

Routine Inspection Report

Date: 6/20/2017

Br No 747 **WARD CREEK**

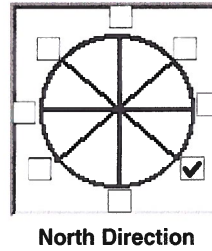
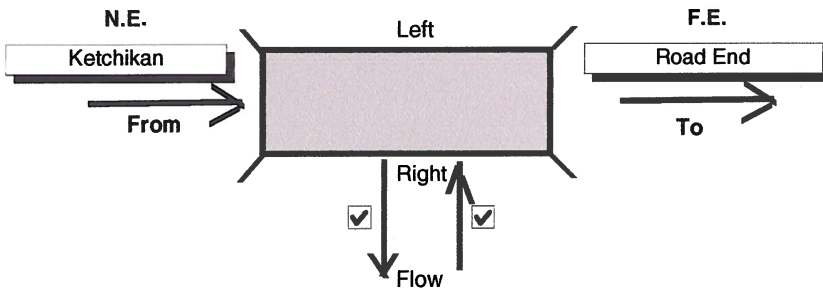
Fair 57 F

INSPECTOR: Sara Manning

ASSISTANT: Mary McRae

Initials **SEM**

Initials



Apprh Rdwy Width (ft)	32.00
Est Camber (inch)	1.00
Bridge Length (ft)	195.00
Bridge Width O-O (ft)	35.80
CDS Route	291500
CDS Mile	4.6

Left							
Type	BRIDGE RAIL	Ht (in)	Curb Height (in)	Transition Type	Ht (in)	Approach Type/Post	Leading End Treat
	2 Tube Top Mount w / Curb	32.00	6.00	Thrie - Beam	32.00	W - Beam	ET-2000
Right							
Type	BRIDGE RAIL	Ht (in)	Curb Height (in)	Transition Type	Ht (in)	Approach Type/Post	Leading End Treat
	2 Tube Top Mount w / Curb	32.00	6.00	Thrie - Beam	30.00	W - Beam	BCT

Near End		SIGNS		Far End	
Lt.	Rt.	Load Limit Wording or Other Sign		Lt.	Rt.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>			Object Markers	Object Markers
<input type="checkbox"/>	<input type="checkbox"/>			Restricted Width	Restricted Width
<input type="checkbox"/>	<input type="checkbox"/>			Vertical Clear	Vertical Clear
<input type="checkbox"/>	<input type="checkbox"/>			Load Limit	Load Limit
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Name Place	Name Place	<input type="checkbox"/>	<input type="checkbox"/>
		Load Limit Wording or Other Sign			

Deck Material	Thk(Inches)
Concrete	5.00
Location Measured	
Edge of Deck	

Wear Surface	Thk (Inches)
Asphalt	2.25
Wear Location	
Curb Face	

Drive Condition

Good

Locality

Ketchikan

Route

NORTH TONGASS HWY

Utilities

Kind	Size	Location	Owner
None			

Bridge No. 0747, WARD CREEK

Work Candidates

Inspected on: 06/20/2017

<i>Priority</i>	<i>Description</i>	<i>Quantity</i>	<i>Work Needed</i>
High	Bridge Rail-Repair (LF)	8	Replace DS spalled grout pads.
High	Approach Railing-Repair (EA)	8	Replace NELT rail post. Replace NERT twisted spacers. Replace NERT damaged W-beam (about 25ft).
High	Superstructure-Rehab (EA)	7	Rehab or replace FE abutment cap.
Medium	Misc-Install Sign (EA)	3	Install FE object markers. Replace NERT object marker.
Medium	Misc-Remove Vegetation	1	Remove brush from all four corners of the bridge.

