

Routine Inspection Report

Date: 7/14/2017

Br No 574

GULKANA RIVER

Fair

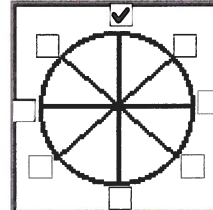
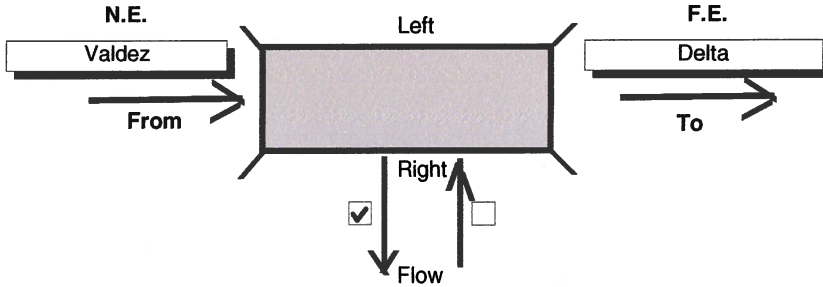
65 F

INSPECTOR: Nick Murray

ASSISTANT: Michael Knapp

Initials NWM

Initials MUK



Apprh Rdwy Width (ft)	31.00
Est Camber (inch)	0.00
Bridge Length (ft)	405.00
Bridge Width O-O (ft)	35.00
CDS Route	190000
CDS Mile	131.9

Left							
Type	BRIDGE RAIL	Ht (in)	Curb Height (in)	Transition Type	Ht (in)	Approach Type/Post	Leading End Treat
2 or 3 Tube Side Mount		30.00	0.00	W - Beam	27.00	W-Beam/Steel	BCT
Right							
Type	BRIDGE RAIL	Ht (in)	Curb Height (in)	Transition Type	Ht (in)	Approach Type/Post	Leading End Treat
2 or 3 Tube Side Mount		30.00	0.00	W - Beam	27.00	W-Beam/Steel	BCT

Near End		SIGNS		Far End	
Lt.	Rt.	Load Limit Wording or Other Sign		Lt.	Rt.
<input type="checkbox"/>	<input type="checkbox"/>	No Shooting From Roadway No Fishing From Bridge		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>

Deck Material	Thk(Inches)
Concrete	10.50
Location Measured	
Edge of Deck	

Wear Surface	Thk (Inches)
Same	
Wear Location	

Drive Condition	Good
Locality	Glennallen
Route	RICHARDSON HWY

Utilities

Kind	Size	Location	Owner
Electrical	4" RMC	downstream exterior bay attached to diaphragm	Unknown

Bridge No. 0574, GULKANA RIVER

Work Candidates

Inspected on: 07/14/2017

<i>Priority</i>	<i>Description</i>	<i>Quantity</i>	<i>Work Needed</i>
High	Approach Railing-Repair	1355	Replace missing bolts on FE US and FE DS transitions.
High	Bridge Rail-Repair (LF)	7	Install missing nuts on rail post connections to deck - approximately 10 places.
Medium	Channel-Remove Debris (EA)	1	Periodically remove drift and debris from piers to prevent scour.
Low	Substructure-Patch spalls (LF)	3	Chip to sound concrete, clean and coat exposed reinforcing steel and patch spalled area in hider wall FE DS side. Place fill under abutment FE.
Low	Misc-Install Sign (EA)	1	Install name place sign NE DS side.

Bridge No. 0574, GULKANA RIVER

Element Inspection

Inspected on: 07/14/2017

<i>Element</i>	<i>Description</i>	<i>Observations</i>
12	Reinforced Concrete Deck	Most delaminations are near highway centerline and around previously patched areas especially at the FE of the bridge. About 25% delams in the SB and minimal delams in the NB lane. Deck cracking is prevalent and many patches are cracked. About 15 spalls have been filled with asphalt. Minor amount of transverse cracking with efflorescence in soffit overhangs.
> 1120	<i>Efflorescence/Rust Staining</i>	
> 1130	<i>Cracking (RC and Other)</i>	
107	Steel Open Girder/Beam	Minor rust freckles on girders, cross frames, and lateral bracing with combined area less than 1% of total painted area. Second and sixth transverse stiffeners from the NE on the US girder are bent. Swallows nests on the lateral bracing connection plates.
> 515	<i>Steel Protective Coating</i>	
210	Reinforced Concrete Pier Wall	Vertical cracks on both faces of both piers. Crack width of about 1/16 inch for the full height of the pier at about centerline. Some locations behind steel nosing armor sound hollow as if it is not in direct contact with concrete. Pier 3 has a tight horizontal crack about 6 feet above the waterline.
215	Reinforced Concrete Abutment	Some honeycombed section in NE backwall but concrete is sound. FE backwall has 1/16 inch vertical cracks at four locations. Two piles are exposed under the FE abutment. Near the centerline of the bridge, the edge of the pile is within about 1 inch of the front face of the concrete pile cap beam. Backwalls have vertical cracks FE DS hider wall has 8 inch x 3 inch spall with exposed reinforcing that is rusting. Dirt on caps
304	Open Expansion Joint	At both abutments, one side of the finger joints is about 1/4 inch higher than the other. No apparent problems appear to have resulted in this height differential. Spall in the FE DS end of the expansion joint concrete.
311	Movable Bearing	Expansion bearings at abutments are damaged but functional. Paint system has failed and the PTFE laminations are delaminated and damaged. Bearings appear to be functional and are in a fully expanded position at this and other recent inspections.
> 515	<i>Steel Protective Coating</i>	
313	Fixed Bearing	None.
> 515	<i>Steel Protective Coating</i>	

