral Under Clearance Lt. _____ (*.* ft.)
FRACTURE CRITICAL: _____
(If Yes, Include BIR 3.9)

NBIS Bridge Length (<25 ft.) _____ (ft.-in.)

UNDERWATER INSPECTION

To Be Performed By: _____ Date _____

DOT FIELD TEAM ( ) CONTRACT DIVERS ( ) NONE REQUIRED (X)

Change in Structural Condition: Yes ( ) No (X) Major Repairs Made: Yes (X) No ( )

COMMENTS:

7/2017 < Substructure repairs superstructure replaced w/PCCS

LATITUDE: N35 ° 29.7150 '
LONGITUDE: W89 ° 0.0766 '
G.P.S. Location

Leonard Jones, Jr.
Digitally signed by Leonard Jones, Jr.
Date: 2019.06.18 08:21:13 -05'00'

BRIDGE RATING: ( ) (X) ( ) ( )
GOOD FAIR POOR CRITICAL

Supervising Bridge Inspector: L Jones

JUN 10 2019

Form BIR 3.1
(Rev. 9-22-98)
DT-0080

Bridge Location No. 57 (Co.) - SR223 (Route) - 0228 (Log Mile)

Date 6/10/19

PERFORMANCE EVALUATION

Time of Day Inspected 3:38 PM Weather Conditions Clear 82°

Vehicles Observed Normal Traffic

LIVE LOAD BEHAVIOR

	YES	NO	Comments
Substructure			
Horiz./ Vert. Defl.	( )	(X)	
Vibration	( )	(X)	
Superstructure			
Horiz./ Vert. Defl.	( )	(X)	
Vibration	( )	(X)	

APPROACH

	Rating	Comments
Alignment	(G) F P C	
Slab	G F P C	N/A
Joints	G F P C	
Pavement	G (F) P C	Fine cracks
Embankment	(G) F P C	
Drains	G F P C	N/A

TRAFFIC SAFETY FEATURES

	Rating	STANDARD	SUB-STANDARD	Comments
Bridgerailing	(G) F P C	( )	(X)	
Transitions	(G) F P C	( )	(X)	
Guardrail	(G) F P C	( )	(X)	
Guardrail Terminal	(G) F P C	(X)	( )	

SIGNING

	YES	NO	NEEDED
Paddleboards	(X)	( )	( )
Vertical Clearance (<14'-6")	( )	(X)	( )
NARROW ( )	( )	(X)	( )
ONE LANE BRIDGE ( )	( )	(X)	( )

Weight Limit Posted

YES (X) NO ( )

Gross..... 40 Tons

2 Axle..... 40 Tons

3 or more Axles.. _____ Tons

Other Signs or Plaques:

Comments Regarding any Problems with Signing:

Form BIR 3.2
(Rev. 9-22-98)
DT-0081

JUN 10 2019

Bridge Location No. 57 - SR223 - 0228
Co. Route Log Mile

Date 6/10/19

	Rating	Comments
DECK		
Wearing Surface	G (F) P C	
Deck - Structural Condition	G (F) P C	
Curbs	(G) F P C	
Median	G F P C	
Sidewalks	G F P C	
Parapet	G F P C	
Railing & post	(G) F P C	
Paint	G F P C	
Drains	(G) F P C	
Lighting Standards	G F P C	
Utilities	G F P C	
Joint Leakage	G F P C	
Expansion Joints	G F P C	
SUPERSTRUCTURE		
Bearing Devices	G F P C	
Beams	G F P C	
Girders	G F P C	
P C C S	G (F) P C	
BOLTS (PCCS)	G (F) P C	
Floor Beams	G F P C	
Stringers	G F P C	
Diaphragms	G F P C	
Bracing	G F P C	
Trusses - General	G F P C	
Portals	G F P C	
Bracing	G F P C	
Paint	G F P C	
Alignment of Members	(G) F P C	

TEXTURE COAT

Condition Rating G F P C
Overall Appearance G F P C
Staining Rating G F P C

Fading G F P C
Needs Spot Painting YES ( ) NO ( )
Needs Repainting YES ( ) NO ( )

Comments
Scaling Rating G F P C
RECOMMENDATIONS:
CLEAN SEAL JOINTS ( )
CLEAN DRAINS ( )

