2016 NBIS Routine Inspection Summary

pennsylvania
DEPARTMENT OF TRANSPORTATION

West Shore Drive over Tributary to Maiden Creek

Maidencreek Township, Berks County

BMS ID: 06 7222 0960 0002
BRKEY: 5394



In cooperation with: PennDOT District 5-0

Inspection Date: 7/18/16
Inspection Category & Cost: A1 - $1,945
Load Rating Cost: N/A

Weight Limit Posting:	**N/A**	**Vertical Clearance Signs:**	**N/A**
Hazard Clearance Signs:	**Not Required**	**One Lane Bridge Signs:**	**N/A**
Status of Load Ratings:	**No Change**	**Underwater Inspection Needed:**	**No**

Structure Type:	Reinforced Concrete T-Beam
Year Built (Reconstructed):	1934
Structure Length:	23'
Scour Critical Bridge Indicator:	5 **(SCBI changed from 3 to 5; this bridge is no longer Scour Critical)**
Inspectors:	Scott A. Stock, P.E., C.B.S.I. Jamie L. Hess, C.B.S.I.

Not for Public Record – Structure Safety Inspection Study
This document is the property of Maidencreek Township, Berks County, PA. The data and information contained herein are part of a structure safety inspection study. This safety study is only provided to those official agencies or persons who have responsibility in the highway transportation system and may only be used by such agencies or persons for safety-related planning or research. The document and information are not public pursuant to 65 P.S. §67.101 et seq. and 23 U.S.C. §409 and may not be published, released or disclosed without the written permission of Maidencreek Township.

Mackin

Mackin Engineering Company
175 Limekiln Road
Suite 300
New Cumberland, PA 17070

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JEFFREY R RAYKOS
ENGINEER
No. PE048783E

8/8/16

Jeffrey R. Raykos, P.E.

Mackin

TABLE OF CONTENTS

PAGE

LOCATION MAP 1

CONDITIONS SUMMARY 2

LOAD RATING SUMMARY 4

POSTING SUMMARY 4

MAINTENANCE RECOMMENDATIONS 5

PHOTOGRAPHS 6

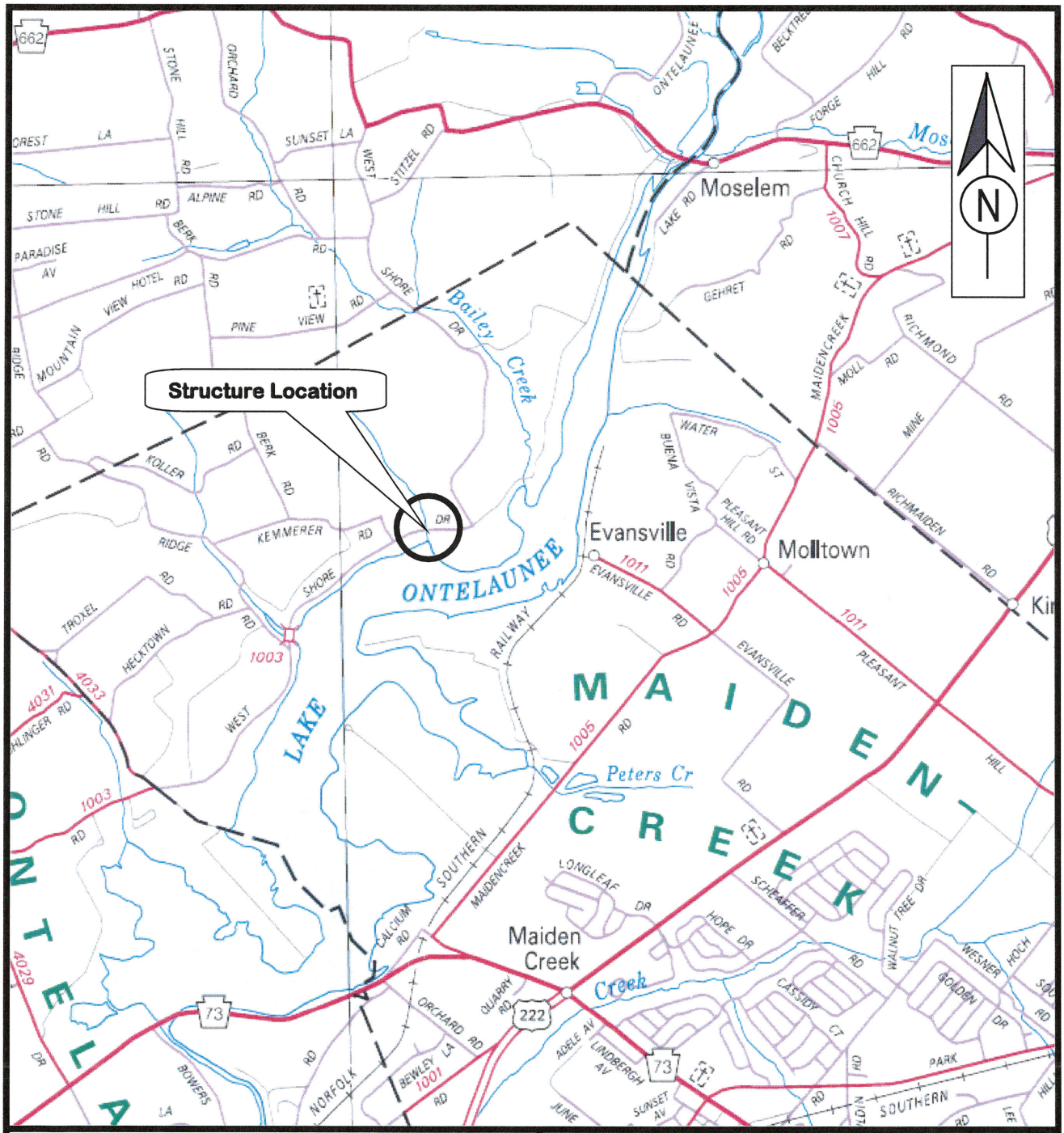
Appendices:

Appendix A – Bridge and/or Channel Sketches

Appendix B – Form D450 – Field Inspection Forms *(iForms)*

BMS ID: 06 7222 0960 0002
BRKEY: 5394
INSPECTION DATE: 7/18/16

Mackin



Mackin

Pittsburgh, PA Harrisburg, PA

LOCATION MAP
West Shore Drive over Tributary to Maiden Creek
Maidencreek Township, Berks County
BMS: 06 7222 0960 0002
BRKEY: 5394
40°28'40.50"; -75°54'33.13"

CONDITIONS SUMMARY

BMS - DESCRIPTION	RATING PREV.	RATING NEW	COMMENTS
Signing	-	-	There are no signs present and none are required.
(6B39) – Approach Rdwy.	N	N	Not Applicable
(6B40) – Deck Wrg. Surface	N	N	Not Applicable
(1A01) – Deck	N	5	The top of the concrete deck is underfill and not visible. The underside of the deck has scattered shallow spalls with exposed longitudinal and transverse rebar throughout. The worst of this condition exists along the right side of the bridge between beams 5 and 6. It is estimated that approximately 1% of the surface area is spalled.
(1A04) – Superstructure	5	5	There are 6 reinforced concrete T-beams with all of the beams having areas of spalling with exposed stirrups and longitudinal rebar. Some areas have up to 4 exposed longitudinal rebar, with beam 6 having the worst condition. On this beam in the midspan area, 2 of the longitudinal bars are unbonded and one of the bars has minor section loss with 1.24" remaining thickness (1.28" original). Most of the exposed longitudinal bars have surface rust with insignificant section loss. The concrete end diaphragms have a couple isolated hairline cracks. The bearings are not visible.
(6B36, 6B37) – Paint Condition	NN	NN	Not Applicable
(1A02) – Substructure	6	6	The concrete abutments have random hairline cracks with some efflorescence. There is light abrasion along the far abutment at the water line. The concrete wingwalls have a few hairline cracks. The near left wingwall has a 1/16" wide horizontal crack with light spalling and delamination that extends from the beam seat at mid-height. No scour was observed and no footings are exposed.
(1A05) – Channel	6	6	The narrow channel enters the bridge at the far left wingwall and flows along the far abutment. The near abutment is out of the normal flow and there is a 1.5' high sediment buildup along the near 2/3rd of the span. The streambed consists of sand, silt and some gravel. All the banks are densely vegetated with minor erosion.
(1A03) – Culvert	N	N	Not Applicable
(4A09) – Structural Cond.	5	5	Based on the superstructure condition.

Mackin

(IA02) – Safety Features	8888	8888	The bridge is under fill.

UNDERWATER COMMENTS: No underwater inspection is required.

SCOUR COMMENTS: There is no observed scour present.

NEXT INSPECTION: Routine – July 2018

REPORT WRITTEN BY: Scott A. Stock, P.E., C.B.S.I.
REPORT REVIEWED BY: Jason R. Carver, E.I.T., C.B.S.I.

West Shore Drive over Tributary to Maiden Creek

Maidencreek Township, Berks County

Load Rating Summary

The current load ratings for the bridge were computed by Mackin Engineering, dated August 2014, using engineering judgment. Plans for this structure are not available, so the procedure in Publication 238, Appendix IP-03B (*Load Rating of Reinforced Concrete Bridges Without Plans*) was used.

Vehicle	Inventory Rating			Operating Rating			Safe Load Capacity Rating	
	Factor	Tons	Controlling Stress (M/S)	Factor	Tons	Controlling Stress (M/S)	Factor	Tons
H20	1.40	28	M	2.35	47	M	2.35	47
HS20	1.42	51	M	2.39	86	M	2.39	86
ML80	0.98	36	M	1.64	60	M	1.64	60
TK527	1.10	44	M	1.85	74	M	1.85	74

M=Moment Controlled
S=Shear Controlled

Posting Summary

According to the load rating values in the above table, there is no current need for a bridge weight restriction.

West Shore Drive over Tributary to Maiden Creek

Maidencreek Township, Berks County

Maintenance Recommendations

Priority Code 0 – Immediate Action Required (within 7 days):

None at this time.

Priority Code 1 – As Soon As Work Can Be Scheduled (within 6 months):

None at this time.

Priority Code 2 – Adjust Schedule As Needed:

None at this time.

Priority Code 3 – Add to Scheduled Work:

1. 42-Repair/Replace Concrete Beam – Repair/Replace spalls on beams.
   6 EA x $9,741 per EA — $58,446

2. 6-Repair Concrete Deck – Repair shallow spalls.
   2 SY x $279 per SY — $558

3. 12-Remove Deposits – Remove deposit along the near abutment and along the upstream and downstream near banks.
   42 CY x $16 per CY — $672

Priority Code 4 – Program:

None at this time.

Priority Code 5 – Routine:

None at this time.

Estimated Cost of Maintenance Items = $59,676

Note: These costs are estimates for maintenance items only. They do not include costs for engineering, permitting, right-of-way easements, contractor's overhead and construction inspection, which could add significantly to the total cost of rehabilitating the structure.