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330	Metal Bridge Railing	Loose lower rail to post bolt FE DS Post #11 NE DS Post #2 missing both lower compression bolts post to deck. Post #1 missing 1. First 3 posts on NE DS are leaning towards NE. Broken post to PL welds and damaged rail (NE at about 213 feet to 236 feet)
> 515	<i>Steel Protective Coating</i>	
600	Signs Smart Flag	NE name place sign is missing.
602	Approach Rail Smart Flag	The bolts connecting the vertical angle to the Thrie beam in the FE US transition are missing. Three nuts are missing on the FE DS transition rail posts. FE DS thrie-beam transition is damaged. All approach rails have minor damage.

Br No 574

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Date: 7/14/2017

ID

01 Odd 2017 574

INSPECTOR: Nick Murray

ASSISTANT: Michael Knapp

Weather
Fair

Temperature
65 F

HYDRAULICS REPORT

Inspection To Mudline At All Piers and Abuts?

Apparent HW

Stream
Bottom
Material

Pier/Abut Not Inspected. Why

AHW Comments

Current or Visibility

Bank Erosion

Activities

Erosion Comments

Drift

Drift Comments

Riprap Condition

Other Hydraulic Comments

SOUNDINGS

Measured At Surface

Location

Soundings Report

All measurements in feet

01 Odd 2017 574

Horiz Dist from NE	Substr Unit No.	Vert Dist to Water Surface	Vert Dist to Stream Bottom	Remarks
4.10	1	0.0	10.1	NE face of backwall, river-right
17.80	1	0.0	16.4	
28.00	1	0.0	20.6	
40.90	1	0.0	24.8	
46.60	1	0.0	27.9	
55.30	1	0.0	28.5	
65.50	1	0.0	31.1	
83.40	1	0.0	32.5	
97.60	1	0.0	32.9	
112.50	1	0.0	33.3	
115.70	1	0.0	33.4	EOW
122.40	1	0.0	34.2	Pier 2
133.40	1	0.0	34.2	
143.70	1	0.0	34.9	
160.30	1	0.0	38.0	
178.20	1	0.0	37.3	
195.60	1	0.0	37.1	
214.80	1	0.0	38.3	
233.70	1	0.0	36.7	
252.80	1	0.0	37.0	
272.10	1	0.0	36.4	
281.90	1	0.0	35.8	Pier 3
300.60	1	0.0	35.4	
320.00	1	0.0	34.7	
339.20	1	0.0	34.7	
357.10	1	0.0	33.6	EOW
367.80	1	0.0	24.4	
376.20	1	0.0	21.9	
387.50	1	0.0	18.7	
400.00	1	0.0	12.6	

Abbreviations: FE=Far End, NE=Near End, DS= Downstream, US=Upstream, LT=Left, RT=Right, P=Pier, FB=Floorbeam, G=Girder, S=Span

Structure Inventory and Appraisal Sheet (English Units)

Bridge Key: 0574

Agency ID: 0574

SR: 78.7

SD/FO: SD

IDENTIFICATION

State 1: 02 Alaska Struc Number 8: 0574
 Facility Carried 7: RICHARDSON HIGHWAY Location 9: MILE POINT 129.8
 Rte.(On/Under)5A: Route On Structure Rte Signing Prefix 5B: 3 State Hwy
 Level of Service 5C: 1 Mainline Rte. Number 5D: 00071
 Directional Suffix 5E: 0 N/A (NBI) % Responsibility:
 SHD District 2: 05 North., S. Central County Code 3: Valdez-Cordova
 Place Code 4: Gulkana Mile Post 11: 129.785 mi
 Feature Intersected 6: GULKANA RIVER
 Latitude 16: 62d 16' 11.0 " Longitude 17: 145d 23' 5.0 "
 Border Bridge Code 98: Unknown (P)
 Border Bridge No. 99: NA

