

## **APPENDIX C**

### **Section 4(f)**

*(Note: Station numbers may differ slightly from those in the EA as a result of minor design changes that occurred to avoid sensitive resources.)*

## APPENDIX C

### Section 4(f) References

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**ADF&G Concurrence Memorandum on Haines Highway Improvements  
Impacts on Preserve and CHA, June 2014**

# MEMORANDUM

## State of Alaska

Department of Fish and Game  
Division of Habitat

TO: Mike Eberhardt  
Park Superintendent  
Department of Natural Resources  
Division of Parks and Outdoor Recreation

DATE: June 27, 2014

FILE NO:

SUBJECT: Haines Highway Realignment -  
Impacts on CBEP and CHA  
Fish and Wildlife Resources

FROM: Jackie Timothy   
Southeast Regional Supervisor

PHONE NO: (907) 465-4275

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On November 1, 2013, I sent you a memo<sup>1</sup> regarding the potential for the Alaska Department of Transportation and Public Facilities (ADOT&PF) Haines Highway upgrades from milepost 3.5 to 25.3 to impact fish and wildlife resources and habitats in the Chilkat Bald Eagle Preserve (CBEP) and Critical Habitat Area (CHA). In the memo, ADF&G concluded the Haines Highway project, as proposed in the July 2013 Environmental Assessment (EA),<sup>2</sup> would improve fish habitat in the CBEP once the highway and proposed mitigation projects were constructed, and would not impact bald eagles and the natural salmon spawning and rearing areas within the CHA. The department's position remains the same.

Since November, and in response to public and agency EA comments, ADOT&PF has adjusted the road alignment and proposed additional mitigation to further avoid and minimize impacts to fish and wildlife habitat, working closely with my staff. Please see the attached memorandum<sup>3</sup> from Kate Kanouse containing additional recommendations to be added to the proposed mitigation measures. We will further refine project details during the fish habitat permitting process.

An ADF&G recommendation in the November memo to minimize tree cutting adjacent to the CHA has not changed. A subsequent consultant's final report<sup>4</sup> from a fall 2013 study of perching bald eagles in the CBEP advises the proposed highway upgrades will not adversely affect the Chilkat Bald Eagle population, supporting the ADF&G's conclusion the project will not impact bald eagles in the CHA.

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<sup>1</sup> Jackie Timothy, Southeast Regional Supervisor, ADF&G Habitat Division, to Mike Eberhardt, Park Superintendent, ADNR Division of Parks and Outdoor Recreation. Memorandum: Haines Highway Realignment – Impacts on CBEP Fish and Wildlife Resources; dated November 1, 2013.

<sup>2</sup> Haines Highway Mileposts 3.5 to 25.3, Haines, Alaska. U.S. Department of Transportation Federal Highway Administration and State of Alaska Department of Transportation and Public Facilities, Southeast Region. 2013. Federal Project SHAK-096-6(28), AKSAS Projects 68606, Environmental Assessment and Section 4(f) Evaluation. [http://dot.alaska.gov/sereg/projects/haines\\_hwy/assets/D59119B.10.EA17.MET.070513.pdf](http://dot.alaska.gov/sereg/projects/haines_hwy/assets/D59119B.10.EA17.MET.070513.pdf) (Accessed June 26, 2014).

<sup>3</sup> Kate Kanouse, Habitat Biologist, ADF&G Habitat Division, to Jackie Timothy, Southeast Regional Supervisor, ADF&G Habitat Division. Memorandum: May 2014 MP 3.5–25.3 Haines Highway Stream Investigations; dated June 27, 2014.

<sup>4</sup> Ritchie, R. J., J. Shook, and S. E. Andersen. 2014. An assessment of perch use and possible impacts of proposed Haines highway realignments on bald eagles during fall and winter, Chilkat River, Alaska, Final Report. Prepared for DOWL HKM, Anchorage, Alaska, by ABR, Inc. Environmental Research & Services, Fairbanks, Alaska.



ADOT&PF staff copied me with their letter to you dated April 28, 2014 and updated May 30, 2014<sup>5</sup> summarizing their analysis of the potential of the upgrades to adversely affect the features and attributes of the Preserve, a Section 4(f)<sup>6</sup> protected property. ADOT&PF concludes the project would not adversely affect the features and attributes of the CBEP, including the CHA.

ADF&G concurs with ADOT&PF's conclusion. The project proposal meets the purpose and need and does not adversely impact the resources and habitats for which ADF&G is responsible. Construction will not occur within the CHA, and unavoidable impacts to fish and wildlife resources and habitats in the CBEP will be mitigated. ADOT&PF will monitor all mitigation for success.

Email cc:

Al Ott, ADF&G Habitat, Fairbanks  
ADF&G Habitat Staff, Douglas  
Rich Chapell, ADF&G SF, Haines  
Randy Bachman, ADF&G CF, Haines  
Ryan Scott, ADF&G WC, Douglas  
Bob Trousil, ADOT&PF, Juneau  
Jane Gendron, ADOT&PF, Juneau  
Jim Scholl, ADOT&PF, Juneau  
Cindy Hartmann Moore, NMFS, Juneau  
Steve Brockmann, USFWS, Juneau  
Randy Vigil, USACE, Juneau

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<sup>5</sup> Letter from Jane Gendron, Southeast Region Environmental Manager, ADOT&PF Southeast Region, to Mike Eberhardt, Park Superintendent, ADNDR Division of Parks and Outdoor Recreation. Haines Highway MP 3.5 – 25.3. State/Federal Project No. 68606/SHAK-095-6(28), request for concurrence: no adverse effect, Alaska Chilkat Bald Eagle Preserve; dated April 28, 2014 with Table 3 updated on May 30, 2014.

<sup>6</sup> The Federal Highway Administration's regulations governing the use of land for Federal highway projects in parks, recreation areas, wildlife and waterfowl refuges, and historic sites, are codified at 23 CFR Part 774, but are commonly referred to as Section 4(f) because the requirements originated in that section of the Department of Transportation Act of 1966.

**ADF&G Concurrence Memorandum on Haines Highway Improvements  
Impacts MP 17 Land Exchange, February 2015**

# MEMORANDUM

# State of Alaska


Department of Fish and Game  
Division of Habitat

TO: Jane Gendron  
Southcoast Region Environmental Manager  
Dept. of Transportation & Public Facilities

DATE: February 18, 2015

THRU: Jackie Timothy  
Southeast Regional Supervisor

FILE NO: HH MP 3.5-25.3 (PID 68606)

FROM: Kate Kanouse   
Habitat Biologist

SUBJECT: MP 17 Land Exchange:  
ADOT&PF and ADNR

PHONE NO: (907) 465-4290

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The Alaska Department of Transportation and Public Facilities (ADOT&PF) proposes to acquire 2.98 acres of Chilkat Bald Eagle Preserve (CBEP) land in exchange for 6.16 acres of relinquished ADOT&PF right-of-way (ROW) to realign the Haines Highway (HH) (Appendix). Per your request, I compared fish and wildlife habitat values on those parcels, coordinating my review with area management biologists from the divisions of Sport Fish, Commercial Fisheries, and Wildlife Conservation.

On January 23, 2015, Sport Fish area management biologist Rich Chapell, habitat biologist Matt Kern, and I visited the properties near HH milepost 17. The proposed CBEP acquisition includes a

- 0.46 acre deciduous forest and shrub/scrub riparian area (Figure 1), and
- two upland mixed forest areas measuring 0.01 acre and 2.51 acres that are subject to rock slides (Figure 2).<sup>1</sup>

Stream No. 115-32-10250-2060-3012 provides habitat for Chinook, chum, coho, and pink salmon and lies within the 0.46 acre parcel.<sup>2</sup>



Figure 1.—Proposed 0.46 acre CBEP acquisition (facing southeast).



Figure 2.—Proposed 2.51 acre CBEP acquisition (facing northwest).

<sup>1</sup> Matthew Kern, Habitat Biologist, ADF&G Habitat Division, to Jackie Timothy, Southeast Regional Supervisor, ADF&G Habitat Division. Memorandum: Haines Highway MP17 Mitigation Site: Station 865+88 Trip Report; dated 1/16/14.

<sup>2</sup> The proposed HH realignment requires stream modifications on both sides of the highway.

The proposed ROW relinquishment includes a

- 3.6 acre upland mixed forest containing hillside drainages and the upper extents of Stream No. 115-32-10250-2060-3012 and tributary -4001, providing habitat for Chinook, chum, pink and coho salmon (Figure 3), and
- 2.56 acre deciduous forest riparian area containing about 150 m of 18 Mile Slough, Stream No. 115-32-10250-2060, providing habitat for Chinook, chum, and coho salmon (Figure 4). The riparian area is usually flooded during summer (Rich Chapell, Sport Fish Area Management Biologist, ADF&G, Haines, personal communication).

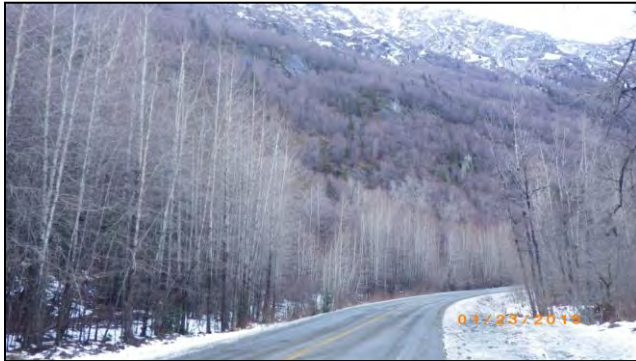


Figure 3.–Proposed 3.6 acres ROW relinquishment (facing east).



Figure 4.–Proposed 2.56 acres ROW relinquishment (facing west).

The fish and wildlife habitat values in the ROW relinquishment and CBEP acquisition parcels are similar. The exchange provides additional CBEP acreage and would allow highway realignment to minimize fill in Stream No. 115-32-10250-2060-3012 and 18 Mile Slough.

Email cc:

Al Ott, ADF&G Habitat, Fairbanks  
ADF&G Habitat Staff, Juneau  
Rich Chapell, ADF&G SF, Haines  
Randy Bachman, ADF&G CF, Haines  
Stephanie Sell, ADF&G WC, Juneau  
Mike Eberhardt, ADNR DPOR, Juneau  
Jim Scholl, ADOT&PF, Juneau  
Cindy Hartman Moore, NMFS, Juneau  
Steve Brockmann, USFWS, Juneau  
Randy Vigil, USACE, Juneau  
Linda Speerstra, USACE, Sitka

**DOT&PF Section 4(f) Concurrence Request to DNR DPOR, April 2014**

## Gendron, Jane D (DOT)

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**From:** Eberhardt, Michael W (DNR)  
**Sent:** Thursday, July 31, 2014 12:34 PM  
**To:** roguesalmon@aptalaska.net; Stephanie Scott; steve\_b\_lewis@fws.gov; Fxn2fly@hotmail.com; Bachman, Randall (DFG); Josephson, Roy M (DNR); Chapell, Richard S (DFG); Karen Hess; rutzebach@hotmail.com; Gellings, Jon D (DNR); joneshotchjr@hotmail.com; chilkatkwan3m@yahoo.com; Palmieri, Greg J (DNR); Palmieri, Anne Marie G (DEC); aguilardanita; gcampbell@haines.ak.us; Murphy, Kevin (DNR); lynncanalconservation@gmail.com; Timothy, Jackie L (DFG)  
**Cc:** Scholl, James W (DOT); Gendron, Jane D (DOT); Leclair, Claire H (DNR)  
**Subject:** FW: Public Comment Period concerning the release of the Revised Environmental Assessment for the Haines Highway Improvements Project

Hello Council,

Just for your information DOT is opening another public comment period for the Haines Highway project (see below). So please be sure to check the link below for additional information and get your comments to them. DNR will not be asked to comment on the project until after the comment period has closed and the comments analyzed. Sometime after that is when I will be going to the Council for review of our comments about the project.



FHWA concluded there will be a 30 day comment period for the Haines Highway 3.5 to 25.3 Highway Improvements Revised Environmental Assessment (Revised EA). The dates for release of the Revised EA and associated comment period will be announced as soon as available. For project related information go to [http://dot.alaska.gov/sereg/projects/haines\\_hwy/index.shtml](http://dot.alaska.gov/sereg/projects/haines_hwy/index.shtml)

*Keep Alaska Moving through Service and Infrastructure*

Thanks

*Mike Eberhardt*

Southeast Area Park Superintendent  
400 Willoughby Ave, 5th floor  
POB 111071 Juneau 99811  
Ph 465-2481



**PROVIDING OUTDOOR  
RECREATION OPPORTUNITIES FOR  
THE USE, ENJOYMENT AND WELFARE  
OF THE PEOPLE.**



THE STATE  
of **ALASKA**  
GOVERNOR SEAN PARNELL

Department of Transportation  
and Public Facilities

SOUTHEAST REGION  
DESIGN & ENGINEERING SERVICES  
Preconstruction

6860 Glacier Highway  
PO Box 112506  
Juneau, Alaska 99811-2506  
Main: 907.465.4444  
Toll free: 800.575-4540  
Fax: 907.465.4414

Haines Highway MP 3.5 – 25.3  
State/Federal Project No. 68606/SHAK-095-6(28)  
Request for concurrence: No Adverse Effect  
Alaska Chilkat Bald Eagle Preserve

April 28, 2014  
Table 3 Updated on May 30, 2014

Mr. Michael Eberhardt  
Park Superintendent  
Alaska Department of Natural Resources  
Division of Parks and Outdoor Recreation  
400 Willoughby Ave.  
P.O. Box 111071  
Juneau, AK 9811-1071

Dear Mr. Eberhardt:

In 2010, the Alaska District of Federal Highway Administration (FHWA) began a formal consultation process with the Alaska Department of Natural Resources—Division of Parks and Outdoor Recreation (DNR DPOR) regarding the Alaska Department of Transportation and Public Facilities' (DOT&PF) proposal to upgrade the Haines Highway between Mile Post (MP) 3.5 and 25.3. Proposed upgrades include road widening and right-of-way (ROW) acquisitions within the Alaska Chilkat Bald Eagle Preserve (Preserve), a property protected by Section 4(f)<sup>1</sup> originally enacted in the Department of Transportation Act of 1966.

DOT&PF is reengaging with DNR DPOR in order to update FHWA's previous consultation. This letter provides an overview of the Revised Proposed Action, describes the re-assessed potential impacts to the Preserve and presents DOT&PF's proposed measures to mitigate impacts and enhance Preserve resources. DOT&PF asks for your written concurrence that the Revised Proposed Action would not adversely affect the features, attributes, or activities of the Preserve, a property protected under Section 4(f).

Section 4(f) regulations (23 CFR Part 774) prohibit the use of publicly owned land of a wildlife and waterfowl refuge of National, State, or local significance unless:

<sup>1</sup> Protection now authorized under 23 U.S.C. 103(c), 109(h), 138, 325, 326, 327 and 204(h)(2); 49 U.S.C. 303; Section 6009 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act; and 49 CFR 1.48 and 1.51.



- 1) there is no feasible and prudent avoidance alternative and the action includes all possible planning to minimize harm to the property from such use,
- 2) the use of the property, including measures to minimize harm, would have a *de minimis* impact, or
- 3) if the use is greater than *de minimis*, only the alternative that causes the least overall harm may be approved.

As presented in this letter, the analyses indicate that the Revised Proposed Action would not have an adverse effect to the Preserve and FHWA intends to make a *de minimis* impact finding. FHWA will use your written concurrence regarding impacts in making a final Section 4(f) finding.

### **Revised Proposed Action**

The DOT&PF, in partnership with the FHWA, is proposing to address deficiencies on the Haines Highway from MP 3.5 to 25.3 (Figure 1). On either side of the project corridor, the Haines Highway is constructed to meet a 55 miles per hour (mph) design standard<sup>2</sup>. The Revised Proposed Action would reconstruct the remaining substandard section of Haines Highway to meet the 55 mph design standard, as practicable, with travel lanes and shoulder widths, curves, sight distances, and intersections or driveways to provide safe traffic conditions at a posted speed of 55 mph.

### **The Proposed Action would**

- **Improve the Haines Highway**  
and specifically would
  - Realign sections of the highway and straighten most curves to meet design standards with the exception of two curves. Two curves in the vicinity of MP 13 would not be straightened to avoid sensitive resources.
  - Add passing zones<sup>3</sup>.
  - Widen the roadway shoulders to a continuous 6-foot width and provide minimum sight distance to meet design standards (Figure 2).
  - Construct drainage ditches and upgrade, replace, and/or add new culverts where appropriate.
  - Repave and restripe the roadway and add new signage.
  - Rehabilitate or relocate driveways, turnout access points, and road intersections (including Chilkat Avenue, Klukwan) to meet design standards.
  - Install or upgrade guardrails and other safety features along the highway where needed (Figure 2).
  - Modify the Haines-Fairbanks Pipeline Gate Valve 4's surrounding concrete vault to protect the gate valve and provide a road embankment that meets design standards.
  - Acquire approximately 23.4 acres of ROW and relinquish some ROW as well.
  - Relocate utilities where required. Maintain access to utilities not relocated.

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<sup>2</sup> DOT&PF, 2005; AASHTO, 2001; AASHTO, 2013

<sup>3</sup> A passing zone is an area on the highway route where the roadway geometry and sight distance permits faster vehicles to overtake slower vehicles in the lane normally used by opposing traffic. Dashed yellow centerline markings indicate where passing is permitted on two-lane, two-way roadways. Personal communication Pat Carroll, P.E., DOT&PF to Jane Gendron, DOT&PF Environmental Impact Manager, May 20, 2013.



- **Replace the Chilkat River Bridge**  
and specifically would
  - Install a temporary bridge downstream to be used as a construction staging platform.
  - Construct a new bridge directly adjacent to and downstream of the existing bridge with the same lane and shoulder widths as the revised proposed road (Figure 3). The new bridge would be constructed to meet the following criteria:
    - a 55 mph design speed
    - current seismic standards
    - accommodate freight vehicles carrying heavier industrial loads than would be accommodated by the minimum bridge standard.
  - Remove existing bridge deck and rail; cut and remove foundation structures including remnant pilings from previous bridge structures.
- **Improve Highway Protection at Debris and Water Flood Flow Areas**  
and specifically would
  - Raise the elevation of the highway between 15 to 18 feet at MP 19 and 23.
  - Install four to six larger diameter culverts at each debris flow area (MP 19 and 23).
- **Improve Recreational Access**  
and specifically would
  - Widen roadway shoulders from 2 feet to 6 feet to improve pedestrian and bicycle safety.
  - Construct a parking area for access to the Mount Ripinski Trailhead near MP 7
  - Improve surfacing and grading of public access points and turnouts within ROW.
  - Improve access to the Chilkat River recreational areas.
  - Add one additional public use and viewing area at MP 20.5

In order to straighten curves and provide for wider roadway shoulders, an additional 23.4 acres of new right-of-way would be required. Most of that acreage (17.6 acres) would be obtained from private owners. An estimated 5.54 acres would be needed from public lands; 2.98 of those acres would be acquired from DNR's Alaska Chilkat Bald Eagle Preserve. Potential impacts of this acquisition are discussed further in the following section on proposed impacts and mitigation.