Photographs



Photo No. 1

Near Approach



Photo No. 2

Far Approach



Photo No. 3

General Superstructure



Photo No. 4

Channel under the Bridge

Mackin



Photo No. 5

Looking Left (Upstream) from Bridge



Photo No. 6

Looking Right (Downstream) from Bridge



Photo No. 7

Typical Deck Underside



Photo No. 8

Roadway Guiderail on Bridge

BC 783



Photo No. 9

Near Abutment



Photo No. 10

Far Abutment



Photo No. 11

Left Elevation



Photo No. 12

Right Elevation



Photo No. 13

Beam 1 – Spalling with Exposed Stirrups at the Far Abutment



Photo No. 14

Beam 3 – Spalling with Exposed Stirrups and Longitudinal Rebar



Photo No. 15

Closeup of Rebar Corrosion on Beam 3



Photo No. 16

Beam 4 – Spalling with Exposed Stirrups and Longitudinal Rebar



Photo No. 17

Beam 5 – Spalling with Exposed Stirrups and Longitudinal Rebar



Photo No. 18

Beam 6 – Spalling with Exposed Longitudinal Rebar Near Midspan



Photo No. 19

Beam 6 – Closeup of Exposed Longitudinal Rebar (2 unbonded bars)



Photo No. 20

Beam 6 – Exposed Bars at Far Abutment



Photo No. 21

Deck Underside in Bay 5

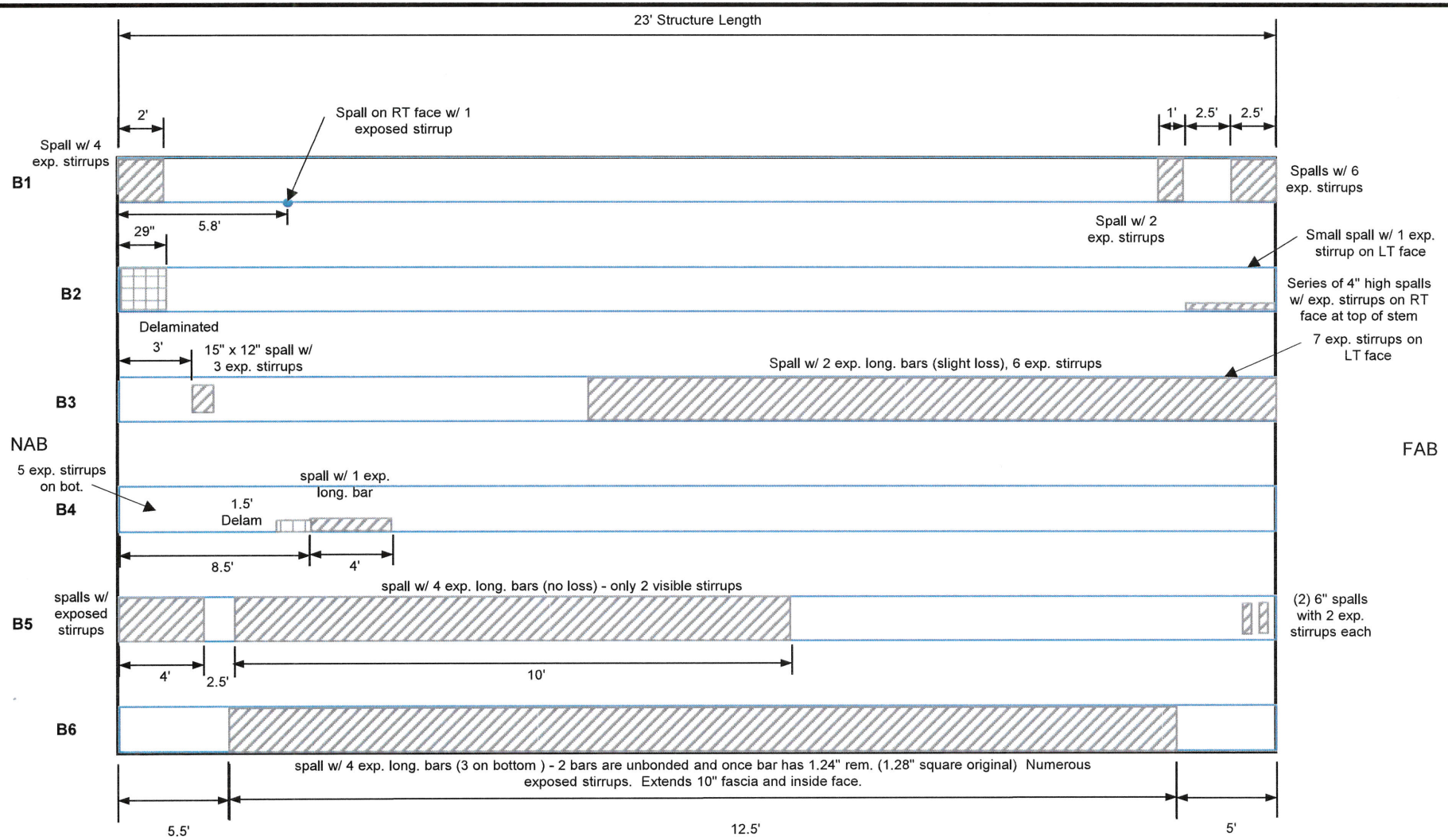


Photo No. 22

Near Left Wingwall Crack with Minor Spalls

APPENDIX A

Bridge and/or Channel Sketches



Reflected Plan (looking down on bridge)

BMS NO. 06 7222 0960 0002
West Shore Drive over Tributary to Maiden Creek
District: 5-0 BRKEY 5394
Township: MaidencreekTownship
Scale: NTS Sheet: 1 of 1