Form BIR 3.3
(Rev. 9-22-98)
DT-0082

JUN 10 2019

Bridge Location No. 57 - SR223 - 0228
Co. Route Log Mile

Date 6/10/19

SUBSTRUCTURE

ABUTMENTS

	Rating	Comments	PILES TO BE REPLACED PILE(S)	ABUTMENT
Caps	G (F) P C			
Breastwall	G (F) P C			
Wings	G (F) P C			
Backwall	G F P C			
Plumb	(G) F P C			
Footing	G F P C			
Piles	G (F) P C			
Embankment	(G) F P C			
Bearing	G F P C			
Slope Paving	G F P C			
Rip Rap	G F P C	N/A		
Earthquake Devices	G F P C			

PIERS

		PILE(S)	PIER
Caps	G F P C		
Columns	G F P C		
Plumb	G F P C		
Footings	G F P C		
Piles	G F P C		
Bearing	G F P C		
Web	G F P C		
Earthquake Devices	G F P C		

N/A

BENTS

		PILE(S)	BENT
Caps	G F P C		
Columns	G F P C		
Plumb	G F P C		
Footings	G F P C		
Piles	G F P C		
Bearing	G F P C		
Bracing	G F P C		
Earthquake Devices	G F P C		

N/A

Piles Need Replacement: NO (X) YES ( )

CUT VEGETATION NO (X) YES ( )

CLEAR DRIFT NO (X) YES ( )

RECOMMENDATIONS:

JUN 10 2019

Form BIR 3.8
(Rev. 9-22-98)
DT-1508

Bridge Location No. 57 - SR223 - 0228
Co. Route Log Mile

Date JUN 10 2019 6-10-19

STREAM CHANNEL DATA AND CONDITIONS

Stream Crossing: BRANCH

I. 1. Type of bed material? clay, silt, sand

2. Has channel shifted? YES ( ) NO (X) NOT APPARENT ( )

3. Condition of rip-rap? G F P C Est. % failed ____ % N/A (X)

4. Overall condition of channel? G (F) P C

5. Item 61 - Code values 0 thru 9 according to the recording and coding guide currently in effect: 6

6. Underwater diver inspection recommended? YES ( ) NO (X)
If yes, why? ____

II. Channel and bank stability conditions: (check if applicable)

1. Steep bank conditions: - Failures upstream (X) Failures downstream (X)

2. Moderate bank erosion (X)

3. Bank vegetation: a. low growth (X) b. large timber (X) c. clear banks ( )
d. dead trees upstream (X) e. dead trees downstream ( )

4. Sediment or gravel accumulation: YES ( ) NO (X) UNKNOWN ( )

5. Channel altered or straightened: YES ( ) NO (X) UNKNOWN ( )

6. Stable conditions: a. live growth (X) b. bedrock ( )
c. boulders ( ) d. flat slopes (<=2:1) ( )

III. Waterway adequacy and debris characteristics: (check if applicable)

1. Bridge deck elevations:
a. level with approach roadway. . . . . (X)
b. higher than approach roadway. . . . . ( )
c. roadway approach >= 2 ft. above natural ground line. . (X)

2. Abutment encroaches into channel. . . . . ( )

3. Large scour (blowhole) under bridge. . . . . ( )

4. Indications that flood waters overtop bridge:
NO (X) YES ( ) OCCASIONALLY ( ) FREQUENTLY ( ) UNKNOWN ( )

5. Debris characteristics:
a. debris/drift present YES ( ) NO (X)
b. debris/drift likely to accumulate YES (X) NO ( )
c. dead trees upstream (X) dead trees downstream ( )

IV. Comments: ____

SPECIAL INSPECTION DATA - FOR REASONS OTHER THAN FC OR SCOUR

I. Does this bridge need a special inspection? YES ( ) NO (X)

II. Reason for special inspection: ____

Inspection Team's Summary

Bridge Location No. 57 - SR223 - 02.28

Inspection Date 6-10-19

Bridge Rating FAIR

THIS IS A 1 SPAN P.C.C.S. BRIDGE
SUBSTRUCTURE IS TIMBER
SAFETY FEATURES ARE METAL APPROACH RAILS, METAL BRIDGE RAILS & 40 TON WEIGHT LIMIT SIGNS
ASPHALT APPROACHES HAVE A/C PATCH & FINE CRACKS
ASPHALT WEARING SURFACE HAS FINE CRACKS
P.C.C.S. HAVE SPALLING & HAIRLINE CRACKS
TIMBER SUBSTRUCTURE HAS LIGHT TO MEDIUM WEATHERING