#### **Section 4(f) Property Description**

The Preserve is owned by the State of Alaska and co-managed by DNR DPOR and Alaska Department of Fish and Game (ADF&G). In 1973, the Alaska legislature established a 4,800-acre critical habitat area to manage this bald eagle concentration; in 1980, a three-year research study provided the basis for establishing the now nearly 50,000-acre Chilkat Bald Eagle Preserve, established in 1982.

The Preserve's primary mission is to protect and perpetuate the world's largest concentration of bald eagles and their essential habitats.

As specified in the statute (AS 41.21.610 (b)), the Preserve is also established to

- (1) *protect and sustain the natural salmon spawning and rearing areas of the Chilkat River and*

*Chilkoot River systems within the preserve in perpetuity;*

- (2) provide continued opportunities for research, study and enjoyment of bald eagles and other wildlife;*
- (3) ensure to the maximum extent practicable water quality and necessary water quantity under applicable laws;*
- (4) provide for other public uses consistent with the primary purpose for which the Alaska Chilkat Bald Eagle Preserve is established; and*
- (5) provide an opportunity for the continued traditional and natural resource based lifestyle of the people living in the general areas described in AS 41.21.611 (b), consistent with the other purposes of this subsection and (a) of this section.*

The extent of the Preserve is depicted on Figure 4.

**Proposed Impacts to the Alaska Chilkat Bald Eagle Preserve**

***Land acquisition***

An estimated 2.98 acres of the Preserve would be permanently acquired as DOT&PF ROW to accommodate the Revised Proposed Action. Also, 1.6 acres of Preserve would be temporarily used to construct proposed stream mitigation activities. This is discussed below under Mitigation.

The Proposed ROW acquisition in the Preserve is summarized below in Table 1 and shown in Figure 5.

**Table 1: Summary of Proposed ROW Acquisition in Preserve**

<b>DOT&amp;PF Parcel #</b>	<b>Acreage</b>	<b>Approximate Station (beginning-end)</b>	<b>Habitat Type</b>
E-7A	0.46	869 to 874	Forested Upland
E-7B	2.51	877 to 884+50	Forested Upland
E-7C	0.01	865	Forested Upland
Total acres = 2.98			

***Public Access***

In compliance with the 1987 Cooperative Management Agreement (MOA) between DNR and DOT&PF for this roadway corridor, DOT&PF consulted with your office regarding the proposed project over the past 10 years. After multiple site visits and reviews of public access points along the entire project extent, DOT&PF met with DNR DPOR and discussed recommendations for the existing public access and turnouts along the project corridor (refer to enclosed Coordination between DOT&PF and DNR DPOR).

Most of your recommendations for access point modifications have been incorporated into the Revised Proposed Action (see enclosed Table 2). The enclosed 2009 coordination documentation between DNR and DOT&PF shows the recommended treatment for each identified public access point and DOT&PF’s plan for those sites. These are the proposed concept designs and would be finalized prior to construction.

As agreed upon, only the transition between these turnouts and the highway would be improved. Access points and turnouts would not be enlarged or paved unless they are already paved. The intent of the work is to make vehicle transitions safer, not to provide larger access footprints at those locations.

After multiple consultations with DNR and the Chilkat Indian Village, DOT&PF has decided not to make any improvements to the area adjacent to the Chilkat River at the bridge crossing location (HNS-27).

We are proposing one additional public viewing location as a new turnout adjacent to the Council Grounds. Figure 6 shows the location at approximately MP 20.5 where the proposed highway alignment shifts uphill 150 feet. The abandoned highway pavement adjacent to the Chilkat River would be modified into a vehicle turnout and parking area. This is in an area where eagles congregate, as shown by the perching trees recorded during an eagle survey conducted in the fall of 2013. A turnout at this location would provide an additional opportunity for eagle viewing and photography.

***Analysis of Affects to Preserve Features and Attributes***

As stated above, the Preserve's primary mission is to protect and perpetuate the world's largest concentration of bald eagles and their essential habitats (AS 41.21.610(a)). The land in the DOT&PF ROW is excluded from the Preserve yet DOT&PF and FHWA are working with DNR, ADF&G, and the U.S. Fish and Wildlife Service (USFWS) to avoid and minimize the impacts to eagle habitat within the ROW, to the extent practicable. As a result of public and agency comments, a bald eagle survey was done in the fall of 2013. That report is enclosed with this letter (ABR, February 2014).

Subsequent to the fall 2013 survey, an analysis was conducted to evaluate the potential for the Revised Proposed Action to affect the bald eagle population that uses the Preserve. The project would cut some perching trees within the DOT&PF ROW. Most of these trees are on the up-hill (away from the River) side of the highway. No perching or roosting trees would be cut within the Preserve. No bald eagle nests would be removed.

Based on the analysis, the consultant, ABR, recommended that the Revised Proposed Action would not adversely affect the bald eagle population using the Preserve. There are adequate trees that would remain that would continue to provide perching and roosting in this area after project construction (ABR, February 2014). DOT&PF is working with USFWS to develop a mitigation strategy to replace some of the removed perching trees in the ROW. Some concepts include adding trees or perching structures to the river side of the highway where possible.

Based on the analysis of the Revised Proposed Action and its potential to affect bald eagles, FHWS finds that the project would not adversely affect the Preserve's primary mission to protect bald eagles and their essential habitat.

The following table contains the summary of the analysis done to determine if the Revised Proposed Action would be in compliance with the other goals of the Preserve.

**Table 3. Compliance with other Alaska Statute Purposes for the Preserve (Updated May 30, 2014<sup>4</sup>)**

<b>Goals (AS 41.21.610 (b))</b>	<b>Revised Proposed Action Effects</b>
1. Protect and sustain the natural salmon spawning and rearing areas of the Chilkat River and Chilkoot River systems within the preserve in perpetuity;	Most of the effects to the Chilkat River and its tributaries would be in areas outside of the Preserve. As described below under Mitigation, there are four areas within the Preserve where DOT&PF proposes to enhance

<sup>4</sup> Text underlined in this table has been updated.

Goals (AS 41.21.610 (b))	Revised Proposed Action Effects
	<p>salmon spawning and rearing habitat. Natural features would be enhanced by adding tributary sinuosity, shifting tributaries away from the road so they can regain natural functions and stabilizing banks where erosion is affecting stream water quality. Some Chilkat River banks in the ROW adjacent to the Preserve would be hardened by vegetated riprap. Most of these banks are already vegetated riprap. Additional habitat would be established at locations selected through consultation with ADF&amp;G, USFWS, and NMFS.</p> <p>Eleven (11) anadromous fish culverts would be upgraded to improve fish passage. One culvert would be removed and the stream day-lighted.</p>
<p>2. Provide continued opportunities for research, study, and enjoyment of bald eagles and other wildlife.</p>	<p>All sanctioned access points to land within the Preserve would be maintained and one additional turnout is proposed within the Council Grounds (MP 20.5) that would add a safe location for the enjoyment of eagle observations and photography.</p> <p>Some of the eagle perching trees would be cut within the ROW; none would be cut within the Preserve. DOT&amp;PF and USFWS are working on opportunities to mitigate for the loss of those trees. There would be no change in opportunities for research and study.</p> <p>The fish wheels used by ADF&amp;G for monitoring the strength of salmon returns would be maintained and additional fish wheel locations are being added at ADF&amp;G's request.</p>
<p>3. Ensure to the maximum extent practicable water quality and necessary water quantity under applicable laws;</p>	<p>The project would not affect water quantity. <u>The project is being designed to provide stable banks along the Chilkat River and its tributaries to ensure water quality. However, the Revised Proposed Action at the debris slide area at MP 19 would elevate the roadway and install large box culverts intended to allow slide debris and associated water to flow more naturally into the Chilkat River. These slides contain large amounts of silt, sand, and gravels as well as larger rocks. Water quality during a</u></p>

Goals (AS 41.21.610 (b))	Revised Proposed Action Effects
	<p><u>slide event is expected to have high suspended solids as it enters the river. Water quality would not be degraded by high organic or man-made pollutants during these events. The Chilkat River is a glacial fed river with normally high turbidity. The increase in turbidity would depend on the size of the debris slide and the natural condition of the river water suspended solids at the time of the slide.</u></p> <p>In accordance with the Alaska Construction General Permit, water quality BMPs would be employed during construction to avoid and minimize water quality impacts. Disturbed ground would be stabilized as soon as practicable to provide both short term and long term water quality protection.</p>
<p>4. Provide for other public uses consistent with the primary purpose for which the Alaska Chilkat Bald Eagle Preserve is established; and</p>	<p>The other public uses in the Preserve include personal and commercial boating, fishing, and wildlife viewing. DOT&amp;PF is working with ADFG to retain and improve sanctioned boat launches, as needed. Public turnouts would have improved access.</p>
<p>5. Provide an opportunity for the continued traditional and natural resource based lifestyle of the people living in the general areas described in AS 41.21.611 (b), consistent with the other purposes of this subsection and (a) of this section.</p>	<p>DOT&amp;PF, in consultation with local Tribes, has designed the improvements to avoid known subsistence areas. The avoidance, minimization, and mitigation measures that have been developed to avoid impacts to salmon and eulachon have been reviewed by the Tribes. The Tribes' requests for the use of bioengineered structures to stabilize the Chilkat River embankments adjacent to the road have been considered. DOT&amp;PF has offered alternative ways to introduce woody debris along the river to enhance juvenile fish habitat. Introduction of woody debris would not occur in areas used for subsistence (drift nets or set nets).</p>

**Impact Avoidance, Minimization and Mitigation Measures**

***Avoidance Measures:***

The following design modifications were implemented to avoid adverse impacts to the Preserve:

- The existing road alignment was followed to the extent feasible.
- Following release of the public review EA in July 2013, many comments were received asking for fewer impacts to the Preserve. Additional modifications were made to retain the existing alignment throughout the project. The previously proposed realignment adjacent to the Chilkat River between Sta. 430-436 that would have needed 0.26 acres of Preserve within the river was altered to avoid that Preserve acquisition.
- As recommended by DNR, three access points would be blocked (HNS-10, HNS-11, HNS-18) to the public to restore habitat in these unsanctioned use areas where garbage is being dumped and habitat-disturbing activities are occurring.

***Minimization Measures:***

- Fill slopes in the Chilkat River are as steep as practicable (2:1) to minimize the fill footprint.
- The elevation of the road was adjusted to minimize the extent of the fill footprint throughout the project including in the area needed from the Preserve.
- Based on public comments, less roadway straightening would be done by reducing the number of passing zones. This would minimize environmental impacts with ROW adjacent to the Preserve. Public access points and turnouts would not be enlarged; only the vehicular access improved. This would minimize possible secondary impacts from increased public use.

***Mitigation Measures:***

To mitigate for the unavoidable ROW acquisition, DOT&PF proposes to relinquish approximately 6.16 acres of existing DOT&PF ROW to the Preserve. Figure 5 shows the location of the areas proposed for relinquishment. They are directly adjacent to the areas proposed for ROW acquisition. The ratio of relinquishment to acquirement is 2.1:1.

**Table 4: Summary of Proposed ROW Relinquishments to Preserve**

<b>DOT&amp;PF Parcel ID</b>	<b>Acreeage</b>	<b>Approximate Station (beginning-end)</b>	<b>Habitat Type</b>
R-25A	3.60	865+50 to 877	Forested Upland
R-25B and 25C	2.56	874+50 to 886	Forested Upland

DOT&PF is proposing on-site mitigation to restore and enhance fish habitat along the project corridor. The stream mitigation proposal is based on extensive coordination with a multi-agency team including ADF&G, DNR-DPOR and other state and federal resource specialists. Some of these proposed stream mitigation sites would be on Preserve property and would enhance the Preserve.

Stream mitigation and habitat enhancement activities would be conducted on a total of 1.93 acres divided among four areas in the Preserve. DOT&PF would apply to ADFG for Special Use Permits for these mitigation activities.

These areas are shown on the attached Sheets 1, 2, and 3 of 3– Mitigation Sites Proposed within the Preserve. Each of these sites provides an opportunity to restore and / or enhance the existing stream channels through various methods such as:

- Lengthening the channel to provide more fish habitat
- Shifting the stream further away from the road to avoid storm water pollutants,
- Constructing additional meanders and riparian buffers, and /or stream bank stabilization

**Table 5: Summary of Special Use Permit Areas for Stream Mitigation**

Figure Set B Sheet	Acreage	Approximate Station (beginning-end)	Habitat Type
Sheet 1 of 3	0.58	513+50 to 516+50	Emergent – permanently flooded wetlands (PEM1H)
Sheet 1 of 3	0.50	520+50 to 523	Emergent – permanently flooded wetlands (PEM1H)
Sheet 2 of 3	0.30	651 to 653+50	Scrub shrub – permanently flooded wetlands (PSS1H)
Sheet 3 of 3	0.55	867+50 to 871+50	Remnant channel and uplands to be converted to riverine/fish habitat

By a separate letter, we will ask for your agreement with the proposed temporary access needed for construction of these proposed stream mitigation projects.

Based on the above information, DOT&PF respectfully requests your written agreement that the Revised Proposed Action, as presented, would not adversely affect the activities, features and/or attributes of the Alaska Chilkat Bald Eagle Preserve.

Please contact me at (907) 465-4499, or by email at [jane.gendron@alaska.gov](mailto:jane.gendron@alaska.gov), if you have any questions or would like to discuss this request. If you wish, we can schedule a meeting with DOT&PF, FHWA, ADF&G and DPOR to go over any details of concern.

Sincerely,



Jane Gendron  
 Southeast Region Environmental Manager

*updated Table 3  
 5/30/14  
 no other changes to  
 letter  
 JWS*

I \_\_\_\_\_, as the official with jurisdiction over the Alaska Chilkat Bald Eagle Preserve, a Section 4(f) property, concur that the project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f). I have been informed of FHWA’s intent to make a *de minimis* impact finding based on the information presented in this letter and the enclosed documentation.

---

Name	Title	Date
------	-------	------

Enclosures:

Table 2. Turnouts/Recreational Facilities within the Haines Highway (Mileposts 3.5 to 25.3) Project Corridor  
Figure 1—Project Location  
Figure 2—Typical Section of Roadway and Roadway with Guardrails adjacent to the Chilkat River  
Figure 3—Proposed Chilkat River Bridge Location  
Figure 4—Alaska Chilkat Bald Eagle Preserve and Critical Habitat Area  
Figure 5—Proposed ROW Acquisition and Relinquishments within the Preserve  
Figure 6—Proposed New Public Access Turnout at MP 20.5  
Sheets 1, 2, and 3, through 3—Mitigation Sites Proposed within the Preserve  
2009 Coordination between State of Alaska DNR on Turnout Improvements  
ABR, Inc. *An Assessment of Perch Use and Possible Impacts of Proposed Haines Highway realignments on Bald Eagles During Fall and Winter, 2013, Chilkat River, Alaska.* February 2014

CC:

Greg Lockwood, P.E., DOT&PF, Project Manager  
Jim Scholl, DOT&PF Southeast Region, Project Environmental Coordinator  
Pat Carroll, P.E., DOT&PF Southeast Region Preconstruction Engineer  
Keith Karpstein, P.E., DOT&PF, Design Group Chief  
Alex Viteri, P.E., FHWA Southeast Area Engineer  
Jackie Timothy, ADF&G Habitat, Juneau Area Supervisor

References:

AASHTO. 2001. *A Policy on Geometric Design of Highways and Streets.* AASHTO.

DNR DMLW, DPOR. 2002a. *Alaska Chilkat Bald Eagle Preserve Management Plan September 2002.*  
Prepared by State of Alaska DNR DMLW, DPOR. Available online at  
<http://dnr.alaska.gov/parks/plans/eaglepln/eaglepln.htm>. Last accessed 2014.