Mackin *Consulting Engineers Since 1960*

District 5-0
Stream Sketch & Underclearance

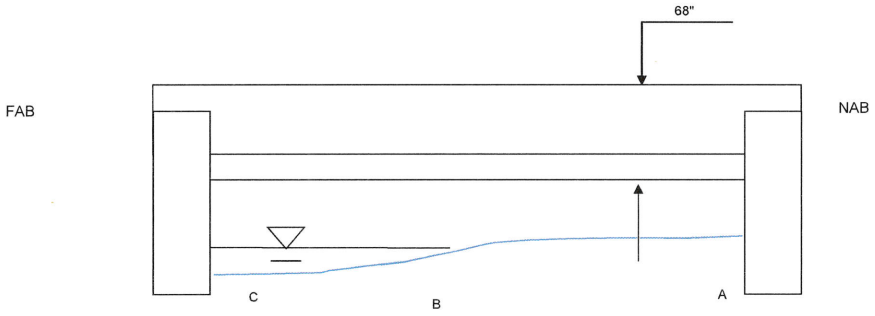
BMS ID 06 7222 0960 0002
Br Key # 5394

DONE BY SAS DATE 7/26/2016
VERF. BY JRC DATE 7/28/2016

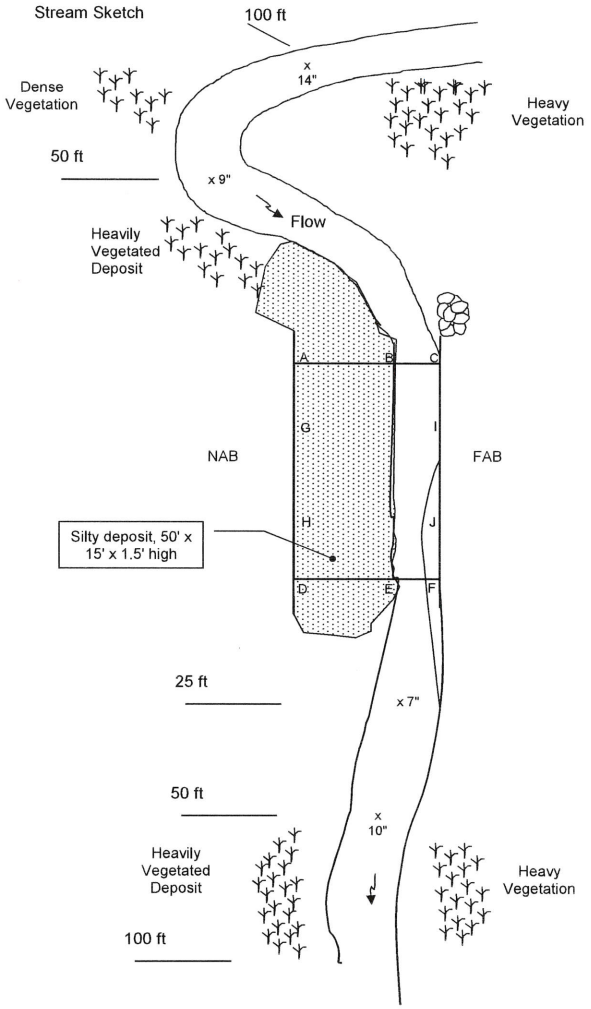
Year	7/18/2012			7/24/2014			7/18/2016					
Point	V.C.	W.D.	C.P.	V.C.	W.D.	C.P.	V.C.	W.D.	C.P.	V.C.	W.D.	C.P.
A	5.3'	0"	-	5.5'	0"	11.2'	5'-02"	0"	10'-10"			
B	6.8'	7"	-	6.7'	7"	-	5'-02"	0"	-			
C	6.7'	6"	-	6.6'	6"	12.3'	6'-03"	0"	11'-11"			
D	5.2'	0"	-	5.3'	0"	11.0'	5'-05"	0"	11'-1"			
E	6.3'	1"	-	6.4'	4"	-	4'-11"	0"	-			
F	6.4'	0"	-	6.3'	2"	12.0'	6'-01"	0"	11'-9"			
G, B2	-	-	-	5.7'	0"	-	5'-04"	0"	-			
H, B5	-	-	-	5.5'	0"	-	5'-08"	0"	-			
I, B2	-	-	-	6.7'	6"	-	6'-05"	1"	-			
J, B5	-	-	-	6.5'	1"	-	6'-01"	0"	-			

V.C. = Vertical Clearance measured to bottom of beam unless * is used then it is measured to top of concrete headwall.
W.D. = Water Depth
S.D. = Stream Depth
O.S.D. = Observed Scour Depth
C.P. = Corner Point is measured from the streambed to the top of the concrete headwall.

Upstream Elevation Sketch



Stream Sketch



Observed Scour Depth Calculator	NAB	FAB
Max water depth, inches =	0 in.	1 in.
Average stream depth, inches =	10 in.	10 in.
Observed scour depth, inches =	No Scour	No Scour

APPENDIX B

FORM D-450 – Field Inspection Forms *(iForms)*

pennsylvania
DEPARTMENT OF TRANSPORTATION

SITE DATA
Form A

Form D-450A

5A01	SR ID: 06722209600002	5A03	BR Key: 5394	7A01	Inspection Date: July 18, 2016

1A09	**Inspection Status:**	2 - Submitted
7A02	**Team Leader:**	523 Mackin Engineering C Stock
7A03	**Inspection Type:**	R - Regular (routine)
7A05	**Inspected By:**	8 - Consulting Firm

Structure Description

5A08	**FHWA Facility Carried:**	WEST SHORE DRIVE
5A07	**Features Intersected:**	TRIB.TO MAIDEN CREEK
5A09	**Location:**	EDGE OF LAKE ONTELAUNEE
5C01	**Roadway Name:**	WEST SHORE DRIVE
5A06	**City / Borough Name:**	06/222 - MAIDEN CREEK

Structure Type

Main

6A26	**Material Makeup:**	2 - Concrete(in place)
6A27	**Physical Makeup:**	1 - Reinforced
6A28	**Span Interaction:**	1 - Simple, non-comp
6A29	**Structural Config:**	03 - T-beams

Approach

6A26	**Material Makeup:**	
6A27	**Physical Makeup:**	
6A28	**Span Interaction:**	
6A29	**Structural Config:**	

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

SITE DATA
Form A

Form D-450A

5A01	SR ID: 06722209600002	5A03	BR Key: 5394	7A01	Inspection Date: July 18, 2016

Sign Information

ID01	ID02	ID03	ID06	ID04	ID07	ID05	
	Sign	Sign	Near	Bridge Site		Far	
Type of Sign	Needed	Message	Adv	Near	Far	Adv	Comments
0 - Bridge	No						
1 - Bridge Weight Limit	No						
2 - Except Combinations	No						
3 - One Truck at a Time	No						
4 - Vertical Clearance On	No						
5 - Vertical Clearance Under	No						
6 - One Lane Bridge	No						
7 - Narrow Bridge	No						
8 - Hazardous Clearance	No						
9 - Other	No						