Bridge No. 0747, WARD CREEK

Element Inspection

Inspected on: 06/20/2017

<i>Element</i>	<i>Description</i>	<i>Observations</i>
16	Reinforced Concrete Top Flange	Asphalt cracks, patches, and potholes at bridge ends. Soffit: Minor cracks, efflorescence, and rust staining typical. Span 3 FELT Girder 2 hairline crack with efflorescence. Span 3 FERT Girder 5 hairline cracks up to 7ft from backwall. Span 1 NERT Girder 1 delamination of soffit at 1st post from NERT.
> 510	Wearing Surfaces	-
> 1010	Cracking	-
> 1120	Efflorescence/Rust Staining	-
109	Prestressed Concrete Open Girder/Beam	Span 3 G2 LT hairline crack with efflorescence at web-flange interface. Span 3 G5 LT and G6 LT holddown bolts no longer effective. Span 3 G4 FERT bottom flange cracked from backwall out 12 inches, 3 inches from bottom. Crack turns into a 8 inch x 4.5 inch x up to 3/4 inch spall.
215	Reinforced Concrete Abutment	NE abutment: Water, dirt, and moss cover cap. NERT backwall patch delaminated and cracked. FE abutment: Bay 4 gap is 3/8 inch at top and 1.75 inch at bottom. Material spilling through. Bay 1 gap is 1 1/2 inch wide. Material spilling through. Up to 1/4 inch crack in Bay 5 backwall. FE cap: Cap is uneven at LT edge of Girder 5. Up to 1/8 inch full depth crack under Girder 4. Up to 1/2 inch full depth crack in Bay 4. (Increased from 3/8 inch in 2015) Up to 1/2 inch full depth crack under Girder 5 with 6 inch diameter spall. (Increased from 3/8 inch in 2015) Diagonal cracks and spalls from Bay 4 to Girder 6. Bay 5 has 2 horizontal round rebar exposed with surface rust and one severed stirrup about 11 inches from the RT edge of Girder 5. Up to 7/8 inch crack where marked with a 6 inch gap at the groundline. No rebar was observed at the cap bottom.
225	Steel Pile	Marine growth from mudline up about 12ft. Rust staining seeping through marine growth. Exposed steel has surface rust.
> 515	Steel Protective Coating	-
231	Steel Pier Cap	Coating loss and surface rust at cap ends and P2 NE face.

Printed on: 22-Aug-17, Bridge No. 0747, WARD CREEK

Bridge No. 0747, WARD CREEK

> 515	<i>Steel Protective Coating</i>	
310	Elastomeric Bearing	None.
330	Metal Bridge Railing	Eight DS rail post grout pads spalled or cracked. 75% paint loss on rail with 5% surface rust.
> 515	<i>Steel Protective Coating</i>	
600	Signs Smart Flag	NERT object marker damaged. No FE object markers.
602	Approach Rail Smart Flag	5th post from NELT tension side flange torn and three others nicked. NERT 2 steel spacers twisted and two w-beam sections damaged.
604	Bank Protection Smart Flag	Bank sloughing at NE and FE.

Br No 747

WARD CREEK

Date: 6/20/2017

ID

12 Odd 2017 747

INSPECTOR: Sara Manning

ASSISTANT: Mary McRae

Weather
FairTemperature
57 F

HYDRAULICS REPORT

Inspection To Mudline At All Piers and Abuts?

Yes

Apparent HW

No

AHW Comments

Stream
Bottom
Material

Bank Erosion

No

Erosion Comments

Undercutting and bank sloughing within
15 ft of NE and FE Abutments.

Cobble

Gravel

Activities

None

Drift Comments

Sand

Drift

None

Riprap Condition

Inadequate

Other Hydraulic
Comments

Tidal

Soundings taken were not accurate in Span 2 and Span
3 due to windy conditions.

SOUNDINGS

Measured At Surface

Top Rail

Location

Upstream

Soundings
Report

All measurements in feet

12 Odd 2017 747

Horiz Dist from NE	Substr Unit No.	Vert Dist to Water Surface	Vert Dist to Stream Bottom	Remarks
0.00	1	0.0	3.6	Begin Bridge
12.50	1	0.0	11.0	
26.10	1	0.0	21.9	
41.00	1	0.0	29.2	
51.30	1	0.0	33.9	EOW
62.30	1	0.0	37.0	Pier 2
81.10	1	0.0	47.0	
124.30	1	0.0	37.7	Pier 3
138.40	1	0.0	38.0	
155.40	1	0.0	24.2	
166.80	1	0.0	15.8	
175.10	1	0.0	10.0	
186.00	1	0.0	4.5	End Bridge

Structure Inventory and Appraisal Sheet (English Units)