DOT&PF. 2005 *Alaska Highway Preconstruction Manual* Available at  
[http://www.dot.state.ak.us/stwddes/dcsprecon/pop\\_preconstman.shtml](http://www.dot.state.ak.us/stwddes/dcsprecon/pop_preconstman.shtml)



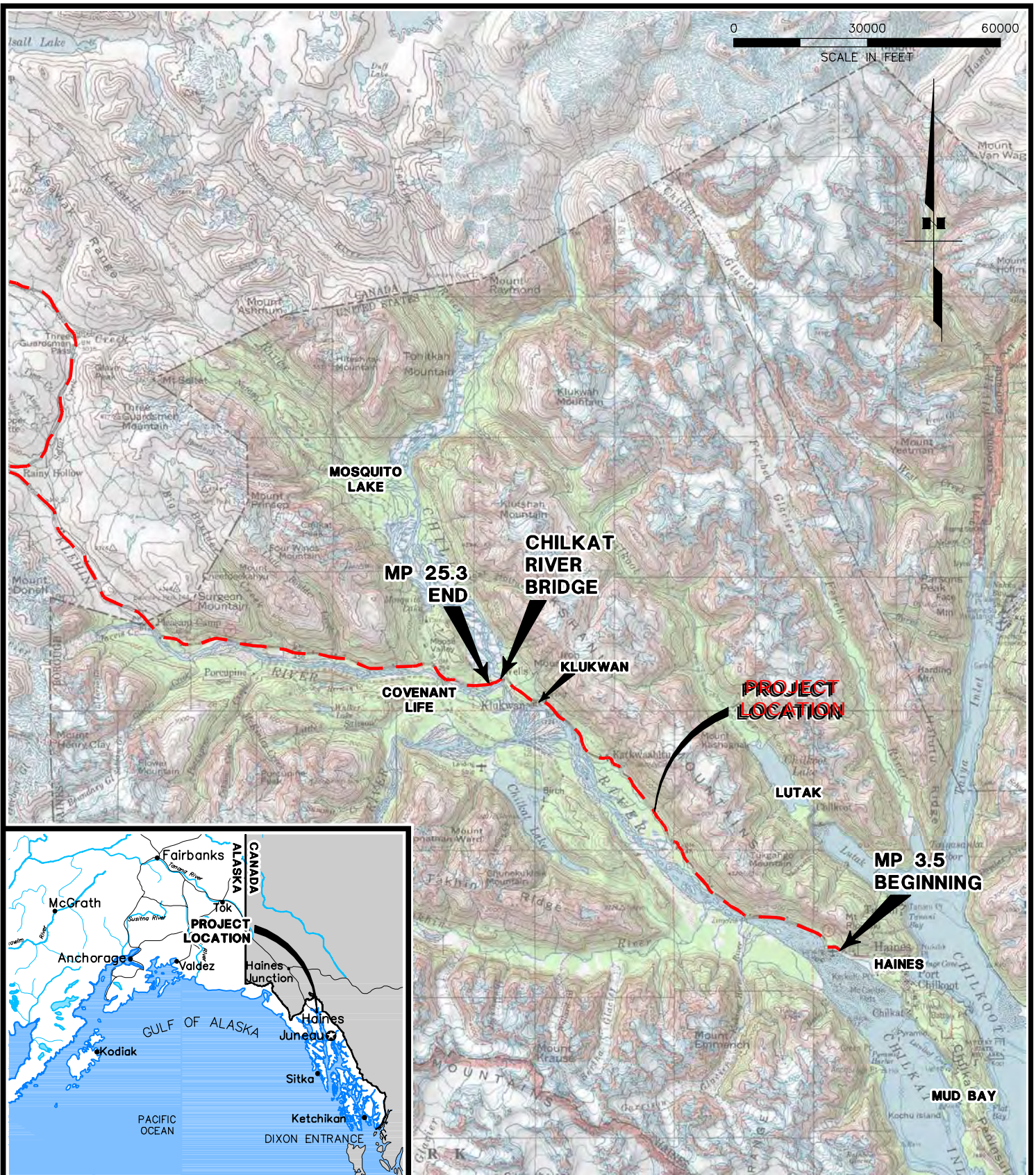
**Table 2. Turnouts/Recreational Facilities within the Haines Highway (Mileposts 3.5 to 25.3) Project Corridor**

<b>Turnout ID</b>	<b>Approximate Milepost</b>	<b>Description</b>	<b>Revised Proposed Action</b>
HNS1	4.3	Camping and fishing	Accepted DNR's recommendation. Maintain access and provide wider approaches (24 feet wide). Pave to curve return.
HNS2	4.4	Fishing	Accepted DNR's recommendation. Provide a widened shoulder for parking.
HNS3	5.7	Informal parking/camping area, fishing.	Implement a modification of DNR's recommendation. Provide access with one 24-foot-wide driveway. Pave to curve return. Eliminate second driveway.
HNS4	7.3	Camping and fishing access.	Accepted DNR's recommendation. Provide access with one 24-foot-wide driveway.
HNS4A	7.2	Mount Ripinski Trailhead (currently no parking area for this trailhead).	Develop new turnout with parking spaces for 7 vehicles to access the Mount Ripinski trailhead near MP 7.
HNS5	7.8	River flats, boat launch at high water.	Accepted DNR's recommendation. Provide a widened shoulder for parking.
HNS6	8.1	Fishing	Accepted DNR's recommendation. Provide a widened shoulder for parking.
HNS7	8.5	Access road to boat launch, parking for trailers.	Accepted DNR's recommendation. Provide driveway on river side for boat launch only.
HNS8	9.9	Boat launch and trailer parking	Modified DNR's recommendation. Provide access with one 24-foot-wide approach.
HNS9	10.9	Parking area and unauthorized trash dump.	Accepted DNR's recommendation. Develop new parking area for adjacent pond that is sometimes used for ice-skating (see HNS 10 and 11).
HNS10	11	Approach to an old loop road that encircled a small pond used sometimes for ice-skating (road is no longer drivable).	Accepted DNR's recommendation to remove access. HNS 9 would be improved with additional parking for pond area.
HNS11	11.1	Approach to an old loop road that encircled a small pond used sometimes for ice-skating (road is no longer drivable).	Accepted DNR's recommendation to remove access. HNS 9 would be improved with additional parking for pond area.
HNS12	11.5	Canoe launch.	Accepted DNR's recommendation to provide access. Provide a widened shoulder for parking.
HNS 13	12.9	Steep approach to a small road leading to the river; sometimes used by sport fishermen. Recent river alignment shifts have made boat launching difficult here.	Implement a modification of DNR's recommendation. . Provide fill to reduce slope and resurface HNS 13 instead of creating new access at HNS 14.

<b>Turnout ID</b>	<b>Approximate Milepost</b>	<b>Description</b>	<b>Revised Proposed Action</b>
HNS14	13	No existing use. DNR proposed new boat launch site at HNS 14 to replace HNS 13.	Implement a modification of DNR's recommendation. . It was decided to improve HNS 13 instead of creating new access at HNS 14.
HNS15	13.8	River access, fishing	Implement a modification of DNR's recommendation. Provide two 24-foot approaches and gravel surface to provide parking for up to 10 vehicles. Pave to curve return. DNR Parks would maintain this turnout.
HNS16	13.9	Boat launch site.	No proposed improvements at this time.
HNS17	14.3	Commercial raft operation retrieval site.	Provide widened shoulder and re-grade from edge of pavement to existing driveway to improve slope for bus traffic. Obliterate and vegetate abandoned road footprint.
HNS18	16	Currently used as unauthorized trash dump and for parties.	As recommended by DNR, access would be removed. Ditch would be dug across access driveway.
HNS19	19.2	Eagle viewing turnout (high use).	Implement a modification of DNR's recommendation. The highway would be raised approximately 15 feet through this area, and parking would be provided along the highway. No other access proposed.
HNS20	19.4	Commercial raft launch and retrieval site.	Accepted DNR's recommendation. Provide access with one 24-foot-wide approach. Pave to curve return. There is room for parking one van with trailer and one bus along the existing gravel drive.
HNS21	19.5	Eagle viewing.	Implement a modification of DNR's recommendation. Provide access with two 24-foot-wide plow-friendly approaches. Pave to curve return. Obliterate and vegetate abandoned road footprint.
HNS22	19.8	Eagle viewing (photograph opportunities).	Accepted DNR's recommendation to maintain parking and access to existing turnout. No additional parking would be provided.
HNS23	20.2	Eagle viewing.	Accepted DNR's recommendation to maintain parking and access to existing turnout. No additional parking would be provided.
HNS28	20.5	Eagle Viewing (photographic opportunities)	New eagle viewing turnout would be constructed on existing pavement after highway has been re-aligned away from the river.
HNS24	20.6	Boat launch site.	No modifications proposed at this time.
HNS25	20.6	Eagle viewing.	Implement a modification of DNR's recommendation. Provide access with two 24-foot approaches Improve exit/entrance return radii to ease snow plow maintenance.
HNS26	20.8	Fishing, bird watching.	Implement a modification of DNR's recommendation. Provide access with one 24-foot-wide approach.
HNS27	23.9	Informal boat launch site along Chilkat River	Did not incorporate DNR's recommendation. No access proposed.

<b>Turnout ID</b>	<b>Approximate Milepost</b>	<b>Description</b>	<b>Revised Proposed Action</b>
		banks; DNR recommended construction of a new boat launch.	
HNS28	20.5	New area for viewing and photographing bald eagles, other wildlife and scenery.	Road realignment in this area will move highway farther away from river. Existing road pavement that will no longer be part of roadway will be used to create new pullout.





Project Location  
and  
Vicinity Map

TS 28/29/30 South, R56/57/58/59 East,  
Copper River Meridian, Alaska.

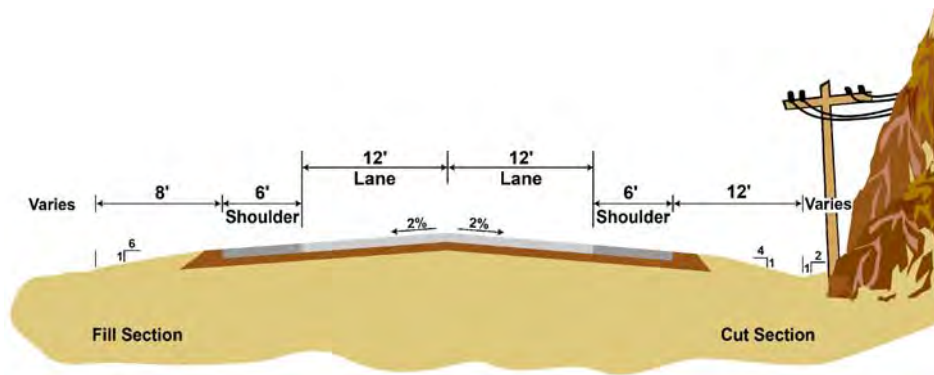


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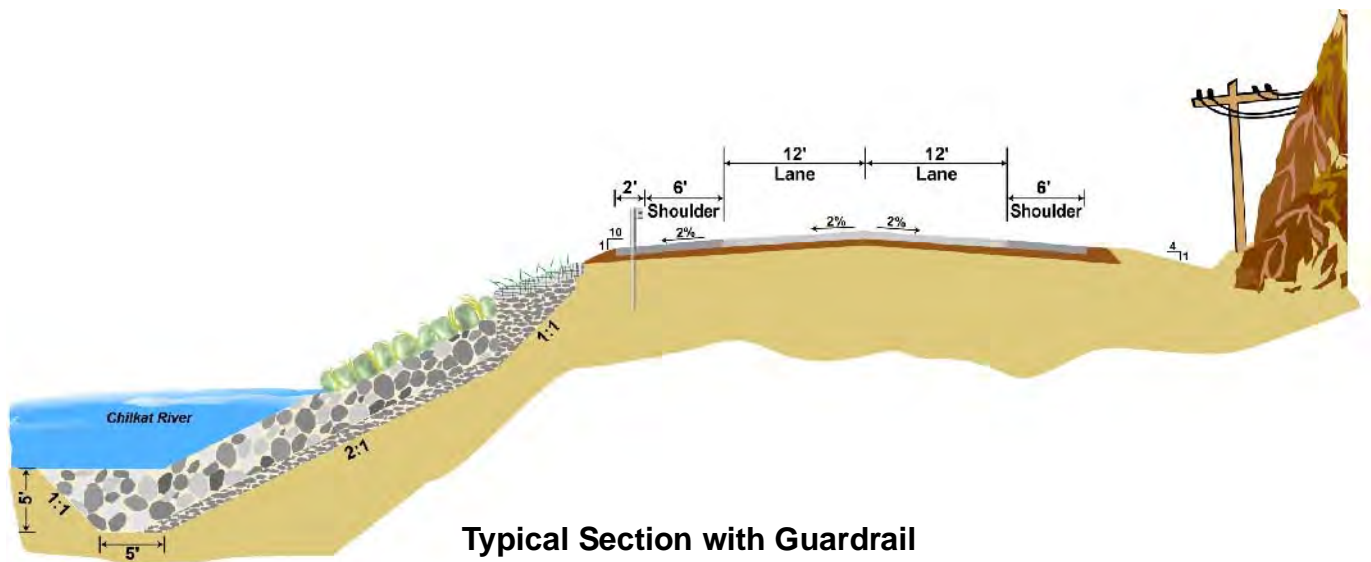
DOT & PF Project No. 68606  
HAINES HIGHWAY  
MILEPOST 3.5 - 25.3

Haines, Alaska





**Proposed Typical Section**



**Typical Section with Guardrail**

**Proposed Typical Sections**

TS 28/29/30 S, R 56/57/58/59 E,  
Copper River Meridian, Alaska



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**STATE OF ALASKA**  
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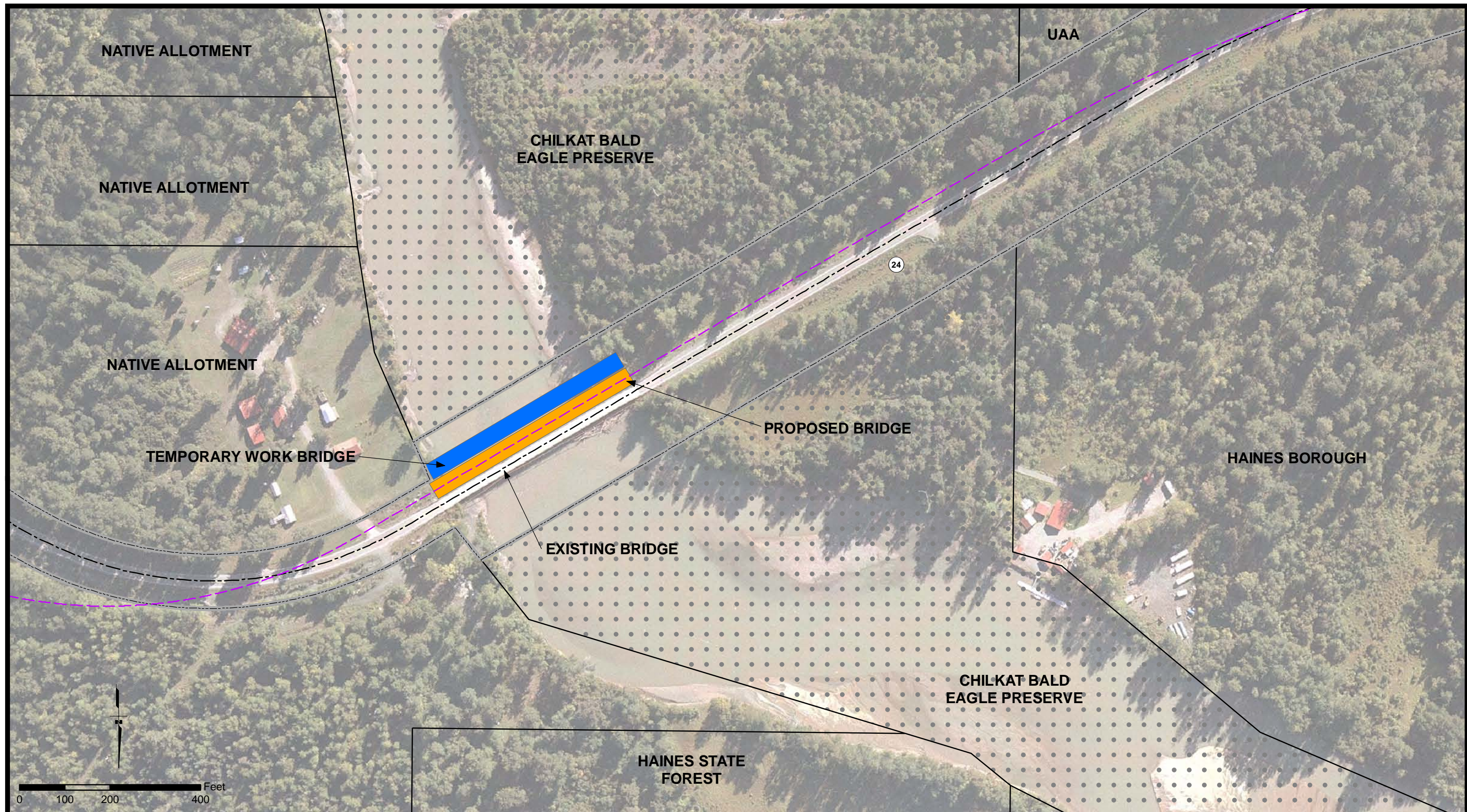
DOT & PF Project No. 68606  
HAINES HIGHWAY  
MILEPOST 3.5 - 25.3

Haines, Alaska

DATE: Apr 28, 2014

FIGURE 2





- Existing Road Centerline
- Proposed Alignment
- Existing ROW
- # Milepost
- Proposed New Bridge
- Temporary Work Bridge
- Chilkat Bald Eagle Preserve

**Proposed Chilkat River Bridge Location**

TS 28/29/30 S, R 56/57/58/59 E,  
Copper River Meridian, Alaska  
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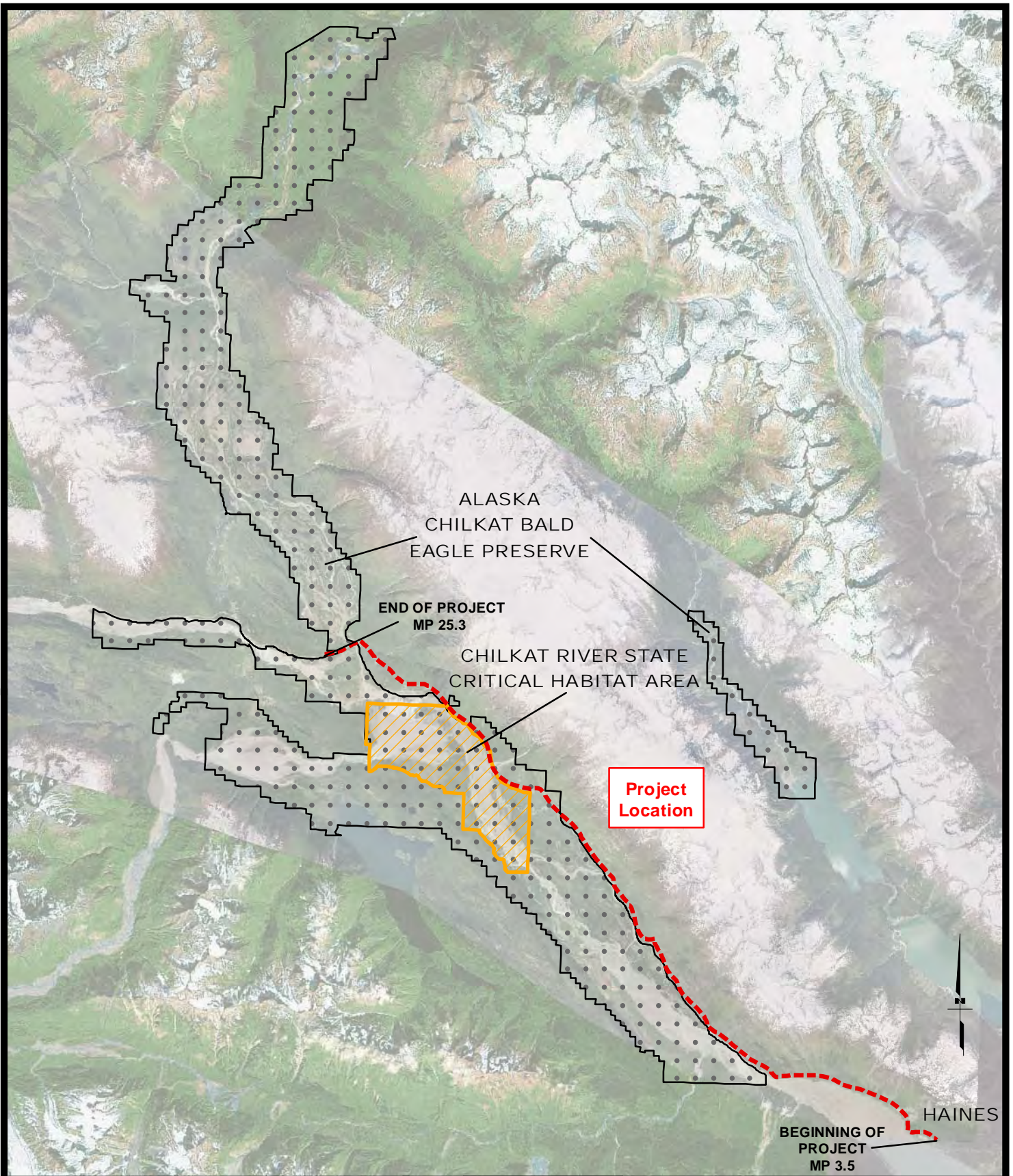
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AND PUBLIC FACILITIES  
DOT & PF Project No. 68606  
HAINES HIGHWAY  
MILEPOST 3.5 - 25.3