Features Intersected

6C02		5C03	5B09	5C06	5C29	4A20	4A19	6C18	6C19	6C20	6C21	6C22	6C23	6C24	6B17
SR ID		On/	Skew			Min Lat Cl		Tot Hor Cl		Min Vrt Cl Rdwys		Vrt Cl Over 10ft		VT	
SR	Seg	Under	Angle	Dir	NHS	Left	Right	Left	Right	Left	Right	Left	Right	Sign	ADT
_	_	1	90	N/A	0 - Not on NHS	-1.0	-1.0	-1.0	24.3	-1.0	99.9	-1.0	99.9	_	300
		2	-1	N/A	-1	-1.0	-1.0	-1.0	-1.0	-1.0	7.0	-1.0	-1.0		-1

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

SITE DATA
Form A

Form D-450A

5A01 **SR ID:** 06722209600002 | 5A03 **BR Key:** 5394 | 7A01 **Inspection Date:** July 18, 2016

6B15 **Design Exceptions:**
6A50 **Sup Latent Problem:** _
6A51 **Sub Latent Problem:** _

Deck Geometry

Table Used for Appraisal:

Controlling Values

5C10 **ADT:** 300
5C27 **Bridge Road Width:** 0.0

4A10 **Appraisal:** N - Not applicable (NBI)
Notes: bridge under fill

4A11 **UnderClr Appr:** N - Not applicable (NBI)
6B13 **Controlling Vertical:** -1.0 FT
Controlling Lateral:

Traffic Safety Features

Feature Type	IA01 Location	IA02 Adequacy Rating	IA03 Description	5C08 Posted Spd Lmt (mph)
1 - Railing		8 - good cond/meets stds	Bridge under fill.	-1
Comment: 24" high guiderail continuous across with 12' post spa.; no offsets				
2 - Transition		8 - good cond/meets stds		-1
Comment: Not required continued from bridge (under fill).				
3 - Approach Guiderail		8 - good cond/meets stds		-1
Comment: 12' post spa.; no offsets (under fill). Collision damage w/ bent rail at far right.				
4 - Approach railend		8 - good cond/meets stds	NR,FL,FR- box gloves; NL- curled & buried	-1
Comment: not required Underfill NR,FL,FR- box gloves w/ varying degrees of damage; NL- curled & buried into embankment				

Approach Alignment

4A02 **Code:** N - Not Applicable
Comment: no sight restriction or speed reduction

Approach Roadway

6B39 **Code:** N - N/A
Pavement: BITUM.- heavily worn with random sealant.
NEAR- several longitudinal (light throughout right lane) and random cracks.
FAR- numerous longitudinal (moderate throughout right lane) and random cracks; small settlement cracked area in right lane at bridge; moderate edge cracking along left away from bridge with 3"+ of settlement.
Drainage: n/a
Shoulders: n/a

Approach Slab

6B38 **Code:** N - N/A
Pavement:

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

SITE DATA
Form A

Form D-450A

5A01	**SR ID:** 06722209600002	5A03	**BR Key:**	5394	7A01	**Inspection Date:**	July 18, 2016

6B04 **Bump at Bridge:** No Bump

6A39 **Relief Joints:** 0 - Joints not present

6A41 **Number of Joints:** 0

Comment:

6B02 **New Wearing Surface Under Bridge:** No

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

DECK AND SUPER STRUCTURE DATA

Form B

Form D-450B

5A01 **SR ID:** 06722209600002 | 5A03 **BR Key:** 5394 | 7A01 **Inspection Date:** July 18, 2016

Deck Wearing Surface

Main

5B02 **Type of Wearing Surface:** N - N/A (no deck (NBI))
5B03 **Type of Memb. Water-Proof:** N - N/A (no deck (NBI))
5B04 **Deck Corrosion Protection:** N - N/A (no deck (NBI))
6A33 **Thickness:** 0.0
6A34 **Date Recorded:** 01/01/1901

Approach

6A30 **Type of Wearing Surface:** _ - Unknown (NBI)
6A31 **Type of Memb. Water-Proof:** _ - Unknown (NBI)
6A32 **Deck Corrosion Protection:** _ - Unknown (NBI)
6A33 **Thickness:** 0.0
6A34 **Date Recorded:** 01/01/1901

6B40 **Condition Rating:** N - Not applicable
IC02 **Dk WS Notes:** BITUM.- worn; several longitudinal and random cracks w/ random sealant.

Expansion Joints

6A41 **Number of Expansion Joints:** 0

Joint Number	VD25 Joint Type	VD26 Movement Class	VD27 Manufacture Code
0			

Deck

1A01 **Condition Rating:** 5 - Fair-all primary structural elements are sound but may have minor section loss, cracking, spalling
6B07 **Est. Spall Delamination:** 1.00 %
6B08 **Date:** 07/18/2016
6B10 **Est. Chloride Content:** 0.00 %
6B11 **Date:** 01/01/1901
1A07 **Unrepaired Spalls:** 7.00 SF

Deck Top: n/a

Deck Underside: Scattered shallow spalls with exposed longitudinal and transverse rebar (mostly minor losses) due to poor cover; worst cover spalling in right fascia bay where numerous transverse and longitudinal bars are exposed. Estimate 1% of total area is spalled.

Deck Drainage: n/a

Expansion Joints: n/a

Deck Notes:

Superstructure

1A04 **Condition Rating:** 5 - Fair-all primary strutural elements are sound but may have minor section loss, cracking spalling.

Narrative: T-beam (6)

4 bottom longitudinal bars with 1.28" square thickness

7/18/16: Condition rating of 5 was given becuase all beams except B6 have exposed bars, but they are still bonded and have no section loss. The unbonded bars and slight section loss at B6 are considered an isolated defect that does not characterize the overall condition of the bridge. B6 would warrant a condition rating of 4.