NO ISSUES WITH SCOUR

ITEMS 59 & 60 CHANGED FROM 4 TO 6 DUE TO REPAIRS

SHAYNE HAYES

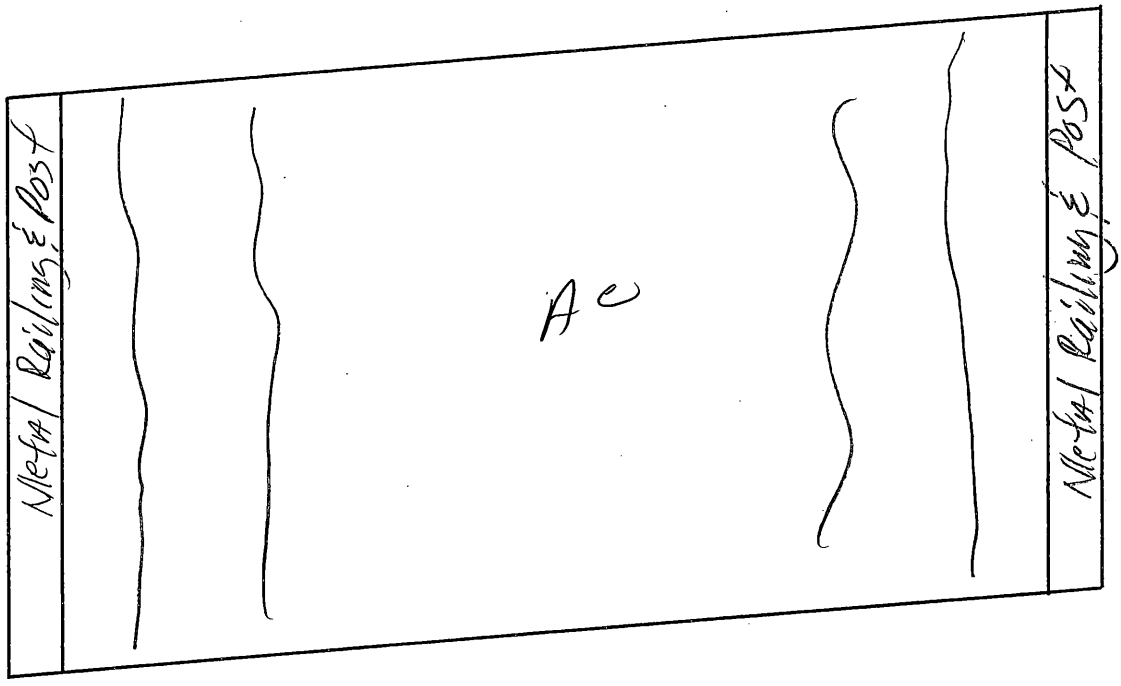
INSPECTOR

CROSS SECTION: YES () NO (X) BRM: YES (X) NO ()