Haines, Alaska

DATE: April 28, 2014

FIGURE 3





**Alaska Chilkat Bald Eagle Preserve  
and Critical Habitat Area**

TS 28/29/30 S, R 56/57/58/59 E,  
Copper River Meridian, Alaska



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**STATE OF ALASKA**  
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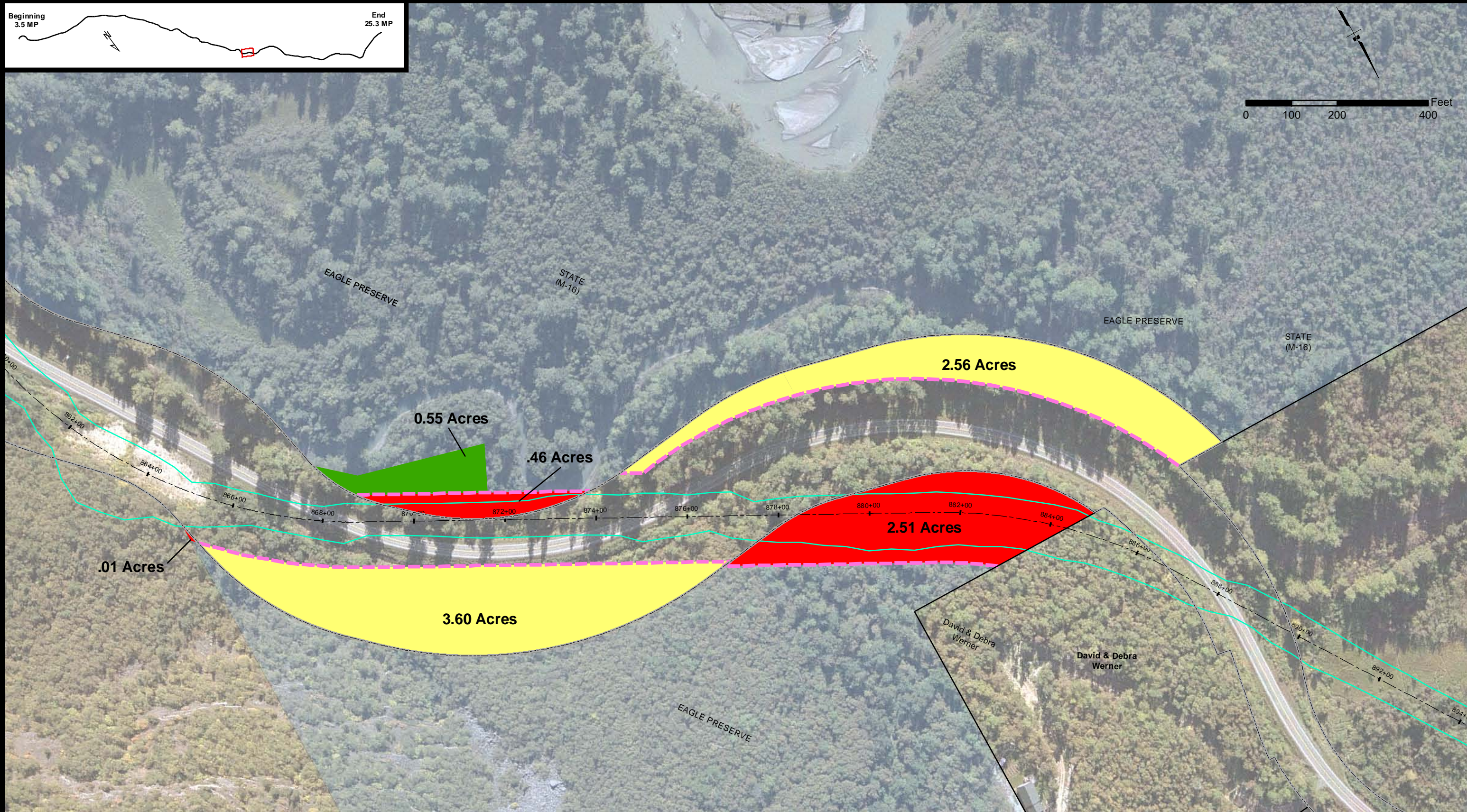
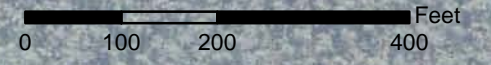
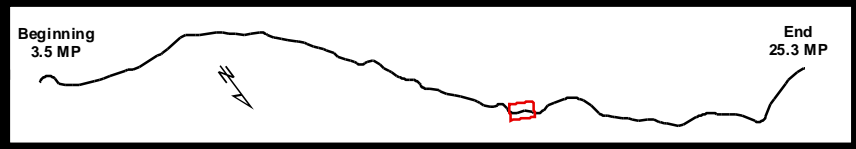
DOT & PF Project No. 68606  
HAINES HIGHWAY  
MILEPOST 3.5 - 25.3

Haines, Alaska

DATE: Apr 28, 2014

FIGURE 4





- 4 (f) ROW Changes**
- Alaska Chilkat Bald Eagle Preserve (Preserve)
  - Existing ROW to be allocated to Preserve
  - Proposed ROW acquisition within Preserve
  - Special Use Permit Area for Stream Mitigation in Preserve
  - Proposed Centerline
  - Existing ROW
  - Proposed shift in ROW
  - Eagle Nest *Eagle Nests 2012 Survey*
  - Eagle Nest 330' Radius
- Note: The stream mitigation is still in design for this centerline and is not shown in this map set.

**Proposed ROW Acquisition and Relinquishments within the Preserve**

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TS 28/29/30 S, R 56/57/58/59 E,  
Copper River Meridian, Alaska  
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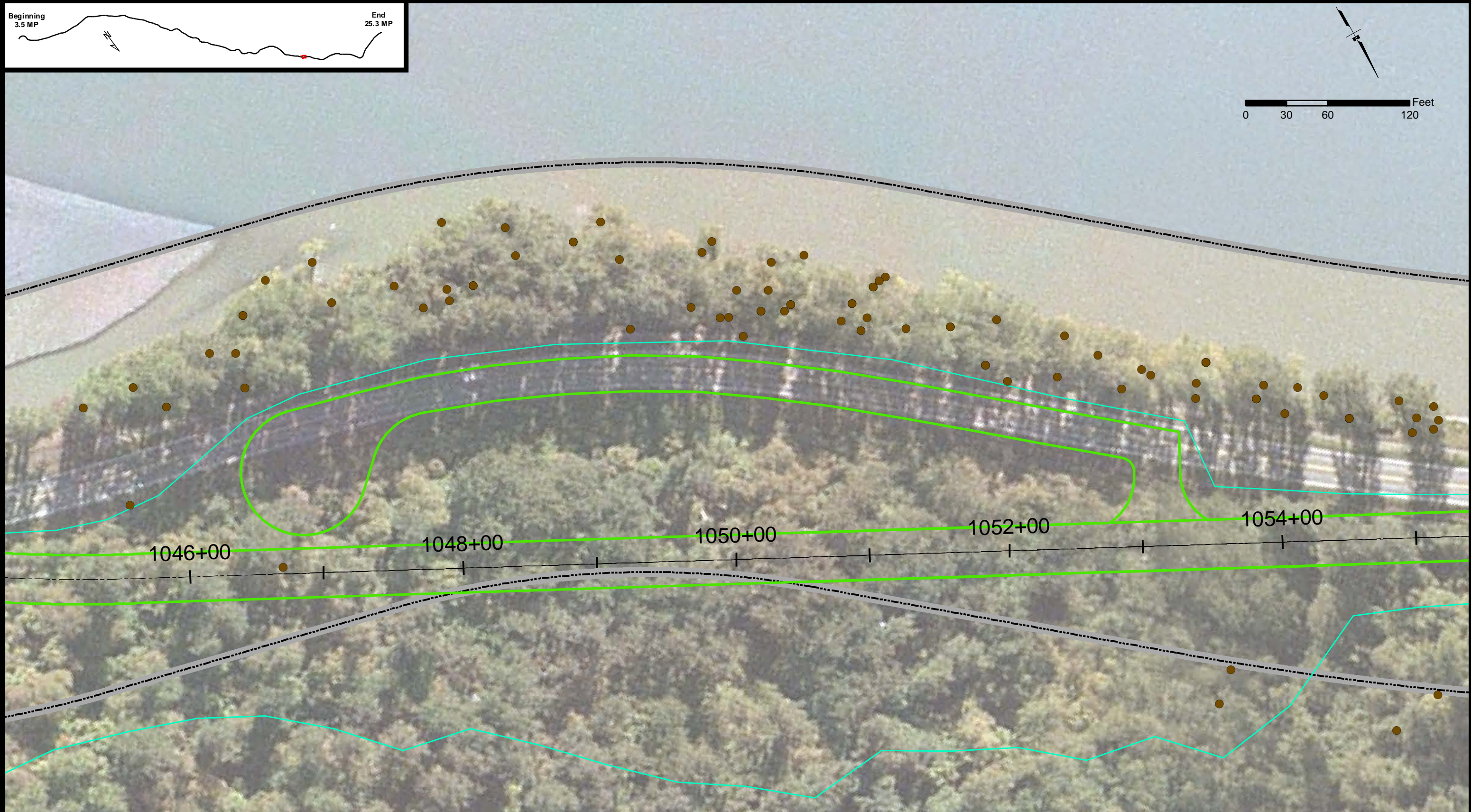
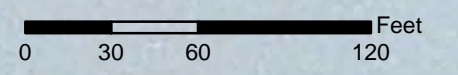


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DOT & PF Project No. 68606  
HAINES HIGHWAY  
MILEPOST 3.5 - 25.3  
Haines, Alaska

---

DATE: April 28, 2014 FIGURE 5





- Proposed Centerline
- Existing ROW
- Alaska Chilkat Bald Eagle Preserve
- Proposed Road with MP 20.5 Pullout
- Proposed Daylight Limits
- Bald Eagle Perch Sites (ABR 2013)

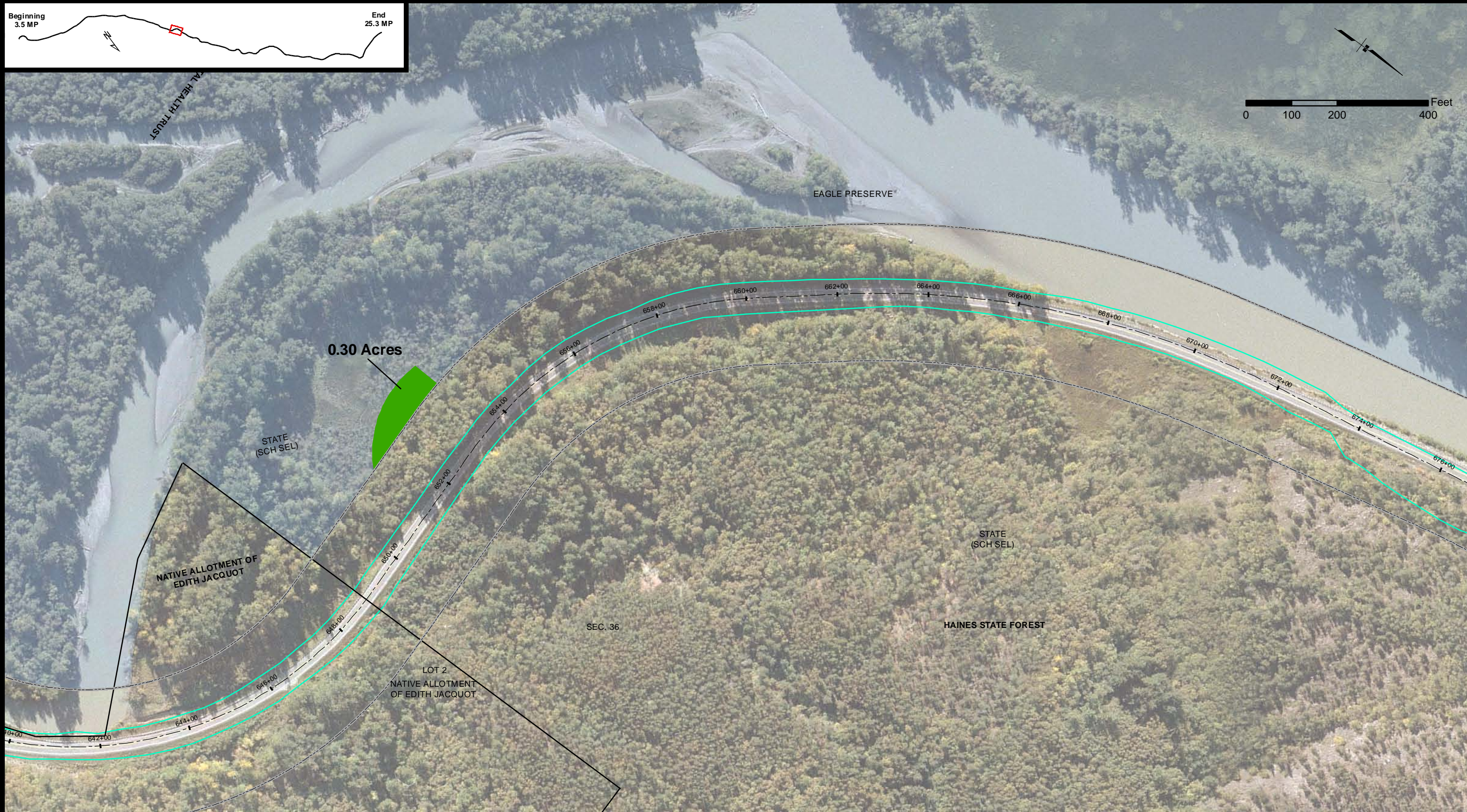
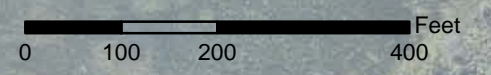
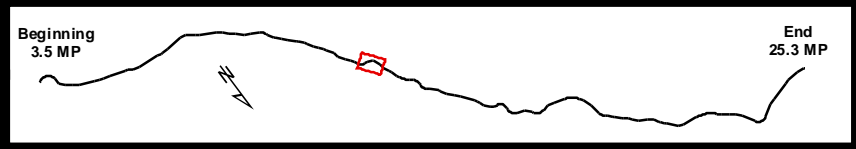
**Proposed New Public Access Turnout at MP 20.5**

TS 28/29/30 S, R 56/57/58/59 E,  
Copper River Meridian, Alaska  
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<b>STATE OF ALASKA</b> DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES	
DOT & PF Project No. 68606 HAINES HIGHWAY MILEPOST 3.5 - 25.3	
Haines, Alaska	
DATE: April 28, 2014	FIGURE 6





**4 (f) ROW Changes**

- Alaska Chilkat Bald Eagle Preserve (Preserve)
- Existing ROW to be allocated to Preserve
- Proposed ROW acquisition within Preserve
- Special Use Permit Area for Stream Mitigation in Preserve

- Proposed Centerline
- Existing ROW
- Proposed shift in ROW
- Eagle Nest *Eagle Nests 2012 Survey*
- Eagle Nest 330' Radius

Note: The stream mitigation is still in design for this centerline and is not shown in this map set.