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

5A01 **SR ID:** 06722209600002 5A03 **BR Key:** 5394 7A01 **Inspection Date:** July 18, 2016

Girders/Beams: Beam 1:

- spalled on bottom for first 2' with exposed stirrups on the bottom with heavy surface rust and minor loss.
- Last 30" of beam at FAB is spalled on bottom in areas with exposed stirrups (6) that have heavy surface rust with minor loss.
- There is another area 30" from this one that has 12" of spalling with exposed stirrups (2) that have heavy surface rust.
- Right side has several small spalls at the top with exposed stirrups. A full height exposed stirrup on RT at 5.8' from NAB.

All due to poor cover.

Beam 2:

- small spall on left face 30" from FAB with 1 exposed stirrup.
-The last 5' on the right face has small (4" high) spalls with exposed stirrups at the top of the stem.
- Bottom is delaminated for the first 29" at the NAB

Beam 3:

- Underside has spalled from midspan to FAB with up to 2 exposed longitudinal rebar (slight loss) and 6 exposed stirrups all with heavy surface rust.
- Small 15" x 12" spall on bottom, 3' from NAB with 3 exp. stirrups
- Left face has 7 exposed stirrups at FAB

Beam 4:

- underside is spalled on right with 1 exposed longitudinal rebar for a 4' length starting 8.5' from NAB; delam and prespalls extend for 1.5' towards NAB from this spall.
- the near side has 5 exposed stirrups on the bottom all with heavy surface rust, starting 3' from NAB.

Floorbeams: Beams continued:

Beam 5:

- first 4' from NAB random spalls with exposed stirrups on bottom and on LT at top.
- Bottom spalled with all 4 exposed longitudinal rebar starting at 6.5' from NAB and continuing for 10'. No rebar loss, only 2 exposed stirrups visible at the far end of the spall.
- (2) 6" long spalls on the bottom at the FAB with 2 exposed stirrups each.

Beam 6:

- underside spalled with up to 4 exposed longitudinal rebar (3 on bottom) starting 5.5' from NAB and stopping 5' from FAB and extends 10" up LT and RT faces. Two of the exposed longitudinal rebar are debonded (bottom bar has 1.24" rem. thickness). There is numerous stirrups exposed. There is a 1' long spall with 1 exposed stirrup at the FAB.

Stringers: n/a

Diaphragms: CONC. ENDS- couple isolated hairline cracks

Truss Members: n/a

Portals/Bracings: n/a

Bearings: not visible

Drainage System: n/a

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

ABUTMENT DATA

Form C

Form D-450C

5A01 **SR ID:** 06722209600002 | 5A03 **BR Key:** 5394 | 7A01 **Inspection Date:** July 18, 2016

1A02 **Substructure Condition Rating:** 6 - Satisfactory-structural elements show minor deterioration

Notes:

Near Abutment

Backwall: n/a
Bridge Seats: no problems observed
Cheekwalls: n/a
Stem: CONC.- few minor hairline cracks (efflo.) mid-height between B2 and B3; water stains under Bay 1 and Bay 3
Wings: LT- horizontal 1/16" wide from bottom of Beam1 w/ light spalling / delam. across at mid-height; RT- random minor hairline cracks
Footing: not exposed
Piles: n/a
IN20 **Scour Undermine:** 0 - No
Settlement: none observed
Embank Slope-wall: n/a
Wall Drainage: n/a

Far Abutment

Backwall: n/a
Bridge Seats: light cracking / edge chipping in bay #2
Cheekwalls: n/a
Stem: CONC.- vertical hairline crack between B3 and B4; light abrasion across bottom (mostly left)
Wings: LT- few minor hairline cracks (efflo.) at mid-height; RT- light hairline cracking at top toward end; edge chipping on top face

Both have minor scale along flow line.
Footing: not exposed
Piles: n/a
IN20 **Scour Undermine:** 0 - No
Settlement: none observed
Embank Slope-wall: n/a
Wall Drainage: n/a

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

PIER DATA

Form D

Form D-450D

5A01	SR ID: 06722209600002	5A03	BR Key: 5394	7A01	Inspection Date: July 18, 2016

Navigational Control

4A21 **Controls Exist:** Unknown

4A22	**Vert Clearance:**	0.00
4A24	**Llft Vertical:**	-1.00
4A23	**Horz Clearance:**	-1.00
4A07	**Pier Protection:**	Not Applicable (N)

Pier Details

5D02 **Pier/Bent Number:**

IN20 **Scour Undermine:**

Condition Summary:

Bridge Seats:

Cheekwalls:

Columns/Stems:

Settlement:

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

ELEMENT DATA

Form E

Form D-450E

5A01 **SR ID:** 06722209600002 | 5A03 **BR Key:** 5394 | 7A01 **Inspection Date:** July 18, 2016

6B03 **Inventory Item Review Recommended:** No

IC01 **Notes:**

Element Details

5D02 **Span:** | 5D04 **Span Type:**

1B01 **Element ID: -**

1B03 **Environment:** | 1B05 **Scale Factor Measurement:**

Description:

1A10 **Total QTY:** | 1A11 **Cond State 1 QTY:** | 1A11 **Cond State 2 QTY:**

1A11 **Cond State 3 QTY:** | 1A11 **Cond State 4 QTY:**

Condition:

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

FRACTURE CRITICAL

Form F

Form D-450F

5A01 **SR ID:** 06722209600002 | 5A03 **BR Key:** 5394 | 7A01 **Inspection Date:** July 18, 2016

Main

6A44 **Group:** 9 - Group 9

6A45 - 6A48 **Critical Rating Factor:** 9993

6A49 **Total Critical Rating Factor:** 30

Structure Type (Dept)

6A26 **Material Makeup:** 2 - Concrete(in place)

6A27 **Physical Makeup:** 1 - Reinforced

6A28 **Span Interaction:** 1 - Simple, non-comp

6A29 **Structural Config:** 03 - T-beams

Approach

6A44 **Group:**

6A45 - 6A48 **Critical Rating Factor:**

6A49 **Total Critical Rating Factor:** 0

Structure Type (Dept)