57S81960003 | 57 -- SR223 -- 2.28 | RT

Bridge No. | Co. | Route | Log Mile | R/L | Skew

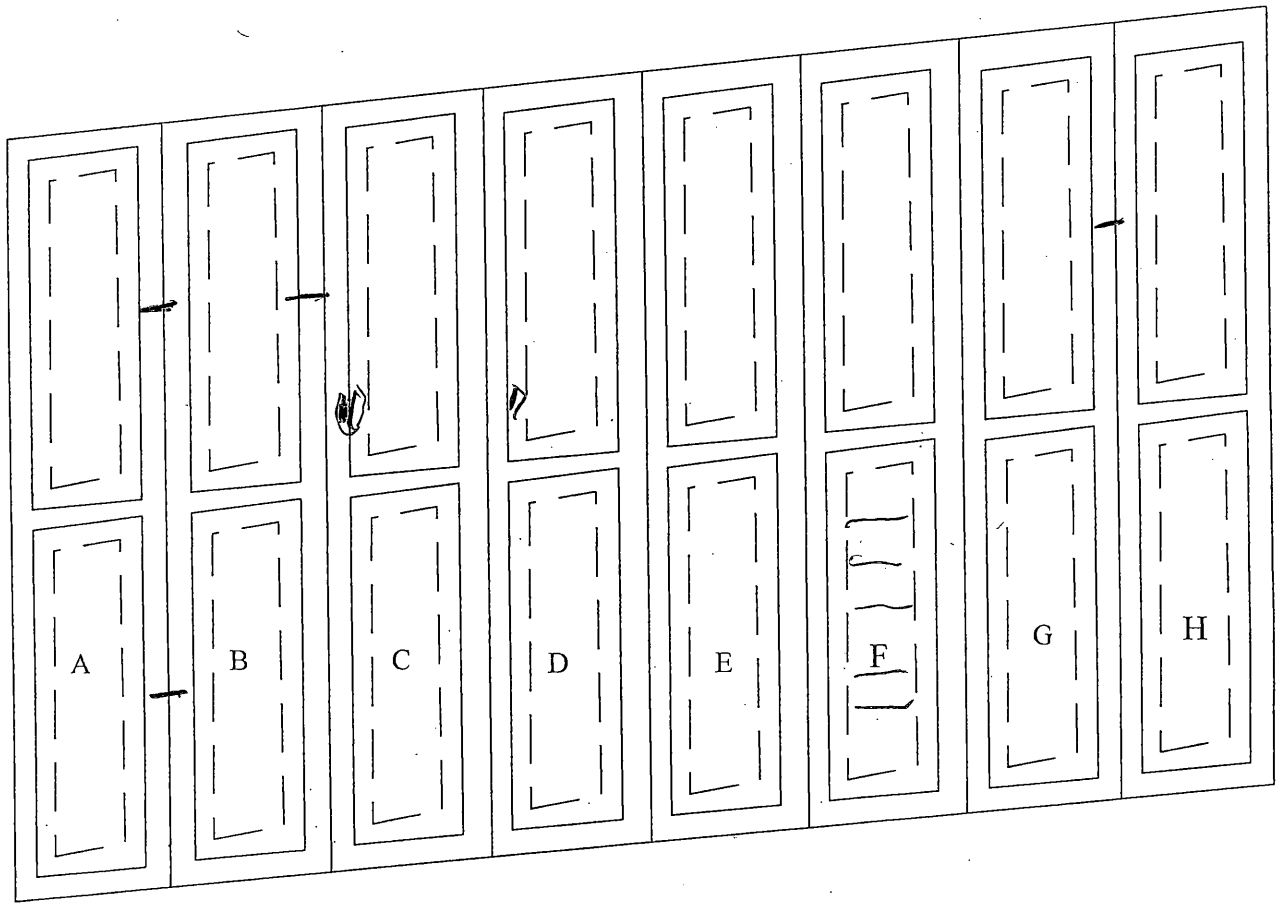
SPAN. NO. | JUN 10 2019



ELEMENT	RATING	COMMENT
TOP DECK	G (F) P C	Fine cracks
CURBS	(G) F P C	
DRAINS	(G) F P C	
JOINTS	G F P C	N/A
	G F P C	

57S81960003 57 -- SR223 -- 2.28 JUN 10 2019

Bridge No. Co. Route Log Mile R/L Skew SPAN. NO. 1



ELEMENT	RATING	COMMENT
SLABS A	(G) F P C	
B	(G) F P C	
C	G (F) P C	Spall 1'L 6"w 2"deep
D	G (F) P C	Spall 1'L 3"tall 1/2"deep
E	(G) F P C	
F	G (F) P C	Hairline cracks
G	(G) F P C	
H	(G) F P C	
BOLTS	G (F) P C	4 missing

JUN 10 2019

Rev. 08/03/00

Date:_____

BRIDGE NUMBER: 57S81960003 57 SR223 0228

Pg. # _____ of _____

CROSSING: BRANCH

DATE 8/3/17

LAST EXPOSURE	ABUT/BENT/ PIER NUMBER	TOTAL HEIGHT TOP OF CAP TO (OR GROUND LINE/ DATE FOR PILES	(t) FOOTING THICKNESS	W/FTG @ H= TOP OF CAP TO TOP OF FOOTING	EXPOSURE
2.0'	Abut 1				1.6'
2.1'	Abut 2				2.2'

TOP OF CAP TO TOP OF WATER: _____

100.00' UPSTREAM: _____

THRU STRUCTURE: _____

100.00' DOWNSTREAM: _____

RIP-RAP: YES: ( ) NO: (X)