**Mitigation Sites Proposed within the Preserve**

TS 28/29/30 S, R 56/57/58/59 E,  
Copper River Meridian, Alaska  
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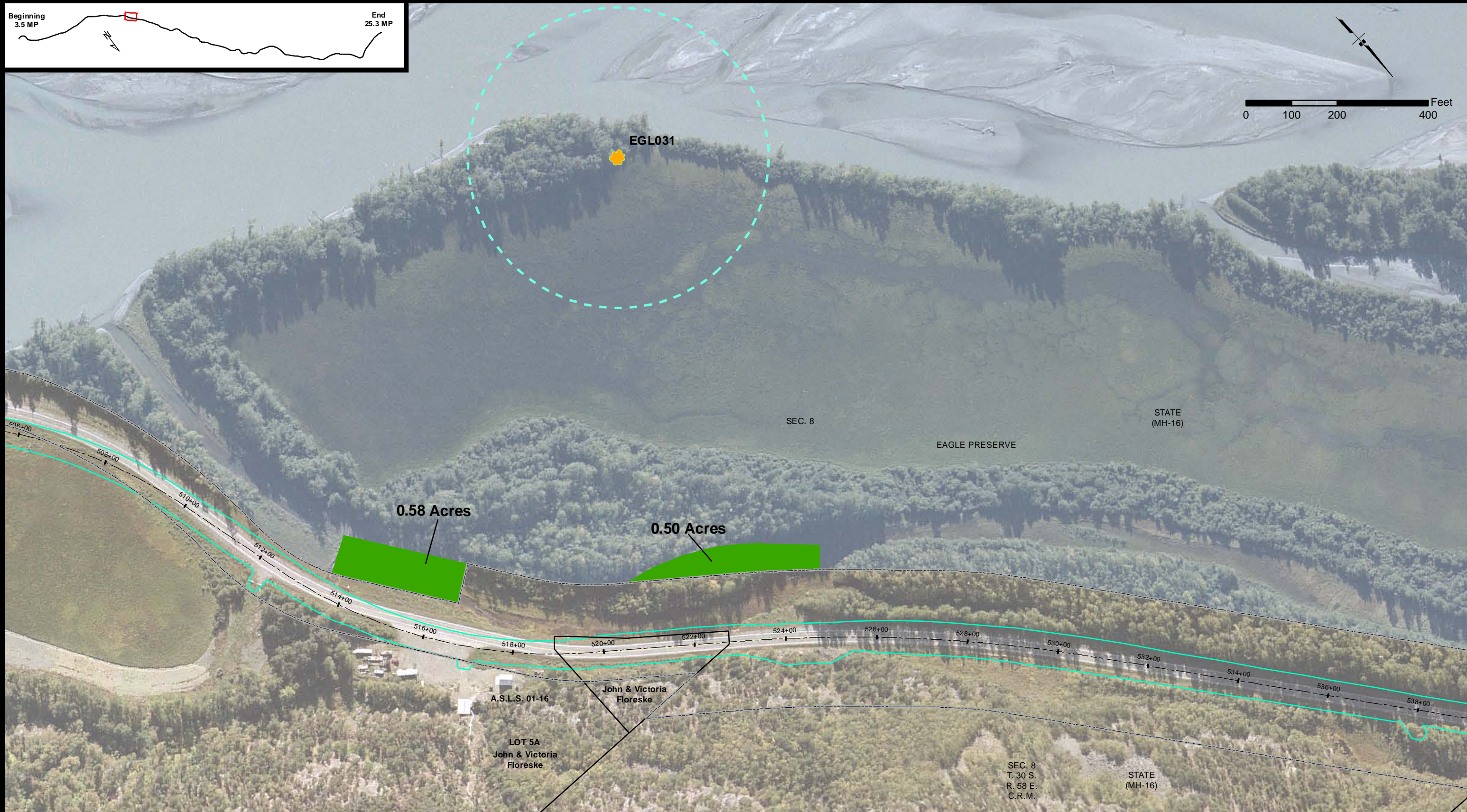
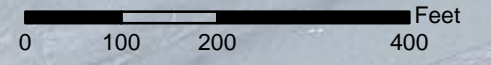
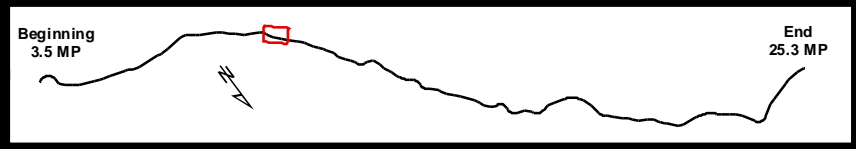
**STATE OF ALASKA**  
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DOT & PF Project No. 68606  
HAINES HIGHWAY  
MILEPOST 3.5 - 25.3

Haines, Alaska

DATE: April 28, 2014

FIGURE SET B (1 OF 3)





- 4 (f) ROW Changes**
- Alaska Chilkat Bald Eagle Preserve (Preserve)
  - Existing ROW to be allocated to Preserve
  - Proposed ROW acquisition within Preserve
  - Special Use Permit Area for Stream Mitigation in Preserve
  - Proposed Centerline
  - Existing ROW
  - Proposed shift in ROW
  - Eagle Nest *Eagle Nests 2012 Survey*
  - Eagle Nest 330' Radius
- Note: The stream mitigation is still in design for this centerline and is not shown in this map set.

**Mitigation Sites Proposed within the Preserve**

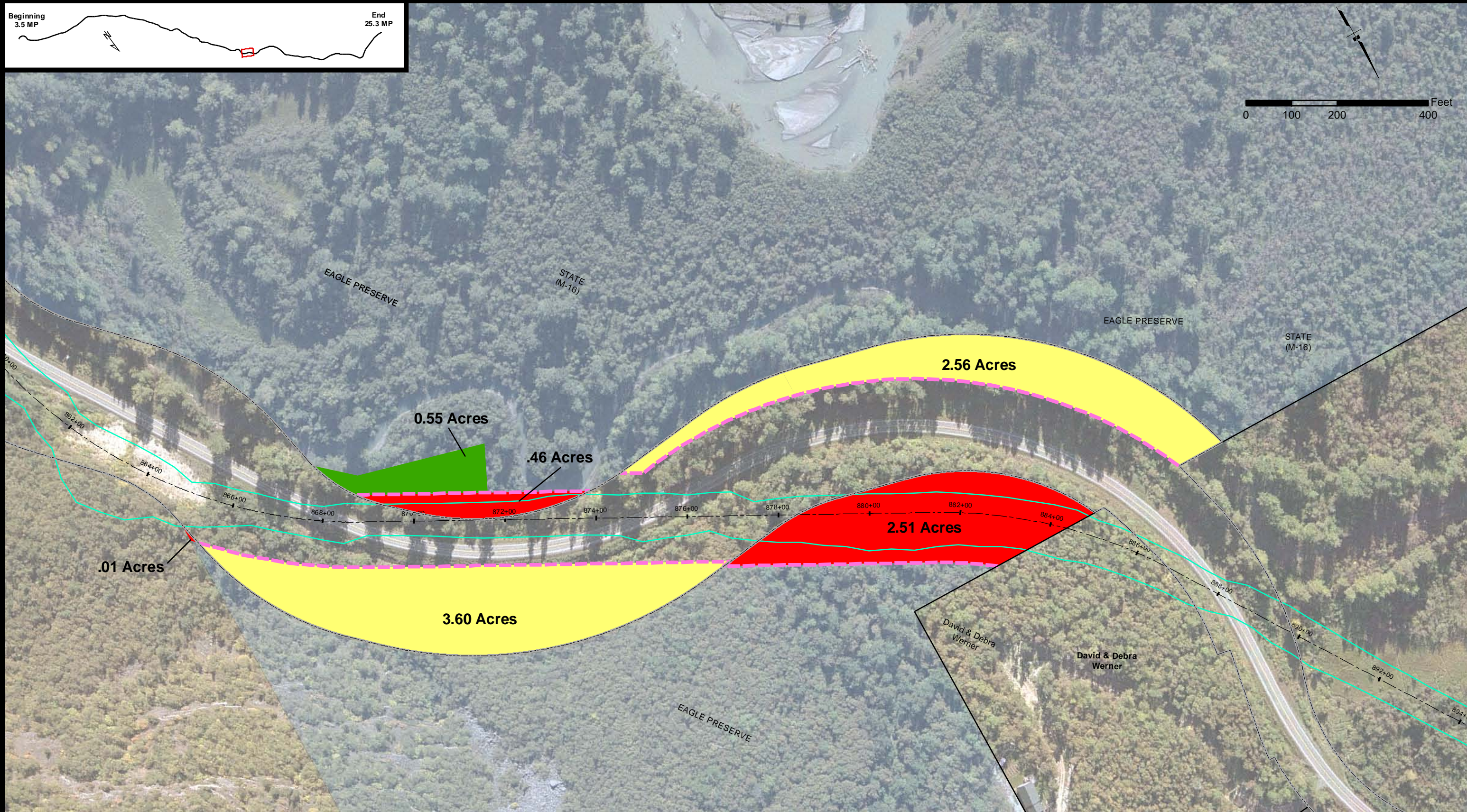
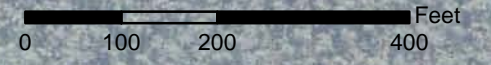
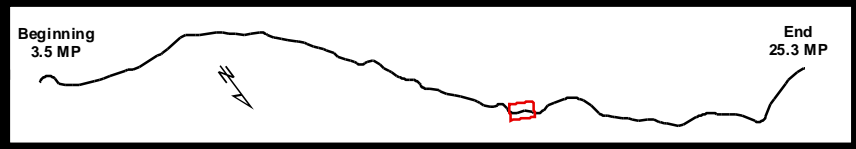
TS 28/29/30 S, R 56/57/58/59 E,  
Copper River Meridian, Alaska  
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**STATE OF ALASKA**  
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AND PUBLIC FACILITIES  
DOT & PF Project No. 68606  
HAINES HIGHWAY  
MILEPOST 3.5 - 25.3  
Haines, Alaska

DATE: April 28, 2014      FIGURE SET B (2 OF 3)





**4 (f) ROW Changes**

- Alaska Chilkat Bald Eagle Preserve (Preserve)
- Existing ROW to be allocated to Preserve
- Proposed ROW acquisition within Preserve
- Special Use Permit Area for Stream Mitigation in Preserve
- Proposed Centerline
- Existing ROW
- Proposed shift in ROW
- Eagle Nest *Eagle Nests 2012 Survey*
- Eagle Nest 330' Radius

Note: The stream mitigation is still in design for this centerline and is not shown in this map set.

**Mitigation Sites Proposed within the Preserve**

TS 28/29/30 S, R 56/57/58/59 E,  
Copper River Meridian, Alaska  
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DEPARTMENT OF TRANSPORTATION  
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HAINES HIGHWAY  
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FIGURE SET B (3 OF 3)



**SEE BALD EAGLE REPORTS FROM ABR IN APPENDIX G**

**Alaska Statutes – Article 06. Alaska Chilkat Bald Eagle Preserve**

## Article 06. ALASKA CHILKAT BALD EAGLE PRESERVE

Sec. 41.21.610. Purpose of AS 41.21.610 - 41.21.630.

(a) The purpose of AS 41.21.610 - 41.21.630 is to establish the state-owned land and water described in AS 41.21.611(b) as the Alaska Chilkat Bald Eagle Preserve as part of the state park system. The primary purpose for establishing the Alaska Chilkat Bald Eagle Preserve is to protect and perpetuate the Chilkat bald eagles and their essential habitats within the Alaska Chilkat Bald Eagle Preserve in recognition of their statewide, nationally, and internationally significant values in perpetuity. (b) The Alaska Chilkat Bald Eagle Preserve is also established to (1) protect and sustain the natural salmon spawning and rearing areas of the Chilkat River and Chilkoot River systems within the preserve in perpetuity; (2) provide continued opportunities for research, study and enjoyment of bald eagles and other wildlife; (3) ensure to the maximum extent practicable water quality and necessary water quantity under applicable laws; (4) provide for other public uses consistent with the primary purpose for which the Alaska Chilkat Bald Eagle Preserve is established; and (5) provide an opportunity for the continued traditional and natural resource based lifestyle of the people living in the general areas described in AS 41.21.611(b), consistent with the other purposes of this subsection and (a) of this section. (c) It is the intent of the legislature in enacting AS 41.21.610 - 41.21.630 to provide sufficient protection for the purposes for which the Alaska Chilkat Bald Eagle Preserve is established. Accordingly, the establishment of the Alaska Chilkat Bald Eagle Preserve and the Haines State Forest Resource Management Area under AS 41.15.305 is determined to represent a proper balance between the reservation of state public domain land and water for bald eagle preserve purposes and state public domain land and water more appropriate for multiple use. Therefore, the legislature determines that there is no need for legislation expanding or contracting the boundary of the Alaska Chilkat Bald Eagle Preserve in the future; the legislature further determines that study by a state agency of the expansion or contracting of the boundary of the preserve shall be conducted under AS 41.21.621. (d) Inasmuch as the area described in AS 41.21.611(b) exceeds 640 acres, AS 41.21.610 - 41.21.630 are intended to close the area to multiple use in conformity with AS 38.05.300 and the land is dedicated as a special purpose site under art. VIII, Sec. 7 of the state constitution.

Sec. 41.21.611. Alaska Chilkat Bald Eagle Preserve established.

(a) Subject to valid existing rights, the land and water presently owned by the state and all land and water acquired in the future by the state lying within the boundaries described in (b) of this section are designated the Alaska Chilkat Bald Eagle Preserve and assigned to the department for control, development, and maintenance. (b) Except for University of Alaska grant land, the land and water owned by the state and all land and water acquired by the state in the future lying within the following described parcels are designated as the Alaska Chilkat Bald Eagle Preserve: (1) Township 26 South, Range 55 East, Copper River Meridian Section 12: that portion within USS 3708 Section 13: that portion within USS 3708 Section 23: SE1/4NE1/4, NE1/4SE1/4, E1/2NW1/4SE1/4, S1/2SE1/4 Sections 24 and 25 Section 26: E1/2 Section 33: SE1/4SE1/4SE1/4 Section 34: E1/2NE1/4, E1/2SW1/4NE1/4, SE1/4NE1/4SW1/4, E1/2SW1/4SW1/4, SW1/4SW1/4SW1/4, SE1/4SW1/4, SE1/4 Section 35 Section 36: NE1/4NW1/4NE1/4, W1/2W1/2NE1/4, NW1/4, N1/2SW1/4, N1/2SW1/4SW1/4, SW1/4SW1/4SW1/4, NW1/4SE1/4SW1/4, NW1/4SE1/4; (2) Township 26 South, Range 56 East, Copper River Meridian Section 7: SW1/4NE1/4, that portion of the S1/2NW1/4 within USS 3708, S1/2 Section 8: SE1/4SW1/4NW1/4, SE1/4NW1/4, SW1/4, that portion of the S1/2NE1/4 within USS 3708 Section 17: W1/2NW1/4 Section 18 Section 19: W1/2, SW1/4SE1/4 Section 30: NE1/4NW1/4NE1/4, W1/2NW1/4NE1/4, NW1/4, W1/2SW1/4; (3) Township 27 South, Range 55 East, Copper River Meridian Section 2: NW1/4, W1/2NE1/4SW1/4, NW1/4SW1/4,

N1/2SW1/4SW1/4, SW1/4SW1/4SW1/4, NW1/4SE1/4SW1/4, except USS 3744 Section 3  
 Section 4: NE1/4NE1/4NE1/4, S1/2NE1/4NE1/4, E1/2SW1/4NE1/4, SE1/4NE1/4, E1/2SE1/4SW1/4,  
 SE1/4 Section 8: SE1/4SE1/4SW1/4, S1/2S1/2SE1/4, N1/2SE1/4SE1/4 Section 9: E1/2,  
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 Section 10: W1/2W1/2NE1/4, W1/2 Section 15: NW1/4NW1/4NE1/4, S1/2NW1/4NE1/4,  
 SW1/4NE1/4, W1/2, W1/2SE1/4 Section 16: E1/2, NW1/4, N1/2SW1/4, NW1/4SE1/4SW1/4,  
 E1/2SE1/4SW1/4 Section 17: N1/2NE1/4, NE1/4SW1/4NE1/4, SE1/4NE1/4, E1/2NE1/4NW1/4,  
 N1/2NE1/4SE1/4, SE1/4NE1/4SE1/4 Section 21: E1/2, E1/2E1/2NW1/4, SW1/4SE1/4NW1/4,  
 E1/2SW1/4, SE1/4SW1/4SW1/4 Section 22: SW1/4NE1/4NE1/4, W1/2E1/2, W1/2SE1/4NE1/4,  
 W1/2, W1/2E1/2SE1/4 Section 26: NW1/4NW1/4NW1/4, S1/2NW1/4NW1/4, SW1/4NW1/4,  
 W1/2E1/2SW1/4, W1/2SW1/4 Section 27 Section 28: E1/2, E1/2W1/2, E1/2W1/2W1/2  
 Section 33: N1/2NE1/4, E1/2SW1/4NE1/4, NW1/4SW1/4NE1/4, SE1/4NE1/4, E1/2NE1/4NW1/4,  
 NE1/4SE1/4, E1/2NW1/4SE1/4, N1/2SE1/4SE1/4, SE1/4SE1/4SE1/4 Section 34  
 Section 35: NW1/4NW1/4NE1/4, S1/2NW1/4NE1/4, SW1/4NE1/4, NW1/4SE1/4NE1/4,  
 S1/2SE1/4NE1/4, W1/2, SE1/4 Section 36: W1/2SW1/4SW1/4; (4) Township 28 South,  
 Range 55 East, Copper River Meridian Section 1: S1/2SW1/4NW1/4, SW1/4 Section 2  
 Section 3: NE1/4, N1/2NW1/4, N1/2SW1/4NW1/4, SE1/4NW1/4, NE1/4NE1/4SW1/4, N1/2SE1/4,  
 SE1/4SE1/4 Section 4: E1/2NE1/4NE1/4 Section 10: that portion of Mosquito Lake  
 within the NE1/4 Section 11: N1/2, N1/2SE1/4, NE1/4SW1/4SE1/4, SE1/4SE1/4, except USS  
 3431 Section 12 Section 13: E1/2, NE1/4NW1/4, E1/2NW1/4NW1/4,  
 NW1/4NW1/4NW1/4, NW1/4SE1/4NW1/4, E1/2SE1/4NW1/4 Section 19: Lot 13  
 Section 24: E1/2E1/2, NE1/4NW1/4NE1/4 Section 25: except that portion north of the Haines  
 Highway Section 26: that portion south of the Haines Highway except Lots 2, 3, and the  
 SW1/4SW1/4 Section 27: that portion south of the Haines Highway except S1/2S1/2  
 Section 28: except S1/2S1/2, the south 660 feet of Lots 5 - 7, and that portion north of the Haines  
 Highway Section 29: except S1/2S1/2S1/2, NE1/4SE1/4SE1/4, and Lots 9, 14, 15, and 18  
 Section 30: E1/2NE1/4, N1/2NE1/4SE1/4 Section 33: SE1/4SE1/4SE1/4 Section 34:  
 S1/2S1/2S1/2 Section 35: except NW1/4NE1/4, S1/2NE1/4, NW1/4, S1/2 Section 36:  
 except SW1/4NW1/4, S1/2, and the south 660 feet of Lots 3 - 4; (5) Township 28 South, Range 56  
 East, Copper River Meridian Section 7: SW1/4NW1/4NW1/4, SW1/4NW1/4,  
 SW1/4SE1/4NW1/4, W1/2NE1/4SW1/4, SE1/4NE1/4SW1/4, NW1/4SW1/4, S1/2SW1/4,  
 SW1/4SW1/4SE1/4 Section 17: W1/2SW1/4SW1/4, SE1/4SW1/4SW1/4 Section 18:  
 W1/2W1/2NE1/4, E1/2SW1/4NE1/4, SW1/4SE1/4NE1/4, W1/2, SE1/4 Section 19  
 Section 20: W1/2W1/2 Section 29: except USS 948, USS 991, Lots 1, 2, and 4 - 7, NE1/4,  
 E1/2NW1/4 Section 30: except Lots 1, 4, 5, 8, 15-17, and the NE1/4SW1/4 Section 31  
 Section 32: except USS 991, USS 2455, and Lots 1, 2, and 24 Section 33: S1/2 except USS 2455  
 and Lots 18 - 21 Section 34: W1/2SW1/4SE1/4, SE1/4SW1/4SE1/4, SW1/4 except NE1/4SW1/4  
 and Lots 1 and 2; (6) Township 28 South, Range 57 East, Copper River Meridian Section  
 22: NE1/4SW1/4, E1/2SE1/4SW1/4, W1/2NW1/4SE1/4, SW1/4SE1/4, NW1/4SE1/4SE1/4,  
 S1/2SE1/4SE1/4 Section 26: W1/2SW1/4NW1/4, W1/2W1/2SW1/4 Section 27:  
 E1/2E1/2, N1/2NW1/4NE1/4, SE1/4NW1/4NE1/4 Section 34: NE1/4NE1/4, NE1/4SE1/4NE1/4  
 Section 35: SW1/4SW1/4NE1/4, NW1/4NW1/4NW1/4, S1/2NW1/4NW1/4, S1/2NW1/4, E1/2SW1/4,  
 NW1/4NW1/4SE1/4, S1/2NW1/4SE1/4, S1/2SE1/4, SW1/4NE1/4SE1/4; (7) Township 29 South,  
 Range 55 East, Copper River Meridian Section 1: S1/2NE1/4NE1/4, E1/2SW1/4NE1/4,  
 N1/2SE1/4NE1/4, SW1/4SE1/4NE1/4, NW1/4NE1/4SE1/4, NE1/4NW1/4SE1/4; (8) Township 29  
 South, Range 56 East, Copper River Meridian Section 1 Section 2: N1/2NE1/4,  
 E1/2SE1/4NE1/4, NE1/4NW1/4, E1/2NE1/4SE1/4, NE1/4SE1/4SE1/4 Section 4: W1/2NW1/4,  
 W1/2SE1/4NW1/4, SE1/4SE1/4NW1/4, SW1/4, W1/2NW1/4SE1/4, SE1/4NW1/4SE1/4, SW1/4SE1/4,  
 W1/2SE1/4SE1/4, SE1/4SE1/4SE1/4 Section 5: E1/2, N1/2NW1/4, SE1/4NE1/4SW1/4,  
 E1/2SE1/4SW1/4 Section 6: N1/2N1/2NE1/4, NE1/4NW1/4, S1/2NW1/4NW1/4,  
 N1/2SW1/4NW1/4, NW1/4SE1/4NW1/4 Section 8: except SW1/4SW1/4 and S1/2SE1/4SW1/4