6A26 **Material Makeup:**

6A27 **Physical Makeup:**

6A28 **Span Interaction:**

6A29 **Structural Config:**

Fracture Critical Details

IF01 **Location:** | IF02 **Type:** | IF05 **FC Stress Category:**

IF03 **Member:**

IF04 **Member Detail:**

IF06 **Notes:**

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

UNDERWATER INSPECTION

Form G

5A01	SR ID: 06722209600002	5A03	BR Key: 5394	7A01	Inspection Date: July 18, 2016

IU00a **UW Reviewer Action:**

IU00b **Reviewer Comments:**

IU02 **Number of Units:** 0

IU03 **SCBI Source:** O - observed

IU01 **Recalculate SCBI:** 0 - no recalc needed

4A08 **SCBI:** 5 - Stable w/in footing

IU04 **Overall SCBI:** 5

IU05 **SAR:** 66.00

IU06 **Streambed Material #1:** A5 - Stable nat alluvium

IU06 **Streambed Material #2:** A4 - Alluvium/advanced

IU07 **Notes:** channel material based on presence of lack of scour over a long time period.

gravel, sand, silt

Current Countermeasures

CM Num	IU21 Type	IU22 Location	IU23 Condition	IU24 Subunit

Possible Countermeasures

PCM Num	IU25 Location	IU26 Work Candidate

SAR Calculation Data

IU08 **Debris Potential:** 1 - Medium

IU09 **Trapping Potential:** 1 - Medium

IU10 **Pressure Flow:** 0 - No

IU11 **NAB Location:** 2 - Right

IU12 **FAB Location:** 1 - Left

US Left Wingwall

IU13 **Presence:** 1 - Yes

IU14 **Condition:** 1 - Good

US Right Wingwall

IU15 **Presence:** 1 - Yes

IU16 **Condition:** 1 - Good

Horizontal Debris Blockage

IU17 **Start:** 33

IU18 **End:** 100

Vertical Debris Blockage

IU19 **Start:** 0

IU20 **End:** 15

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

UNDERWATER INSPECTION

Form G

5A01 **SR ID:** 06722209600002 5A03 **BR Key:** 5394 7A01 **Inspection Date:** July 18, 2016

Sub Unit OSA Data

Observed Scour Rating Components

IN01 Sub Unit	IN12 Pier/ Abut Type	IN13 Inv. Found Type	IN14 Found Type	IN15 Strmbd Mat	IN19 Move Ind	IN04 Chg Since Last Insp	IN05 Scour Hole	IN06 Debris Potential	IN07 Scour-ability	IN08 Opening Adeq. / Channel	IN09 Sediment	IN10 Alignment	IN11 Velocity/ Stream Slope	IN03 Observed Scour Rating
FAB	3	P	5	A5	0	8	9	6	5	8	8	5	7	6
NAB	3	P	5	A5	0	8	9	6	5	8	6	5	7	6

Other Subunit Details

IN01 Sub Unit	IN16 UW Insp Type	IN18 Water Dept	IN17 Observed Scour Depth	IN20 Scour Undermine	IN21 Counter-measures	IN02 Info from Current Insp	IN22 100 yr Flood Calc Scour Depth	IN23 500 yr Flood Calc Scour Depth	IU27 SCBI Code
FAB	E	0.1	0.0	0	0	1	0.0	0.0	5

IN24 **Notes:** No observed scour present. No footing exposed.

NAB	E	0.0	0.0	0	0	1	0.0	0.0	5

IN24 **Notes:** Out of normal flow. No footing exposed.

Underclearance

IL09 **Origin Description:**
IL10 **Horizontal:**
IL11 **Vertical:**
IL12 **Notes:**

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

CULVERT DATA

Form H

5A01	SR ID: 06722209600002	5A03	BR Key: 5394	7A01	Inspection Date: July 18, 2016

1A03 **Culvert Condition Rating:** N

Notes:

VD19 **Length of Culvert Barrel:** -1.00 **FT**

#	Opening Type	Length	Min Fill Height	Max Fill Height	Eff Width

Top Slab:

Barrel:

Floor/Paving:

Headwall:

Wings:

Settlement:

Debris:

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

CHANNEL AND WATERWAY DATA

Form J

5A01	SR ID: 06722209600002	5A03	BR Key: 5394	7A01	Inspection Date: July 18, 2016

Channel

1A05 **Channel/ Channel Protection Cond. Rating:** 6

Channel: Narrow channel enters at the far left wing and flows along the far abutment. The near abutment is out of normal flow.

Streambed material is sand & silt with some gravel.

Banks: All of the banks are densely vegetated with minor erosion.

Streambed Movements: None observed.

Debris, Vegetation: Heavy brush & tree growth U/S & D/S. Silty deposit for 2/3 of the opening along the near abutment, extends U/S & D/S.

River Control Devices: None observed.

Embank/Strmbed Contr: None observed.

Drift Other: None observed.

Waterway Adequacy

1A06 **Appraisal Code:** 8

Notes: Bridge under fill; wearing surface level with approaches.

IL02 **Overtop Risk:** S - Slight

IL03 **Traffic Delay:** I - Insignificant

5C22 **Functional Class:** 09 - Rural Local

High Water Mark

IL05 **Elevation:** 0.0 IL06 **Date:** January 01, 1901 IL07 **New High Water Mark:** No

Notes: Unknown.