@ ABUTMENTS: ~~_____~~

@ BENTS/PIERS: ~~_____~~

UPSTREAM ☐ ~~_____~~

DOWNSTREAM ☐ ~~_____~~

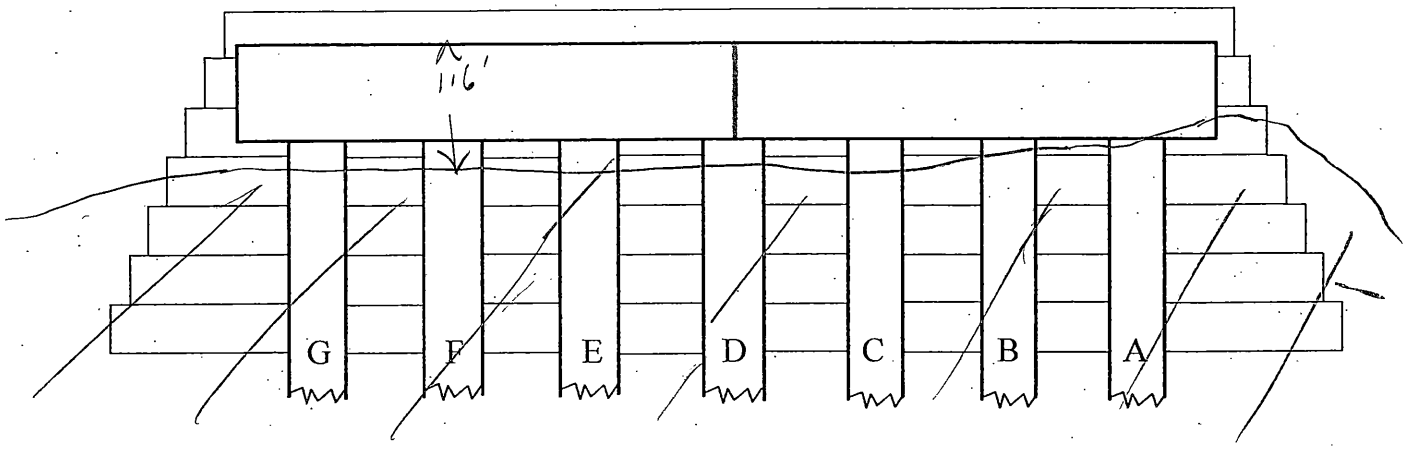
THRU STRUCTURE ☐ ~~_____~~

COMMENTS: _____

57S81960003 57 -- SR223 -- 2.28

Bridge No. Co. Route Log Mile

ABUT. NO. 1 JUN 10 2019



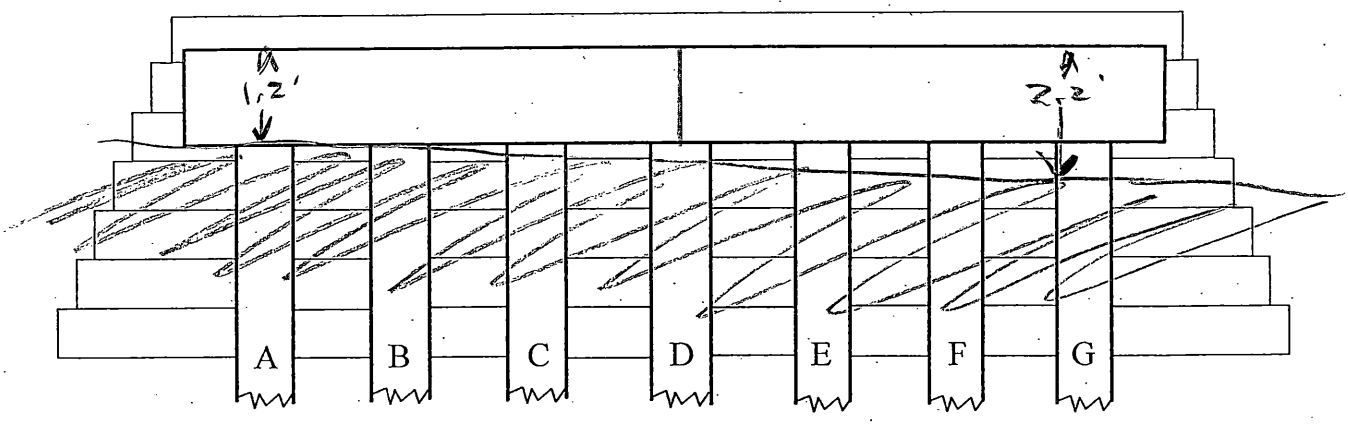
LOOKING BACK

ELEMENT	RATING	COMMENT
CAP	G (F) P C	Light to medium weathering
WINGS	G (F) P C	
PILES A	G (F) P C	
B	G (F) P C	
C	G (F) P C	
D	G (F) P C	
E	G (F) P C	
F	G (F) P C	
G	G (F) P C	
BREASTWALL	G (F) P C	
EMB.	(G) F P C	
VEG.	G (F) P C	Light growth
RIP - RAP	G F P C	N/A
	G F P C	
	G F P C	