Bridge Key: 0747	Agency ID: 0747	SR: 19.0	SD/FO: SD
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IDENTIFICATION			
State 1:	02 Alaska	Struc Number 8:	0747
Facility Carried 7:	NORTH TONGASS HWY	Location 9:	MILE PO NT 4 6
Rte.(On/Under)5A:	Route On Structure	Rte Signing Prefix 5B:	3 State Hwy
Level of Service 5C:	1 Mainline	Rte Number 5D:	00920
Directional Suffix 5E:	0 N/A (NBI)	% Responsibility:	
SHD District 2:	03 Southcoast	County Code 3:	Ketchikan Gateway Boro
Place Code 4:	North Tongass Highway	Mile Post 11:	4.619 mi
Feature Intersected 6:	WARD CREEK		
Latitude 16:	55d 24' 27.0 "	Longitude 17:	131d 43' 5.0 "
Border Bridge Code 98:	Unknown (P)		
Border Bndge No. 99:	NA		

INSPECTION			
Frequency 91:	24 months	Inspection Date 90:	06/20/2017
Next Inspection:		06/20/2019	
FC Freq. 92A:	NA	FC Insp. Date 93A:	NA
Next FC Inspection:	NA		
UW Freq. 92B:	NA	UW Insp. Date 93B:	NA
Next UW Inspection:	NA		
SI Freq. 92C:	NA	SI Date 93C:	NA
Next SI:	NA		

CLASSIFICATION			
Defense Highway 100:	0 Not a STRAHNET hwy	Parallel Structure 101:	No bridge exists
Traffic Direction 102:	2 2-way traffic	Temporary Structure 103:	Unknown (NBI)
Highway System 104:	0 Not on NHS	NBIS Length:	Long Enough
Toll Facility 20:	3 On free road	Functional Class 26:	16
Natl. Network 110:	0 Not on truck network	Historical Sig 37:	5 Not eligible for NRHP
Owner 22:	01 State Highway Agency		
Custodian 21:	01 State Highway Agency		

STRUCTURE TYPE AND MATERIALS			
Number of Approach Spans 46:	0	Number of Spans Main Unit 45:	3
Main Span 43A/B:			
5 Prestressed concrete		4 Tee Beam	
Appr Span 44A/B:			
0 Other		00 Other	
Deck Type 107:		9 Other	
Wearing Surface 108A:		6 Bituminous	
Membrane 108B:		2 Preformed Fabric	
Deck Protection 108C:		0 None	

CONDITION			
Deck 58:	7 Good	Super 59:	6 Satisfactory
Sub 60:		3 Serious	
Channel/Ch. Protection 61:		8 Protected	
Culvert 62:		N N/A (NBI)	

LOAD RATING AND POSTING			
Inventory Method 65:	1 LF Load Factor	Operating Method 63:	1 LF Load Factor
Inventory Rating 66:	HS 8.1	Operating Rating 64:	HS 17.2
Design Load 31:	5 MS 18 (HS 20)	Posting 70:	5 A/Above legal loads
Posting Status 41:	A Open, no restriction		

AGE AND SERVICE			
Year Built 27:	1975	Year Reconstructed 106:	Unknown
Type of Service on 42A:	1 Highway		
Type of Service under 42B:	5 Waterway		
Lanes on 28A:	2	Lanes under 28B:	0
Detour Length 19:	123.7 mi		
ADT 29:	5 423	Truck ADT 109:	3%
Year of ADT 30:	2015		