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

PAINT, STRUCTURE APPRAISAL AND LOAD RATINGS

Form K

5A01 **SR ID:** 06722209600002 | 5A03 **BR Key:** 5394 | 7A01 **Inspection Date:** July 18, 2016

Paint Condition

6B36 **Paint Cond Rating:** N - Not Applicable
6B37 **Ext of Paint Cond:** N - Not Applicable
6B35 **New Paint:** 0 - no new paint
Int Beam / Gird:
Fascias:
Splsh Zone Truss Gird:
Truss:
Bearings:
Other:

4B03 **Brdge Cap. Appraisal:** 5 - At/Above Legal Loads
6B19 **Controlling:** 5 - Eng. Judg.
4A09 **Struct Cond Appraisal:** 5

Structure Condition Appraisal Based on

The following Ratings:

1A04 **Superstructure Condition Ra** 5 - Fair-all primary strutural elements are soun
1A02 **Substructure Condition Rating:** 6 - Satisfactory-structural elements show mino
1A03 **Culvert Rating:** N - Not applicable

Load Ratings

4B15 **Load Rating Review Recommended:** Recalc not required
Due To:
IR03 **Calculation Date:** August 13, 2014
IR02 **Rating Approval Date:** August 15, 2014

Load Rating Details

LOAD TYPE	IR10 IR LOAD	IR11 OR LOAD	IR05 NBI IND	IR06 RTNG ANAL METH	IR07 CONT MEM TYPE	IR16 ANALYSIS ENGINEER	IR14 AASHTO MANUAL YEAR	IR15 AASHTO SPEC YEAR	IR13 OPR GOV CRITERIA	IR12 INV GOV CRITERIA
1	28	47	1	7	1	Mackin Engineering	-1	1996	M	M
Notes Description: Engineering judgment procedure in Pub 238 Appendix IP-03B used for concrete bridges without plans.										
2	51	86	0	7	1	Mackin Engineering	-1	1996	M	M
Notes Description: Engineering judgment procedure in Pub 238 Appendix IP-03B used for concrete bridges without plans.										
8	36	60	0	7	1	Mackin Engineering	-1	1996	M	M
Notes Description: Engineering judgment procedure in Pub 238 Appendix IP-03B used for concrete bridges without plans.										
0	44	74	0	7	1	Mackin Engineering	-1	1996	M	M
Notes Description: Engineering judgment procedure in Pub 238 Appendix IP-03B used for concrete bridges without plans.										

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

MAINTENANCE NEEDS DATA

Form M

5A01 **SR ID:** 06722209600002 **5A03** **BR Key:** 5394 **7A01** **Inspection Date:** July 18, 2016

IM01 Type of Work	IM03 Action	IM04 Est Qty	UOM	IM05 Priority	IM06 Date Rec	IM08 Target Year	IM11 Ass. WK
Flexible	42 - A744603-RPR/RPL.CONC.BEAM	6	EA	3	07/17/2002	0	No

IM07 **Status:** 0 - Work not planned **IM15** **Notes:** Repair spalling beams

IM09 **Location** 1

Flexible	6 - D744303-RPR.CONC.DECK	2	SY	3	07/17/2002	0	No

IM07 **Status:** 0 - Work not planned **IM15** **Notes:** Repair shallow spalls

IM09 **Location** 1

Flexible	12 - ECREMDP-REMOVE DEPOSITS	42	CY	3	07/26/2010	0	No

IM07 **Status:** 0 - Work not planned **IM15** **Notes:** Remove deposit along the near abutment and along the upstream and downstream near banks. (50' x 15' x 1.5' high)

IM09 **Location** UP UN DN

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

INSPECTION ADMINISTRATION

Form P

5A01 **SR ID:** 06722209600002 5A03 **BR Key:** 5394 7A01 **Inspection Date:** July 18, 2016

Current Inspection

7A03 **Primary Type:** R - Regular (routine)

7A06 **Types of Inspections Performed:**

NBI	Underwater	Element	Fracture Critical	Other Special
Yes	No	No	No	No

Inspection Man Hours

6B26	**NBI Crew:**	16.00	6B30	**Underwater:**	0.00
6B28	**Fracture Critical:**	0.00	6B29	**Other 1:**	-1.00
6B27	**Crane:**	0.00	6B31	**Other 2:**	-1.00

Inspection Costs (Entered to nearest dollar)

6B32	**Engineering:**	1,945	6B33	**Rigging:**	-1
			6B34	**Office:**	-1

Special Equip Used:

6B12 **Temperature:** 80.0 6B09 **Weather:** 1 - Clear

6B03 **Inventory Review Recommended:** No

Change Notes:

Inspection Team

7A05 **Inspected By:** 8 - Consulting Firm

7A02 **Team Leader:** Mackin Engineering C Stock

6B23 **Team Member:** Jamie Hess

6B24 **Hired By:** 1

6B25 **Insp Contract Num:** E02829

2A02 **Inspection Notes:** 7/18/16 SCBI raised from 3 to 5. Previous rating of 3 based on streambed material only and does not represent the actual conditions at bridge. Channel is very narrow (approx 6' wide max) with only minor flow through structure. Structure appears to have withstood high water events of the past with little to no effect. The streambed material was changed from A4 to A5 which changed the overall IN03 observed scour rating to a 6 and a SCBI of 5 after the scour calculator was reran.

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.

pennsylvania
DEPARTMENT OF TRANSPORTATION

INSPECTION ADMINISTRATION

Form P

5A01 **SR ID:** 06722209600002 5A03 **BR Key:** 5394 7A01 **Inspection Date:** July 18, 2016

Next Inspection

7A14 **Next Inspection By:** 8 - Consulting Firm

6B20 **Next Insp Type:** R - Regular (routine)

Schedule

Insp Types	7A07 Required	7A09 Frequency	7A10 Next Date
NBI	----	24	July 18, 2018
Fractical Critical	No	-1	January 01, 1901
Underwater	No	-1	January 01, 1901
Other Special	No	-1	January 01, 1901
Element	----	-1	January 01, 1901
Crane	----		6B18 January 01, 1901

6B01 **Special InspType:** (blank)

Estimated Inspection Man Hours

7A12	NBI Crew:	0.00	7A17	Underwater:	0.00
7A15	Fracture Critical:	0.00	7A16	Other 1:	0.00
7A13	Crane:	0.00	7A18	Other 2:	0.00

This document includes structure safety inspection information that is confidential pursuant to 65 P.S. §66.1 et seq., 75 Pa. C.S. §3754 and 23 U.S.C. §409 and may not be disclosed or used in litigation.