INSPECTION

Frequency 91: 24 months Inspection Date 90: 07/14/2017 Next Inspection: 07/14/2019
 FC Freq. 92A: NA FC Insp. Date 93A: NA Next FC Inspection: NA
 UW Freq. 92B: 60 months UW Insp. Date 93B: 07/21/2015 Next UW Inspection: 07/21/2020
 SI Freq. 92C: NA SI Date 93C: NA Next SI: NA

CLASSIFICATION

Defense Highway 100: 1 STRAHNET hwy Parallel Structure 101: No || bridge exists
 Traffic Direction 102: 2 2-way traffic Temporary Structure 103: Unknown (NBI)
 Highway System 104: 1 On the NHS NBIS Length 112: Long Enough
 Toll Facility 20: 3 On free road Functional Class 26: 01 Rural Interstate
 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: 2 Number of Spans Main Unit 45: 1
 Main Span 43A/B:
 4 Steel, continuous 2 Stringer/Girder
 Appr Span 44A/B:
 0 Other 00 Other
 Deck Type 107: 1 Concrete Cast-in-Place
 Wearing Surface 108A: 1 Monolithic Concrete
 Membrane 108B: 0 None
 Deck Protection 108C: 0 None

CONDITION

Deck 58: 4 Poor Super 59: 6 Satisfactory Sub 60: 7 Good
 Channel/Ch. Protection 61: 7 Minor repairs needed 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 22 Operating Rating 64: HS 48
 Design Load 31: 5 MS 18 (HS 20) Posting 70: 5 At/Above legal loads
 Posting Status 41: A Open, no restriction

AGE AND SERVICE

Year Built 27: 1974 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: 124 mi
 ADT 29: 959 Truck ADT 109: 27% Year of ADT 30: 2015

APPRAISAL

Bridge Rail 36A: 0 Substandard Approach Rail 36C: 1 Meets Standards
 Transition 36B: 0 Substandard Approach Rail Ends 36D: 0 Substandard
 Str Evaluation 67: 6 Equal Min Criteria Deck Geometry 68: 6 Equal Min Criteria
 Underclearance, Vertical and Horizontal 69: N Not applicable (NBI)
 Waterway Adequacy 71: 8 Equal Desirable Approach Alignment 72: 8 Equal Desirable Crit
 Scour Critical 113: 7

GEOMETRIC DATA

Length Max Span 48: 160 ft Structure Length 49: 405 ft
 Curb/Sdwk Width L 50A: 0.0 ft Curb/Sidewalk Width R 50B: 0.0 ft
 Width Curb to Curb 51: 34.1 ft Width Out to Out 52: 35.0 ft
 Approach Roadway Width 32: 31 ft Median 33: 0 No median
 (w/ shoulders)
 Deck Area: 14,175.0 sq ft
 Skew 34: 30 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