Section 9 Section 10: S1/2S1/2NE1/4, SW1/4NE1/4NW1/4, NW1/4NW1/4, S1/2NW1/4, S1/2  
Section 11: S1/2NE1/4, S1/2S1/2NW1/4, NE1/4SW1/4NW1/4, N1/2SE1/4NW1/4, S1/2 Sections  
12 - 14 Section 15: N1/2, N1/2N1/2SW1/4, E1/2SE1/4, NW1/4SE1/4, E1/2SW1/4SE1/4  
Section 16: E1/2NE1/4, E1/2W1/2NE1/4, W1/2NW1/4NE1/4, NW1/4SW1/4NE1/4, N1/2N1/2NW1/4,  
SE1/4NE1/4NW1/4, NE1/4SE1/4NW1/4 Section 17: N1/2NE1/4NE1/4 Section 22:  
N1/2NE1/4NE1/4, NE1/4NW1/4NE1/4 Section 23: that portion of the N1/2NW1/4 lying west of  
Chilkat Lake; (9) Township 29 South, Range 57 East, Copper River Meridian Section 4:  
NW1/4NW1/4SW1/4, S1/2NW1/4SW1/4, SW1/4SW1/4, NW1/4SE1/4SW1/4, S1/2SE1/4SW1/4  
Section 5: except Lots 2 - 4, N1/2NE1/4, NE1/4SE1/4NE1/4 Section 6: except Lots 1 and 9  
Sections 7 and 8 USS 907 Section 9: W1/2W1/2NE1/4, SE1/4SW1/4NE1/4,  
SW1/4SE1/4NE1/4, NW1/4, S1/2 Section 10: Lots 1 - 4, W1/2NE1/4SW1/4,  
NW1/4SE1/4SW1/4, E1/2SW1/4SE1/4SW1/4 Section 14: that portion west of the Haines  
Highway Section 15: except NE1/4NE1/4 and Lots 7 - 10, 13 - 14 Sections 16 - 18  
USS 786 Section 19: NE1/4NE1/4NE1/4 Section 20: NE1/4, E1/2NW1/4,  
NW1/4NW1/4, E1/2SW1/4NW1/4, NE1/4SE1/4, N1/2NW1/4SE1/4, SE1/4NW1/4SE1/4,  
NE1/4SE1/4SE1/4 Sections 21 and 22 Section 23: that portion west of the Haines  
Highway Section 25: that portion west of the Haines Highway Section 26: that portion  
west of the Haines Highway Section 27 Section 28: NE1/4, NE1/4NW1/4,  
N1/2NW1/4NW1/4, N1/2SE1/4NW1/4, NE1/4SE1/4, N1/2NW1/4SE1/4, SE1/4NW1/4SE1/4,  
NE1/4SE1/4SE1/4 Section 34: NE1/4, NE1/4NW1/4, NE1/4SE1/4NW1/4, NE1/4SE1/4,  
NE1/4NW1/4SE1/4, E1/2SE1/4SE1/4 Section 35 Section 36: that portion west of the  
Haines Highway; (10) Township 29 South, Range 58 East, Copper River Meridian Section  
3: S1/2SW1/4NW1/4, SW1/4NE1/4SW1/4, W1/2SW1/4, SE1/4SW1/4, S1/2SW1/4SE1/4  
Section 4: SW1/4NE1/4NE1/4, W1/2NE1/4, SE1/4NE1/4, NW1/4, NE1/4SW1/4, SE1/4 Section  
9: NE1/4NE1/4 Section 10: N1/2, E1/2SW1/4, E1/2W1/2SW1/4, NW1/4NW1/4SW1/4, SE1/4  
Section 31: that portion south of the Haines Highway; (11) Township 30 South, Range 57 East,  
Copper River Meridian Section 1 Section 2: NE1/4, NE1/4NW1/4, N1/2NW1/4NW1/4,  
SE1/4NW1/4NW1/4, N1/2SE1/4NW1/4, SE1/4SE1/4NW1/4, N1/2SE1/4, N1/2SE1/4SE1/4  
Section 3: NE1/4NE1/4NE1/4 Section 12: NE1/4, NE1/4NW1/4, NE1/4NW1/4NW1/4,  
NE1/4SE1/4NW1/4, W1/2NE1/4SE1/4, NE1/4NW1/4SE1/4, E1/2E1/2SE1/4, NW1/4SE1/4SE1/4;  
(12) Township 30 South, Range 58 East, Copper River Meridian Section 6: that portion west of  
the Haines Highway Section 7: that portion west of the Haines Highway Section 8: that  
portion west of the Haines Highway Section 16: that portion west of the Haines Highway  
Section 17: that portion west of the Haines Highway Section 18: Lots 1 - 3 and 5, SW1/4NE1/4,  
N1/2SE1/4NW1/4, SE1/4SE1/4NW1/4, SE1/4.

Sec. 41.21.612. Land excluded.

(a) Private land, approved or pending Native allotments, pending and approved land selections made by the Haines Borough under state law on July 1, 1982, University of Alaska grant land not located within the Chilkat River Critical Habitat Area established by AS 16.20.585, and existing transportation and utility corridors located partially or completely within the Alaska Chilkat Bald Eagle Preserve are excluded from the Alaska Chilkat Bald Eagle Preserve. (b) University of Alaska grant land located within the boundary of the Chilkat River Critical Habitat Area established under AS 16.20.585 is excluded from the Alaska Chilkat Bald Eagle Preserve.

Sec. 41.21.613. Eminent domain prohibited.

The commissioner may not acquire private land or University of Alaska grant land located partially or completely within the Alaska Chilkat Bald Eagle Preserve by eminent domain for any purpose.

Sec. 41.21.614. Native allotments.

Approved or pending Native allotments located partially or completely within the Alaska Chilkat Bald Eagle Preserve are not adversely affected by the establishment of the Alaska Chilkat Bald Eagle Preserve and all approved allotments and all pending allotments located partially or completely within the preserve shall be treated as private land.

Sec. 41.21.615. Fish and game management.

The Department of Fish and Game is responsible for the management of fish and game resources in the Alaska Chilkat Bald Eagle Preserve (1) under applicable law and consistent with the purposes of AS 41.21.610 - 41.21.630; (2) subject to the authority of the Secretary of the Interior to permit the taking of bald eagles for the religious purposes of an Indian tribe under 16 U.S.C. 668a (Sec. 2, Bald Eagle Protection Act).

Sec. 41.21.616. Regulations.

The department shall consult with the Department of Fish and Game, the United States Fish and Wildlife Service, a local governing body of a municipality, any local fish and game advisory committees, and the Alaska Chilkat Bald Eagle Preserve Advisory Council established by AS 41.21.625 before adoption of reasonable regulations governing public use and protection of the Alaska Chilkat Bald Eagle Preserve. The Department of Fish and Game shall consult with the department and the Alaska Chilkat Bald Eagle Preserve Advisory Council in proposing regulations governing fish and game management in the Alaska Chilkat Bald Eagle Preserve for adoption by the Board of Fisheries or the Board of Game. The Department of Fish and Game and the department shall cooperate with the United States Fish and Wildlife Service in its administration of federal law governing the conservation of bald eagles.

Sec. 41.21.617. Other uses generally.

The state land and water described in AS 41.21.611(b) is closed to mineral entry under AS 38.05.135 - 38.05.275, to commercial harvest of timber, and to sale under state land disposal laws. The commissioner may lease the land described in AS 41.21.611(b) under AS 38.05.070 - 38.05.105 for a purpose consistent with AS 41.21.610(a) and (b). A municipality may select land within the Alaska Chilkat Bald Eagle Preserve under law.

Sec. 41.21.618. Traditional uses.

Continued opportunities for traditional uses of the Alaska Chilkat Bald Eagle Preserve at levels and by methods and means that are compatible with the protection of the bald eagle population are guaranteed. These historically compatible uses include but are not limited to hunting, trapping, fishing, berry picking, other subsistence and recreational uses, operation of motorized vehicles, and the harvesting of personal-use firewood. The level and method or means of traditional use may continue subject to reasonable regulation unless the director of the division of parks of the department, after consultation with the Alaska Chilkat Bald Eagle Preserve Advisory Council, makes a finding that the level or method and means of use is causing significant resource damage that is inconsistent with AS 41.21.610(a) and (b). The director of the division of parks shall hold a public hearing in Haines and Klukwan before restricting a traditional use permitted under this section.

Sec. 41.21.619. Access and rights-of-way.

If privately owned land, University of Alaska grant land, a valid mining right, an existing mineral lease, a subsurface right on private land, or other valid occupancy is surrounded by state land of the Alaska Chilkat Bald Eagle Preserve or if privately owned land, University of Alaska grant land, federal land,

municipal land, or state land not described in AS 41.21.611(b), a valid mining claim, subsurface right, or other valid occupancy on land not described in AS 41.21.611(b) does not have reasonable, timely, and economically feasible access and egress by means other than crossing land designated as Alaska Chilkat Bald Eagle Preserve land in AS 41.21.611(b), the director of the division of parks shall grant a private landowner, the University of Alaska, a holder of a valid existing right to land, or a state agency, municipality, or federal agency the rights necessary to assure reasonable, timely, and economically feasible access and egress. A permittee or licensee of an owner of land or the holder of a valid existing right to land may use access and egress granted under this subsection. The rights of access and egress granted under this subsection are subject to reasonable regulation and stipulations established by the director of the division of parks after consulting with the Alaska Chilkat Bald Eagle Preserve Advisory Council to protect the purposes and values of the Alaska Chilkat Bald Eagle Preserve and to minimize adverse environmental impacts in the preserve. As used in this subsection, "valid existing right" includes but is not limited to a valid mining right, an existing mineral right, and a subsurface right. The director of the division of parks shall give favorable consideration to applications for utility rights-of-way that are compatible with AS 41.21.610(a) and (b).

#### Sec. 41.21.620. Management plan.

(a) The director of the division of parks and the Alaska Chilkat Bald Eagle Advisory Council established under AS 41.21.625, in written consultation with the United States Fish and Wildlife Service, the Department of Fish and Game, the Chilkat Indian Village, the Chilkoot Indian Association, and other appropriate groups, may use information gained through cooperative resource studies in the development of the management plan for the Alaska Chilkat Bald Eagle Preserve and in decisions affecting the management and administration of the preserve. The director of the division of parks and the advisory council shall investigate the need for additional research to increase the knowledge and understanding of the natural and cultural resources of the area and to enhance the effective management of the Alaska Chilkat Bald Eagle Preserve. (b) The director of the division of parks and the director of the division of forestry shall consult in the preparation of the management plan prepared under (a) of this section to promote effective, efficient, and coordinated administration of the Haines State Forest Resource Management Area and the Alaska Chilkat Bald Eagle Preserve for the purposes and values for which each is established.

#### Sec. 41.21.621. Additions or deletions to preserve.

An agency of the state may not participate or cooperate with a federal or private study considering additions to or deletions from the area of the Alaska Chilkat Bald Eagle Preserve without giving 90 days' prior notice to the Alaska Chilkat Bald Eagle Preserve Advisory Council. The director of the division of parks may waive the notice required by this subsection on the director's determination in writing to the advisory council that an emergency necessitates immediate study or a shorter period of notice to the advisory council.

#### Sec. 41.21.622. Historical, cultural and burial sites.

Historical, cultural, and burial sites identified in the Alaska Chilkat Bald Eagle Preserve management plan are not available for surface disposal under AS 41.21.617 and shall be managed by the director of the division of parks to prevent vandalism, destruction, and desecration.

#### Sec. 41.21.625. Alaska Chilkat Bald Eagle Preserve Advisory Council.

(a) A 12-member Alaska Chilkat Bald Eagle Preserve Advisory Council is established. The members of the advisory council shall be selected under this section. (b) The governor shall appoint individuals to

the Alaska Chilkat Bald Eagle Preserve Advisory Council representing the following interests for a two-year term: (1) a resident of the Haines Borough representing a conservation organization; (2) a representative of the United States Fish and Wildlife Service; and (3) a member of the Upper Lynn Canal fish and game advisory committee. (c) The mayor of the Haines Borough, the president of Klukwan, Inc., the chair of the Council of the Chilkat Indian Village, and the chair of the Chilkoot Indian Association are ex officio members of the Alaska Chilkat Bald Eagle Preserve Advisory Council. A member of the Haines Borough Assembly who has been selected by the Haines Borough Assembly is also an ex officio member of the advisory council. For this selection, preference shall be given to those members of the Haines Borough Assembly who do not also sit on boards that are already represented on the advisory council. The mayor of the Haines Borough may recommend to the governor for appointment to the advisory council the name of a resident of the Haines Borough for the representation of commercial or industrial interests. (d) The commissioner of fish and game, the director of the division of parks, and the director of the division of forestry, or their designees, serve ex officio as members of the Alaska Chilkat Bald Eagle Preserve Advisory Council. (e) The Alaska Chilkat Bald Eagle Preserve Advisory Council shall assist the department in the development and monitoring of a management plan for the Alaska Chilkat Bald Eagle Preserve. The management plan shall be presented at public hearings in Haines and Klukwan before approval and implementation by the department. (f) Members of the Alaska Chilkat Bald Eagle Preserve Advisory Council selected under (b) - (d) of this section may select alternates to act as members of the advisory council in their absence.

#### Sec. 41.21.630. Existing rights.

The establishment of the Alaska Chilkat Bald Eagle Preserve under AS 41.21.610 - 41.21.630 does not enlarge, diminish, add to, or waive a requirement of law otherwise applicable to the management or use of the state land of the Haines State Forest Resource Management Area (AS 41.15.300 - 41.15.330) or private land. An activity allowed under law on land not described in AS 41.21.611(b), including but not limited to an activity described in AS 41.21.618, timber harvest, mining, resource development, and recreation, is permitted so long as the activity is conducted in compliance with law.

COOPERATIVE AGREEMENT  
between the  
ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES  
and the  
ALASKA DEPARTMENT OF NATURAL RESOURCES

This cooperative agreement is designed to assist the agencies in cooperatively developing and managing the road system in and adjacent to the Alaska Chilkat Bald Eagle Preserve.

Whereas, the Alaska Department of Transportation and Public Facilities (DOT&PF) is mandated to manage the existing transportation corridor (the Haines Highway) within and adjacent to the Alaska Chilkat Bald Eagle Preserve; and

Whereas, both the Alaska Department of Natural Resources (ADNR) and DOT&PF have a mutual responsibility to efficiently and cooperatively manage their adjacent lands;

NOW, THEREFORE, the parties hereto agree as follows:

ALASKA DEPARTMENT OF NATURAL RESOURCES:

1. To recognize DOT&PF management authority for the right-of-way within and adjacent to the Alaska Chilkat Bald Eagle Preserve and work with DOT&PF to assure compatible management of the corridor.
2. To apply for necessary encroachment permits for any activity on DOT&PF right-of-ways.
3. To review projects that affect alignment of the Haines Highway within or adjacent to the Alaska Chilkat Bald Eagle Preserve and provide recommendations.
4. To review plans for the establishment of Haines Highway pullouts within or adjacent to the Alaska Chilkat Bald Eagle Preserve and approve the location, size, configuration, and contents where ADNR funds or maintenance responsibilities are involved.
5. To clean and maintain toilet and waste facilities, and provide for trash and sewage removal as needed at pullouts designated by ADNR located within or adjacent to the Alaska Chilkat Bald Eagle Preserve.
6. To assist DOT&PF in the enforcement of trespass and other violations within the Haines Highway right-of-way as requested by DOT&PF and/or the Alaska Department of Public Safety.

## COOPERATIVE AGREEMENT

7. To review DOT&PF proposals for gravel permits and erosion control devices and to provide recommendations.
8. To review DOT&PF vegetation management practices for the Haines Highway Corridor adjacent to the Alaska Chilkat Bald Eagle Preserve.
9. To review DOT&PF proposals for placement of signs in the Haines Highway Corridor which are intended to facilitate use of the Alaska Chilkat Bald Eagle Preserve.
10. To apply to DOT&PF for any air space assignment determined necessary by ADNR.

### ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES:

1. To provide technical assistance to ADNR in the establishment and creation of pullouts along the Haines Highway within or adjacent to the Alaska Chilkat Bald Eagle Preserve.
2. To review highway pullout plans for the Haines Highway and approve the location, size, configuration, and contents.
3. To grade and provide replacement surfacing material and clear snow from designated highway pullouts as determined by DOT&PF and ADNR within or adjacent to the Alaska Chilkat Bald Eagle Preserve.
4. Remove and dispose of slide material as determined appropriate by DOT&PF. If disposal within the preserve is determined to be necessary, all appropriate permits must be obtained including an incompatible use permit from ADNR.
5. To provide ADNR a map showing widths of highway right-of-ways for the Haines Highway adjacent to the Alaska Chilkat Bald Eagle Preserve.
6. To assign ADNR the management responsibility for guides and outfitters for the Haines Highway Corridor adjacent to the Alaska Chilkat Bald Eagle Preserve.
7. To provide the location of survey markers to ADNR as needed for location of highway pullouts or highway alignment.
8. To apply for all necessary permits including incompatible use permits for the removal of gravel, rip rap, or other materials for road maintenance.