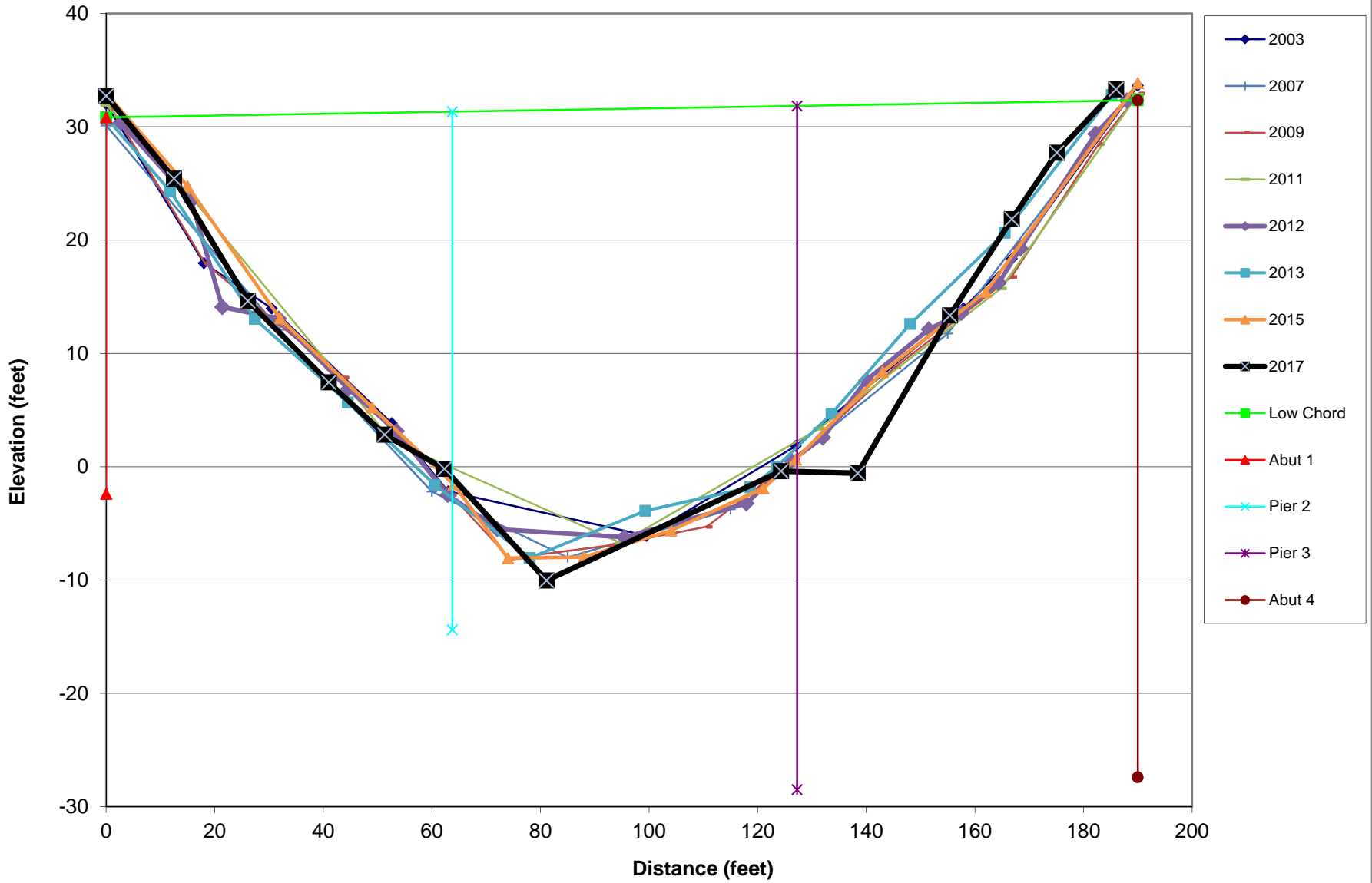
APPRAISAL			
Bridge Rail 36A:	1 Meets Standards	Approach Rail 36C:	1 Meets Standards
Transition 36B:	1 Meets Standards	Approach Rail Ends 36D:	0 Substandard
Str Evaluation 67:	3 Intolerable - Correct	Deck Geometry 68:	4 Min To erable
Underclearance, Vertical and Horizontal 69:		N Not applicable (NBI)	
Waterway Adequacy 71:	9	Approach Alignment 72:	6 Equal Min Cntena
Scour Critical 113:	T Tidal, Low Risk		

GEOMETRIC DATA			
Length Max Span 48:	63.0 ft	Structure Length 49:	194.9 ft
Curb/Sdwk Width L 50A:	0.0 ft	Curb/Sidewalk Width R 50B:	0.0 ft
Width Curb to Curb 51:	34.8 ft	Width Out to Out 52:	35.8 ft
Approach Roadway Width 32:	40 0 ft	Median 33:	0 No median
(w/ shoulders)			
Deck Area:	6,964.3 sq ft		
Skew 34:	0	Structure Flared 35:	0 No flare
Vertical Clearance 10:	99 99 ft	Horizontal Clearance 47:	33.79 ft
Minimum Vertical Clearance Over Bridge 53:	100.0 ft		
Minimum Vertical Underclearance 54A:	N Feature not hwy or RR		
Minimum Vertical Underclearance 54B:	0.0 ft		
Minimum Lateral Underclearance 55A:	N Feature not hwy or RR		
Minimum Lateral Underclearance R 55A:	99.9 ft		
Minimum Lateral Underclearance L 56:	0.0 ft		