57S81960003 57 -- SR223 -- 2.28

Bridge No. Co. Route Log Mile

ABUT. NO. JUN 10 2019 1/2



LOOKING AHEAD

ELEMENT	RATING	COMMENT
CAP	G (F) P C	light weathering
WINGS	G (F) P C	
PILES A	G F P C	NV
B	G F P C	NV
C	G (F) P C	light weathering
D	G (F) P C	
E	G (F) P C	
F	G (F) P C	
G	G (F) P C	
BREASTWALL	G (F) P C	
EMB.	(G) F P C	
VEG.	(G) F P C	
RIP - RAP	G F P C	N/A
	G F P C	
	G F P C	

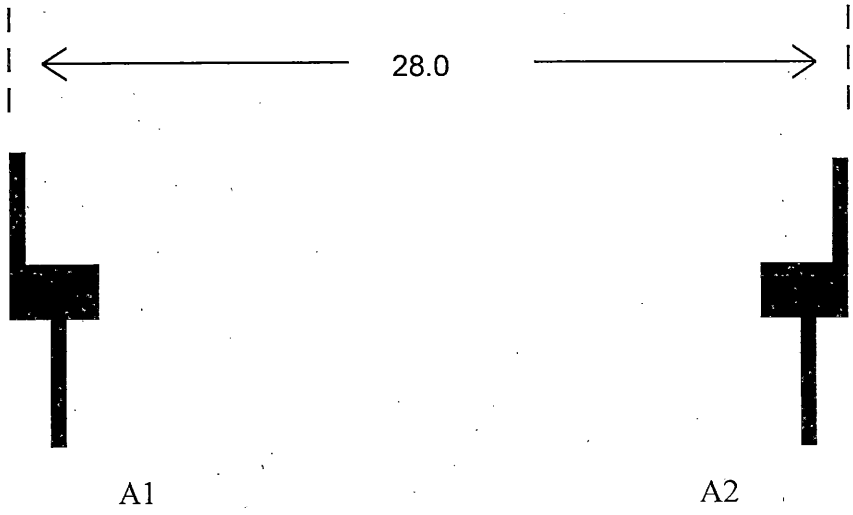
57S81960003 57 SR223 0228 _____
BRIDGE NO.: CO. ROUTE L.M. L/R

SKEW: 75R
No. of Spans: 1
No. of Approach Spans:

Direction of Route →

A1 A2

F = FIXED
E = EXPANSION
S = SIMPLE
C = CONTINUOUS



Structure Inventory and Appraisal Sheet (English Units)

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Unit	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4
0	**12/3**	**Re Concrete Deck**	**sq.ft**	**484.00**	**91%**	**440.00**	**0%**	**0.00**	**9%**	**44.00**	**0%**	**0.00**
0	510/3	Wearing Surfaces	sq.ft	440.00	100%	440.00	0%	0.00	0%	0.00	0%	0.00
0	1090/3	Exposed Rebar	sq.ft	44.00	0%	0.00	0%	0.00	100%	44.00	0%	0.00
0	**107/3**	**Steel Opn Girder/Beam**	**ft**	**154.00**	**95%**	**146.00**	**0%**	**0.00**	**5%**	**8.00**	**0%**	**0.00**
0	515/3	Steel Protective Coating	sq.ft	154.00	95%	146.00	0%	0.00	5%	8.00	0%	0.00
0	3420/3	Peel/Bub/Crack(St) Protect Coat)	sq.ft	8.00	0%	0.00	0%	0.00	100%	8.00	0%	0.00
0	1060/3	Corrosion	ft	8.00	0%	0.00	0%	0.00	100%	8.00	0%	0.00
0	**216/3**	**Timber Abutment**	**ft**	**50.00**	**90%**	**45.00**	**0%**	**0.00**	**10%**	**5.00**	**0%**	**0.00**
0	1140/3	Decay/Section Loss	ft	5.00	0%	0.00	0%	0.00	100%	5.00	0%	0.00

① 3220

60

116 PCCS slabs 224'

1080

1130

2'

5'

6/10/19