COOPERATIVE AGREEMENT

9. To submit to ADNR plans for any unpermitted gravel pits, or erosion control devices, and to obtain all necessary permits including incompatible use permits for work proposed within the Alaska Chilkat Bald Eagle Preserve.
10. To submit to ADNR for review vegetation management practices for the Haines Highway Corridor adjacent to Alaska Chilkat Bald Eagle Preserve.
11. To submit to ADNR for review signs proposed in the Haines Highway Corridor which are intended to facilitate use of the Alaska Chilkat Bald Eagle Preserve.

THE DEPARTMENT OF NATURAL RESOURCES AND  
THE DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES  
MUTUALLY AGREE:

1. Nothing in the cooperative agreement shall obligate any party in expenditure of funds, or by future payments of money, in excess of appropriations authorized by law.
2. Each party agrees that it will be responsible for its own acts and the results thereof; and each party shall not be responsible for the acts of the other party; and each party agrees it will assume to self the risk and liability resulting in any manner under the agreement.
3. Each party will comply with all applicable laws, regulations, and executive orders relative to equal employment opportunity.
4. Nothing herein is intended to conflict with federal, state, or local laws or regulations. If there are conflicts, the laws and regulations shall prevail, and this agreement will be amended at first opportunity to bring it into conformance with conflicting laws or regulations.
5. Either the ADNR or DOT&PF may terminate its participation in this cooperative agreement by providing to the other party notice in writing sixty days in advance of the date on which its termination becomes effective.
6. Amendments to this agreement may be proposed by either agency and shall become effective upon approval of both parties.
7. The effective date of this agreement shall be from the date of final signatures.

COOPERATIVE AGREEMENT

The parties have executed this agreement as of:

10/27/87  
Date

Mark S. Hickey  
Mark S. Hickey  
Commissioner  
Alaska Department of Transportation  
and Public Facilities

11/8/87  
Date

Judith M. Brady  
Judith M. Brady  
Commissioner  
Alaska Department of Natural Resources



**Chilkat River Bridge Documentation for Programmatic Section 4(f) for  
Use of Historic Bridges**



## CULTURAL RESOURCE CONSULTANTS LLC

3504 East 67th Avenue  
Anchorage, Alaska 99507  
(907) 349-3445

August 9, 2010  
Revised September 28, 2015

To: Kristen J. Hansen, Senior Environmental Planner, DOWL HKM  
From: Michael Yarborough, Senior Archeologist  
Re: Chilkat River Bridge

Here are the comments of CRC's industrial archeologist Lawrence Mishkar on the relative effects of widening the Chilkat River Bridge versus adding a new, single lane bridge next to the existing structure.

The Alaska Department of Transportation & Public Facilities (DOT&PF) has set forth two options for possible construction at this site:

1. Widening the existing 1958 steel girder bridge for future traffic needs;
2. Building an entirely new structure and converting the historic bridge to single lane.

Historically, four bridges have carried people and goods across this river near this location, known as "Welles" and "Jacquot's Landing." The first timber trestle bridge was south of the current crossing location. Some of its piles are still visible in the river channel. The current steel and concrete bridge is the third highway bridge constructed at its site.

During the first half of the twentieth century, the time period of the second and third bridge crossings at this locale, remnants of these two timber trestles were visible to the general public. Old pilings and bents presented passersby with a sense of history, illustrating changes in bridge designs and the reconstruction of certain sections destroyed by flooding. In this respect, there has always been a historic record of previous bridges across the Chilkat River.

Even today, pilings and bent components--the remains of the first timber trestle carrying the Dawson Highway and the last timber trestle built here in 1943—remind the public of this historic crossing. A few sets of bents stand upright next to the highway to show the location of the earlier approach from the north as well.

CRC recommended the existing, 1958 bridge as eligible for the National Register because of its unaltered condition. Widening of the bridge deck and changing the concrete abutments, required for a wider deck, would adversely affect the bridge's integrity. The bridge, in its entirety,

communicates the traffic requirements and design principals of a time period. It reflects the level of understanding bridge engineers had concerning safety requirements and construction techniques. Alterations to this bridge would forever change this message. While it is possible that the new construction would not greatly change the profile of the bridge, it is not the profile that the general viewing public sees; it is the bridge deck itself, its width and its plan view.

The addition of an entirely new structure next to the current bridge could adversely affect the current bridge's integrity of setting. However, the development would be another bridge, not some structure unrelated to the crossing of the river. And, as outlined above, the remains of former bridges have been, and are currently still, in situ at this location.

It is CRC's opinion that the construction of a new bridge next to the current bridge would not adversely affect the eligibility of the 1958 structure. However, any alteration or rehabilitation of the bridge to address structural deficiencies would affect the historic integrity of the bridge.

**Recommendation for Determination of Eligibility  
for the Chilkat River Bridge (SKG-247)**

Appendix H of Cultural Resource Consultants Report, *Archeological Field Survey  
Of Proposed Alternatives for the Improvement of the Haines Highway from Milepost 3.5 to 25.3  
(DOT&PF Project Number 68606)  
October 2011*

*Appendix H*  
*Documentation for Determination of Eligibility*  
*for the Chilkat River Bridge (SKG-247)*

*Introduction*

The Chilkat River Bridge (SKG-247) is located at the crossing of the Chilkat River on the Haines Highway in Section 29 of Township 28S, Range 56E, of the Copper River Meridian (Latitude/Longitude 59°24'54.87" N, Longitude 135°55'56.11" W). It can be found on the USGS Quad Map Skagway B-3 (Figure H-1). The Alaska Department of Transportation and Public Facilities (DOT&PF) identifies this as Bridge No. 0742. Historical information on this bridge can be found on the Alaska Historic Resources Survey (AHRS) for SKG-00247.

*Historic Context*

In 1893, after receiving permission from the Chilkat Tlingit, Jack Dalton developed the Dalton Trail—a toll trail—from Pyramid Harbor, on the western side of the Chilkat River, to the interior gold fields. In 1904, because of the large amount of traffic along the trail, the Alaska Road Commission (ARC) began construction of a wagon road—Road No. 3—from Haines through Klukwan and Wells to the gold mining areas of Porcupine and Pleasant Camp. With the completion of this new road in 1908, the Dalton Trail fell into disuse (Gibson et al. 1980:110). In 1943, construction of the Haines Highway bypassed the section of wagon road from Klukwan to Wells. The new highway was built by the U. S. Army and connected Haines with the Alaska Highway at Haines Junction (Alaska Department of Highways 1971:4; Sheldon Museum and Cultural Center 2006).

*Dalton Trail Timber Trestle Bridge*

Historically, three timber trestle bridges have carried people and goods across the Chilkat River at or near the location known historically as “Wells” and “Jacquot's Landing.” The first (SKG-547), along the Dalton Trail, crossed the river about one half mile downstream from the current Haines Highway. Stumps of the old timber piles remain visible in the river (Figure H-2).

*Early Wells Bridge History*

The ARC built a new timber trestle bridge north of the Dalton Trail in 1909 (SKG-548). According to Buzzell (2007:48), “[t]he ARC built and repaired bridges on numerous trails and wagon roads that served as feeders to railroads and ports.” This trestle was approximately 23 feet upstream from the current Haines Highway bridge. It was composed of more than 300 feet of trestlework and two, 100-foot long timber through truss Howe spans. In 1916, the ARC replaced a section of flood-damaged trestle with a 60-foot king-post timber span (Figure H-3).

After the construction of the king-post span, the length of trestlework decreased somewhat, but was most likely longer than today’s bridge, as the north end of the trestle curved sharply upstream on descending trestlework as it neared the riverbank, then tied into the shore near a



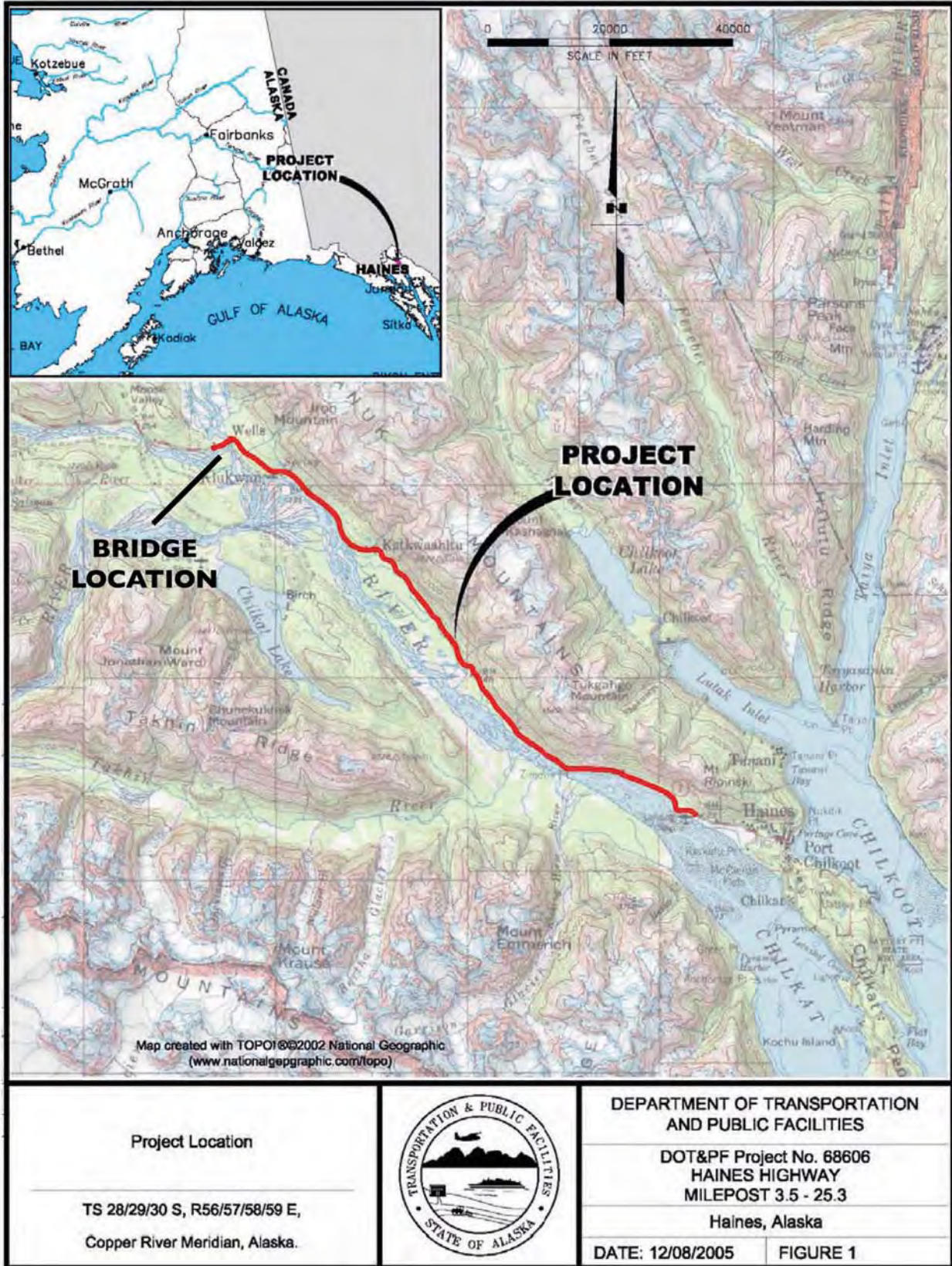


Figure H-1. Location map for the Haines Highway project showing the site of the Chilkat River Bridge.





Figure H-2. Old piles in the Chilkat River marking the former location of Dalton Trail trestle (SKG-547), downstream from the current bridge.



Figure H-3. King-post span installed on the first Wells trestle (SKG-548).

small building, boat dock, and landing. Today, a large cottonwood tree marks the location. No explanation for this curve has been found, but it may be that an already standing structure was in line with the highway's proposed right-of-way, forcing the highway alignment to go upstream (Figure H-4). The south approach of the bridge at Wells left the riverbank at a typical 90-degree angle. A few remaining trestle bents are in situ along the Haines Highway north of the river, as the old right of way slowly merges into the present day right of way (Figure H-5).

The bridge had a wood planked driving deck laid perpendicular to the stringers. A large timber bull rail and wood railings delineated the edge of the bridge deck and provided some degree of





Figure H-4. Northern end of the first Wells trestle showing the curve at the northern bank of the river.



Figure H-5. Remains of timber trestle bents from the first bridge crossing at Wells (SKG-548).



safety for both vehicles and pedestrians (Figure H-6). Signboards hung from each end of the through truss spans' portal bracing.

Detailed information about this bridge is limited, with only a few surviving photographs showing the main design features of this bridge. A few of the sway braces (Figure H-7) and wood pilings are still visible in the river upstream from the north end of the current bridge, marking the location of this bridge.

A 1918 flood damaged the bridge and the ARC deemed it unsafe for travel (Buzzell 2007:57). However, because of a holdover lack of funding from World War I, it was not until 1924 that the bridge was either repaired or replaced by a combined effort of the Bureau of Public Roads and the Alaska Territory. This may be when both 100-foot long through truss Howe spans and the lone king-post span were replaced with trestlework. A 1943 photograph of the future trestle across the Chilkat River shows the bridge without the Howe or king-post spans (Figure H-8).

In 1943, ARC built a new timber trestle bridge (SKG-549) to replace the 1924 bridge. This was the first two-lane bridge over the Chilkat River on the Haines Highway. A hand-drawn DOT&PF plan shows it as a basic timber trestle for the entire crossing (Figure H-9). This bridge was about 23 feet down river from the earlier bridge. A few old piles from the 1943 bridge remain in situ under the south approach of the current bridge (Figure H-10). It was a straightforward timber trestle bridge, with timber bents supporting timber stringers and a wood planked driving deck. Unlike the previous bridge, this one contained no through truss or king-post spans.

#### *Current Chilkat River Bridge Description*

The Alaska Road Commission erected the current Chilkat River Bridge in 1958 in the same right-of-way as the previous timber trestle bridge (Figures H-11 and



Figure H-6. Vehicle on the first Wells Bridge showing the through truss Howe spans.



Figure H-7. Sway braces in the the Chilkat River at the location of the first Wells trestle.

H-12). It is a 10-span steel girder bridge on concrete piers and abutments. Overall, the bridge is 504 feet long with a 24-foot wide deck.

The cast-in-place, reinforced concrete roadway is supported by four steel stringers placed in parallel under the entire length of the bridge. The roadway crown is approximately two inches higher in the center of the road than the outside edge (Figure H-13). Additional stiffening plates welded to the bottom center of the stringers have increased the load rating of the steel girders but no date for this work has been found. Bolted to the stringers are lateral braces made from large channel sections, spaced nine per span (three per row of stringers). Short pieces of channel are also bolted to the outer stringer along the entire length of the bridge to support the concrete curb and steel safety railing (Figure H-14). Impressions left on the underside of the outer edge of the bridge deck show that shiplap boards were placed perpendicular to the boards used to form the main section of the roadway.

The steel spans are comprised of a steel girder and floor beam system that is anchored to the piers and abutments with steel girder shoes. A Kaiser Steel plant in California fabricated the structural steel and steel bridge railings. Kaiser was a major supplier of steel to the Pacific Coast markets in the 1950s. All of the stringer connections are bolted. The steel stringers originally were painted with red lead. Where newer aluminum paint has peeled, the red lead is visible. The bridge railings are painted yellow (Figure H-15).



The abutments are cast in place footings with wing walls. Nine steel-pile, reinforced concrete piers support the spans, each poured with the use of cofferdams. The piers are 25 feet 6 inches wide and 20 feet 1/4 inch high, with a 14-foot 1/2 inch wide bull nose capped with a half-round 6-inch steel cap facing upstream (see Figure H-14). The abutments are 50 feet on center from each other.

Construction of the steel bridge began by closing the downstream or southbound lane of the timber trestle bridge to traffic. This side of the trestle became false work that supported the construction of the steel bridge (Hank Jacquot, personal communication 2009). Evidence of this technique is visible on the underside of the poured concrete roadway (Figure H-16). Impressions left in the concrete reveal that the outer 2/3 of the roadway was poured and supported by using shiplap form boards running parallel to the roadway. Two rows of short boards under the center area of the roadway were placed perpendicular to the roadway. Each lane of the steel bridge was poured independently of the other, so to maintain traffic flow across on of the bridges during construction.

Impressions from plywood sheets used to form the piers around driven steel piles are also visible on the concrete piers. Marks from the she bolts that held the forms in place are also visible. Upon completion of the steel bridge, workers used an air-powered underwater saw to cut down the remaining lengths of piles from the 1943 timber trestle bridge.

The steel safety railing system is comprised of various steel shapes: I-beam, T-beam, channels, and angles (Figures H-17 and H-18). Bolts hold the vertical posts and horizontal railings together. The curbing is concrete, approximately 15 inches tall and 10 inches wide, roughly in an 'L' shape. The bridge does not have a pedestrian sidewalk.