PROPOSED IMPROVEMENTS			
Bridge Cost 94:	\$0	Type of Work 75:	Unknown (P)
Roadway Cost 95:	\$0	Length of Improvement 76:	0.0 ft
Total Cost 96:	\$0	Future ADT 114:	7,000
Year of Cost Estimate 97:	Unknown	Year of Future ADT 115:	2035

NAVIGATION DATA			
Navigation Control 38:	1 Permit required		
Vertical Clearance 39:	17.0 ft	Horizontal Clearance 40:	40.0 ft
Pier Protection 111:	1 Not required	Lift Bridge Vertical Clearance 116:	0.0 ft

BN 747 Ward Creek Soundings





Bridge No. **0747** Br. Name **Ward Creek** Date **06/20/17**
 Inspector **Manning / McRae** Frame **1**
Ahead at bridge



Bridge No. **0747** Br. Name **Ward Creek** Date **06/20/17**
 Inspector **Manning / McRae** Frame **2**
Back at bridge



Bridge No. **0747** Br. Name **Ward Creek** Date **06/20/17**
 Inspector **Manning / McRae** Frame **3**
Looking RT



Bridge No. **0747** Br. Name **Ward Creek** Date **06/20/17**
 Inspector **Manning / McRae** Frame **4**
Looking LT



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	5	
LT elevation (FE LT looking NE)					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	6	
Wearing surface condition in wheel lines, typical					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	7	
NE abutment					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	8	
FE abutment					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	9	
NE Bent 2					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	10	
FE Bent 3					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	11	
Typical backwall (NE shown)					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	12	
Typical bay (FE shown)					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	13	
NE RT end treatment buried in hill					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	14	
NE joint, potholes in RT lane					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	15	
FE joint, potholes in LT lane					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	16	
FE LT transition rail damage					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	17	
Damage to cap and backwall at FE RT bay					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	18	
FE abutment, RT bay, close up of cap damage, exposed rebar					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	19	
FE abutment, RT bay, backwall					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	20	
FE abutment, RT bay, terminus of backwall crack behind girder bottom flange					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	21	
FE abutment, 2nd bay from RT					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	22	
FE abutment, 2nd bay from RT, backwall					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	23	
FE abutment, 2nd bay from RT, G4 RT side crack in bottom flange					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	24	
FE abutment, 2nd bay from RT, G4 RT side crack in bottom flange					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	25	
FE abutment, 2nd bay from RT, spall in backwall					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	26	
Fill coming through backwall typical (FE abutment, LT bay shown)					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	27	
FE, 4th bay from RT, spall in bottom of deck at backwall					



Bridge No.	0747	Br. Name	Ward Creek	Date	06/20/17
Inspector	Manning / McRae		Frame	28	
FE, 4th bay from RT, spall in bottom of deck at backwall					



Bridge No. 0747 Br. Name Ward Creek Date 06/20/17
 Inspector Manning / McRae Frame 29
FE LT wingwall spall with exposed rebar



Bridge No. 0747 Br. Name Ward Creek Date 06/20/17
 Inspector Manning / McRae Frame 30
FE RT spall in hider wall



Bridge No. 0747 Br. Name Ward Creek Date 06/20/17
 Inspector Manning / McRae Frame 31
NE RT girder anchor showing rust and section loss



Bridge No. 0747 Br. Name Ward Creek Date 06/20/17
 Inspector Manning / McRae Frame 32
NE RT corner, spalls in backwall



Bridge No. **0747** Br. Name **Ward Creek** Date **06/20/17**
 Inspector **Manning / McRae** Frame **33**
NE RT corner, spall in soffit



Bridge No. **0747** Br. Name **Ward Creek** Date **06/20/17**
 Inspector **Manning / McRae** Frame **34**
NE RT lane, pothole at joint



Bridge No. **0747** Br. Name **Ward Creek** Date **06/20/17**
 Inspector **Manning / McRae** Frame **35**
Damaged grout pads, typical of span 2 LT



Bridge No. **0747** Br. Name **Ward Creek** Date **06/20/17**
 Inspector **Manning / McRae** Frame **36**
FE LT lane, pothole at joint