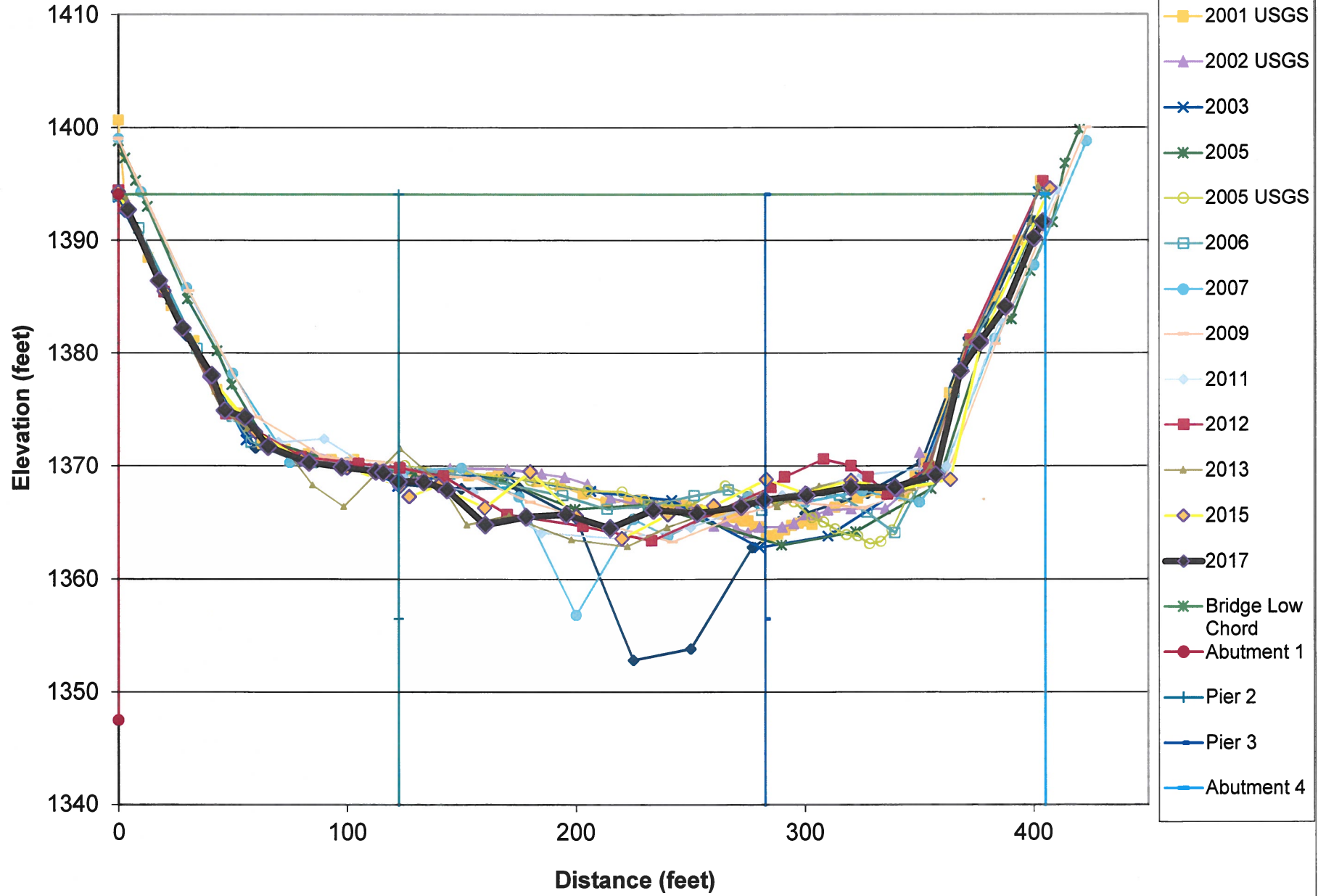
PROPOSED IMPROVEMENTS

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: 1,200
 Year of Cost Estimate 97: Unknown Year of Future ADT 115: 2035

NAVIGATION DATA

Navigation Control 38: 0 Permit Not Required
 Vertical Clearance 39: 0.0 ft Horizontal Clearance 40: 0.0 ft
 Pier Protection 111: 1 Not required Lift Bridge Vertical Clearance 116: 0.0 ft

BN574 Gulkana River Soundings





Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **1**
Ahead at bridge



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **2**
Back at bridge



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **3**
Looking US



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **4**
Looking DS



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **5**
Looking US NE



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **6**
Looking DS NE



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **7**
Looking DS FE



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **8**
Looking US FE



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **9**
Hydrologic monitoring on bridge



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **10**
Deck cracks, typ.



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **11**
NE joint



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **12**
FE joint



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **13**
Deck cold joint



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **14**
NE DS rail posts tilted



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **15**
NE DS railing missing bolts



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **16**
US NE dike



Bridge No.	0574	Br. Name	Gulkana River	Date	07/14/17
Inspector	Murray / Knapp		Frame	17	
NE Surface drainage causing rill					



Bridge No.	0574	Br. Name	Gulkana River	Date	07/14/17
Inspector	Murray / Knapp		Frame	18	
NE abutment					



Bridge No.	0574	Br. Name	Gulkana River	Date	07/14/17
Inspector	Murray / Knapp		Frame	19	
NE bearing, typ.					



Bridge No.	0574	Br. Name	Gulkana River	Date	07/14/17
Inspector	Murray / Knapp		Frame	20	
NE Pier 2 underside view					



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **21**
NE US Pier 2



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **22**
FE Pier 2



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **23**
Probing pier 3



Bridge No. **0574** Br. Name **Gulkana River** Date **07/14/17**
 Inspector **Murray / Knapp** Frame **24**
Pier 3



Bridge No.	0574	Br. Name	Gulkana River	Date	07/14/17
Inspector	Murray / Knapp		Frame	25	
FE abutment with exposed piles					



Bridge No.	0574	Br. Name	Gulkana River	Date	07/14/17
Inspector	Murray / Knapp		Frame	26	
FE bearing, typ.					



Bridge No.	0574	Br. Name	Gulkana River	Date	07/14/17
Inspector	Murray / Knapp		Frame	27	
FE rail extends far from bridge					



Bridge No.	0574	Br. Name	Gulkana River	Date	07/14/17
Inspector	Murray / Knapp		Frame	28	
FE riprap slope					