Local Haines contractors Kyle and Peterman were in charge of construction, with all supplies delivered by truck. Local men, including Hank Jacquot, were employed to construct the bridge



Figure H-8. Erecting the 1943 timber trestle. Sheldon Museum

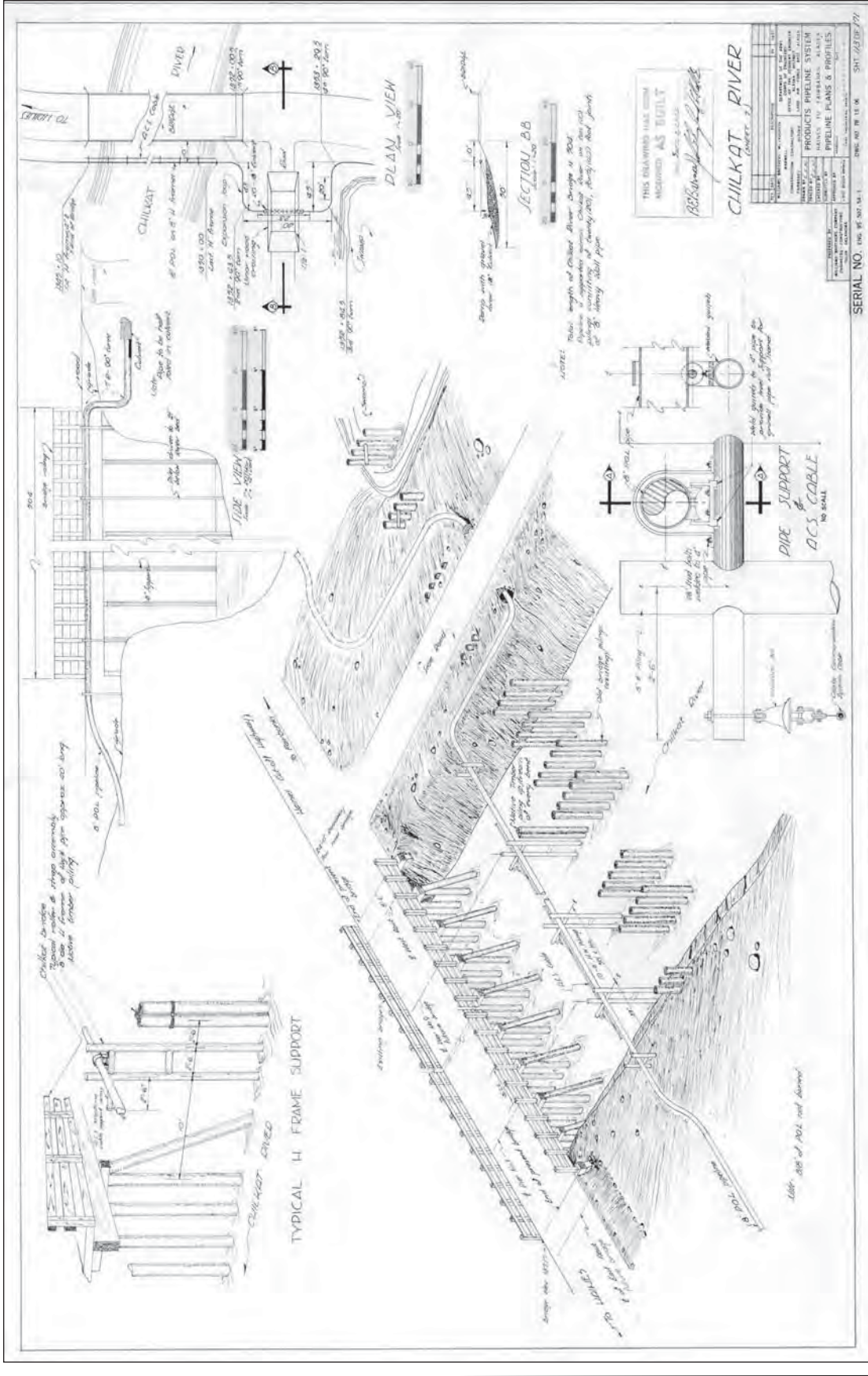


Figure H-9. 1955 plans of the Haines-Fairbanks Pipeline showing the completed 1943 timber trestle and the location of the former bridge.





Figure H-10. Pilings from the 1943 bridge (SKG-549) in place beneath the southern end of the current bridge.



Figure H-11. Approach to the bridge looking southward toward Haines.





Figure H-12. Downstream side of bridge looking southward toward Haines. .



Figure H-13. Peaked roadway crown and north abutment.



Figure H-14. Upstream end of one of the concrete piers with a steel face showing the short channel sections welded to the stringers to support the curb.



Figure H-15. Yellow-painted safety railing and concrete deck and curb.





Figure H-16. Form marks on the underside of the concrete roadway showing the sequence of the concrete deck pour.



Figure H-17. Safety railings and posts mounted to the concrete curb.





Figure H-18. Formed concrete approaches and safety railings.

using timber from the Jacquot property when necessary (Hank Jacquot, personal communication 2009). During work on the concrete bridge, no life jackets or safety harnesses were employed, but a safety line was strung across the river, and kept afloat by intermittently placed bouys.

Various weather collecting devices and a solar panel with a United States Geological Survey (USGS) tag are located on posts near the south approach to the bridge. A conduit attached to the stringers connects the solar panel to river level monitoring device attached to the upstream end of the third pier from the south.

A General Telephone and Electronics (GTE) conduit that had earlier hung on the nearby Haines-Fairbanks Pipeline towers now runs along the outermost stringer on the upstream side of the bridge. A Tlingit and Haida Regional Electrical Utility line also now runs underneath the bridge. It had formerly been in the unused gasoline pipeline on the same towers.

### *Eligibility Recommendations*

In order for a particular property—a district, site, building, structure, or object—to qualify for the National Register, it must meet one or more of the National Register Criteria for Evaluation and retain enough historic integrity necessary to convey its significance (National Park Service 1997). The National Register Criteria are:

- A. Association with events that have made a significant contribution to the broad patterns of history.
- B. Association with the lives of significant persons.
- C. Embodiment of the distinctive characteristics of a type, period, or method of construction, or representation of the work of a master, or possession of high artistic values, or representation of a significant and distinguishable entity whose components may lack individual distinction.
- D. Having yielded, or having the ability to yield, information important in prehistory or history.

Integrity is the ability of a property to convey its significance. The seven aspects of integrity (location, design, setting, materials, workmanship, feeling and association) are defined in National Register Bulletin 15 Part VIII (National Park Service 1997).

Bulletin 15 states that “To retain historic integrity a property will always possess several, and usually most, of the aspects.” Properties important under Criteria A or B ideally should retain some features of all seven aspects of integrity. However, integrity of design and workmanship might not be as important. To be eligible under Criterion C, a property must retain the physical features that characterize its type, period, or method of construction. Retention of design, workmanship, and materials are usually more important than location, setting, feeling, and association. For properties eligible under Criterion D, integrity is based upon the property's potential to yield specific data that addresses important research questions (National Park Service 1997:46).

#### *Criterion A: Association with Significant Events*

The 1958 Chilkat River Bridge is not associated with significant events in Alaskan history. It does date to the period when the U.S. Congress forced a merger between the ARC and BPR in 1956 and the newly empowered BPR Bridge Unit began to follow federal guidelines and contracting standards for bridge construction and design (United States 1957). It is also from the time when the Territory of Alaska was preparing for statehood. However, the bridge has no direct relationship with these events and, viewed in the broadest sense, is simply the fourth bridge across the Chilkat River in this general locale. It therefore is recommended as not eligible under Criterion A.

#### *Criterion B: Association with the Lives of Significant Persons*

Historic research has not connected the bridge to a person important in the development of Wells, Haines, or Alaska, or anyone directly associated with its construction, and is therefore not recommended as eligible under Criterion B as it is not “associated with the lives of persons significant in our past.”

#### *Criterion C: Distinctive Characteristics of a Type, Period, or Method of Construction*

The Chilkat River Bridge is significant under Criterion C as distinctly characteristic of a type,

period, or method of construction. Its multi-span, steel girder construction with concrete piers, abutments, and bridge deck is very characteristic of mid-century bridge architecture. Most of the bridges built in Alaska in the “early 1950s to the late 1970s” were the steel stringer type bridges (Buzzell 2007:223).

According to *A Context for Common Historic Bridge Types: NCHRP Project 25-25, Task 15*, “[Criterion C] applies to the common bridge types that are technologically significant or that illustrate engineering advances...The longer and more complex examples of a common type may also be eligible under this criterion” (Slater and Jackson 2005:1-6). Buzzell (2007:223) notes that steel stringer bridges that may be eligible for listing on the National Register “are those built before 1958 that retain integrity.” However, he also includes eligible steel stringer bridges as those “that have aesthetic qualities incorporated into their design, such as railings, wing walls or breast walls” or those “that were built from standard plans, or that have significant span lengths or a significant number of spans” (Buzzell 2007:223).

This bridge is certainly not the only one of its type in Alaska, as there are 165 other “SS/RC” (steel stringer bridge with a reinforced concrete deck) bridges in the State’s inventory. Two date to 1937 and 1940, and 45 were constructed in the 1950s. Sixteen are from the early 1960s and the rest were built after 1965. Several of the 1950s bridges are along the Denali, Richardson, Parks, and Steese highways and most are less than 100 feet in length. Longer bridges built during this era are at Canyon Creek (1950, 290 feet), Caribou Creek (1950, 233 feet), Chistochina River (1955, 333 feet), Illinois Street and Minnie Street in Fairbanks (1951 and 1953, 135 feet), and Teklanika River (1955, 334 feet). The longest bridge of this type, built in 1986, spans 1,254 feet across the channel between Kodiak and Near Island.

At 504 feet, this is the longest historic bridge of this type in Alaska. Its method of construction, erected in linear halves while supported on falsework of the former bridge, is unique. The Character Defining Features for a steel stringer bridge, as defined by Buzzell (2007:223), are “the rolled steel stringers themselves, and may include the railings, floor system, abutments, and piers.” This bridge has its original reinforced concrete piers and abutments and reinforced concrete deck. The railings appear like the original and may have been replaced in kind. The bridge has its original four steel stringers; although, additional stiffening plates appear to have been added to these sometime later. Therefore, this bridge is recommended as eligible under Criterion C.

*Criterion D: Potential to Yield Information Important in Prehistory or History*

The bridge is not likely to yield information important in prehistory or local, regional, or national history and therefore is not recommended as eligible under Criterion D.

*Integrity*

Historic integrity is “the authenticity of a property’s historic identity, evidenced by the survival of physical characteristics that existed during the property’s prehistoric or historic period. The following are the seven qualities of historic integrity:



- *Location* is the place where the historic property was constructed or the place where the historic event took place.
- *Design* is the composition of elements that constitute the form, plan, space, structure, and style of a property.
- *Setting* is the physical environment of a historic property that illustrates the character of the place.
- *Materials* are the physical elements combined in a particular pattern or configuration to form the structure during a period in the past.
- *Workmanship* is the physical evidence of the crafts of a particular culture or people during any given period of history.
- *Feeling* is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time.
- *Association* is the direct link between a property and the event or person for which the property is significant.

Of the seven qualities of historic integrity, none have been altered.

*Location:* The bridge remains in its originally constructed location.

*Setting:* The setting for the bridge is still rural and rugged, with minimal intrusion of modern elements constructed around the area of the bridge. Buildings belonging to the ARC and private individuals were in Welles before the bridge construction began.

*Materials:* The bridge retains the use of steel and concrete structural materials.

*Design:* The design of the original bridge has not been altered. No additional safety railings have been added, a typical addition to many highway bridges.

*Workmanship:* No structural changes have been made to the bridge and as such, the workmanship of the bridge remains as built, without any lesser qualities of workmanship added to the structure.

*Feeling:* The bridge conveys the feeling of a 1950s design with its relatively lightweight construction and steel and concrete components.

*Association:* The bridge retains its historic association as part of the Haines Highway.

### *Recommendation*

The Chilkat River Bridge is recommended as eligible for the National Register under Criterion C. The historic integrity of the original multi-span steel girder bridge has not been compromised by any reconstruction or rehabilitation. It is also a near perfect example of its type and, at 504 feet, the longest multi-span steel girder historic bridge in Alaska. As an active bridge on the Haines Highway, it is in good condition, having managed to retain its historical—

although not necessarily its structural—integrity. The period of significance for the Chilkat River Bridge is 1958.

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## **DOT&PF Bridge Section Bridge Evaluation Memorandums**



# MEMORANDUM

# State of Alaska

Department of Transportation & Public Facilities  
Statewide Design & Engineering Services Division /Bridge Section

**TO:** Reuben Yost  
Project Manager  
Southeast Region Design

**DATE:** October 29, 2009

**BRIDGE NO:** 742  
**TELEPHONE NO:** 465-2975  
**FAX NUMBER:** 465-6947  
**TEXT TELEPHONE:** 465-3652

**FROM:**   
Richard A Pratt, P.E.  
Chief Bridge Engineer

**CONTACT:** Elmer E. Marx, P.E.  
465-6941  
elmer.marx@alaska.gov

**RE:** Revised Preliminary Bridge  
Plans and Cost Estimates

**SUBJECT:** Chilkat River Bridge  
Haines Highway

As requested, we have prepared some additional preliminary bridge alternatives for the subject project. Three bridge options are presented. Specifically, we have examined the following:

- Option 1      Widen and rehabilitate the existing bridge
- Option 2      Replace the existing bridge on a parallel roadway alignment
- Option 3      Replace the existing bridge on the existing roadway alignment

The preliminary bridge cost estimates are attached. They include all bridge-related pay items (including temporary work structures) as well as an 11% mobilization allowance (10% of subtotal cost including mobilization and demobilization pay item), a 15% construction engineering allowance, and a 4.24% ICAP allowance.

We have very little foundation, hydraulic, topographic, or other design information for this site. Consequently, a 25% contingency is included. Due to the unpredictable nature of rehabilitation work, we recommend using a 30% contingency for Option 1. As information becomes available, we will incrementally decrease the contingency value (percentage) until we provide the final bridge cost estimate.

The bridge is located in a high seismic zone. Based upon the USGS/AASHTO seismic hazard maps and the anticipated soil classification, we anticipate the bridge will be classified as Seismic Design Category "D" requiring the most stringent seismic detailing. Although this is not particularly onerous for the replacement options, it does add substantial cost to the rehabilitation option.

A brief summary and list of the advantages and disadvantages for each option is provided on the following sheets.

If you have any questions, please contact Elmer.

Attachments

**Option 1 – Widen and rehabilitate the existing bridge**

503.75 FT long, ten-span, steel girder bridge

Maximum span length = 50 FT

Vertical clearance under bridge (navigation) ~ 9 FT

Bridge related pay items (w/o mobilization, CE, ICAP, or contingency) = \$7.6M

Bridge related pay items (w/ mobilization, CE, ICAP, and 30% contingency) = \$13.1M

ADVANTAGES	DISADVANTAGES
Does not require any significant changes in the existing roadway alignment in the vicinity near the bridge.	Most expensive bridge option.
Navigation can be maintained under the bridge during construction although some intermittent closures would likely be required.	The bridge was built in 1958 for 50-year design life. The life expectancy of the rehabilitated bridge would not be as great as the replacement bridge options.
	Although not verified by physical testing, bridges of this vintage are typically coated in lead-based paint. Repainting of the bridge is likely required and is included in the cost estimate. Full containment of the bridge is required during painting to satisfy environmental requirements.
	The existing bridge is not capable of accommodating construction equipment. Thus, a temporary work structure will be required in order to install pier piles and to set bridge girders. The existing bridge piers must be widened and strengthened to accommodate the wider superstructure.
	It has been suggested that the navigation clearance below the existing bridge is inadequate. This option does not change the existing navigational clearances.
	The rehabilitated bridge would include new crash-tested railing, a new stronger deck, two new lines of steel girders, and significantly improved piers. Nonetheless, it is likely that the rehabilitated bridge would not meet all of the current code requirements.

In order to widen and rehabilitate the bridge, many new bridge components are required including the railing, deck, exterior girders, pier cap, and pier piles. Therefore, only the existing steel girders and portions of the concrete abutments and piers are retained in the completed structure. Although technically feasible, this option is more expensive than the replacement options while offering no significant advantages. We do not recommend that this option be advanced for further consideration.

**STATE OF ALASKA DOT/PF  
COMPUTATIONS  
Chilkat River Bridge Widening**

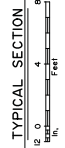
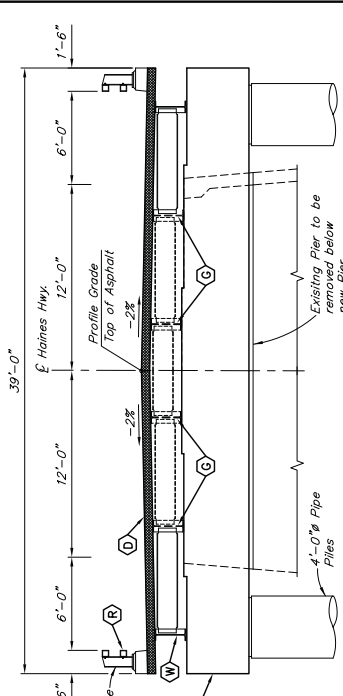
DATE 10/29/2009  
BRIDGE No. 742  
By EEM

*Option 1*  
Widen and Rehabilitate Existing Bridge  
ESTIMATE OF QUANTITIES AND COST

Item No.	ITEM	UNIT	UNIT PRICE	QUANTITY	AMOUNT
202(1)	Removal of Structures and Obstructions	LS-SF	\$25	2,535	\$63,375
205(3)	Foundation Fill	CY	\$50	100	\$5,000
501(1)	Class A Concrete	LS-CY	\$1,200	700	\$840,000
501(2)	Class A-A Concrete	LS-CY	\$1,400	625	\$875,000
503(1)	Reinforcing Steel	LS-LBS	\$2.25	215,000	\$483,750
503(2)	Epoxy Coated Reinforcing Steel	LS-LBS	\$2.50	270,000	\$675,000
504(1)	Structural Steel	LS-LBS	\$3.00	120,000	\$360,000
505(5A)	Furnish Structural Steel Piles (HP14x117)	LF	\$100	800	\$80,000
505(6A)	Drive Structural Steel Piles (HP14x117)	LF	\$25	800	\$20,000
505(5B)	Furnish Structural Steel Piles (48" x 1" PIPE)	LF	\$450	2,160	\$972,000
505(6B)	Drive Structural Steel Piles (48" x 1" PIPE)	LF	\$75	2,160	\$162,000
505(7)	Pile Driving Equipment	LS	\$100,000	1	\$100,000
505(11)	Pile Restrike	DAY	\$3,000	33	\$99,000
507(1)	Steel Bridge Railing	LF	\$225	1,067.5	\$240,188
510(1)	Removal of Concrete Bridge Deck	SF	\$25	13,100	\$327,500
512(x)	Temporary Work Structure	LS-SF	\$100	17,000	\$1,700,000
513(1)	Field Painting Steel Structures	LS-SF	\$25	17,500	\$437,500
606(12)	Guardrail / Bridge Rail Connection	EACH	\$3,000	4	\$12,000
611(1)	Riprap, Class II	CY	\$50	2,500	\$125,000
631(2)	Geotextile, Erosion Control, Class 2	SY	\$2.50	2,500	\$6,250
<b>SUBTOTAL</b>					<b>\$7,583,563</b>
	Mobilization & Demobilization	LS	11%		\$842,618
<b>SUBTOTAL</b>					<b>\$8,426,181</b>
	Construction Engineering	LS	15%		\$1,263,927
<b>SUBTOTAL</b>					<b>\$9,690,108</b>
	ICAP	LS	4.24%		\$410,861
<b>SUBTOTAL</b>					<b>\$10,100,968</b>
	Contingency	LS	30%		\$3,030,290
<b>TOTAL</b>					<b>\$13,131,259</b>



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA		2008		



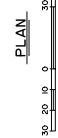
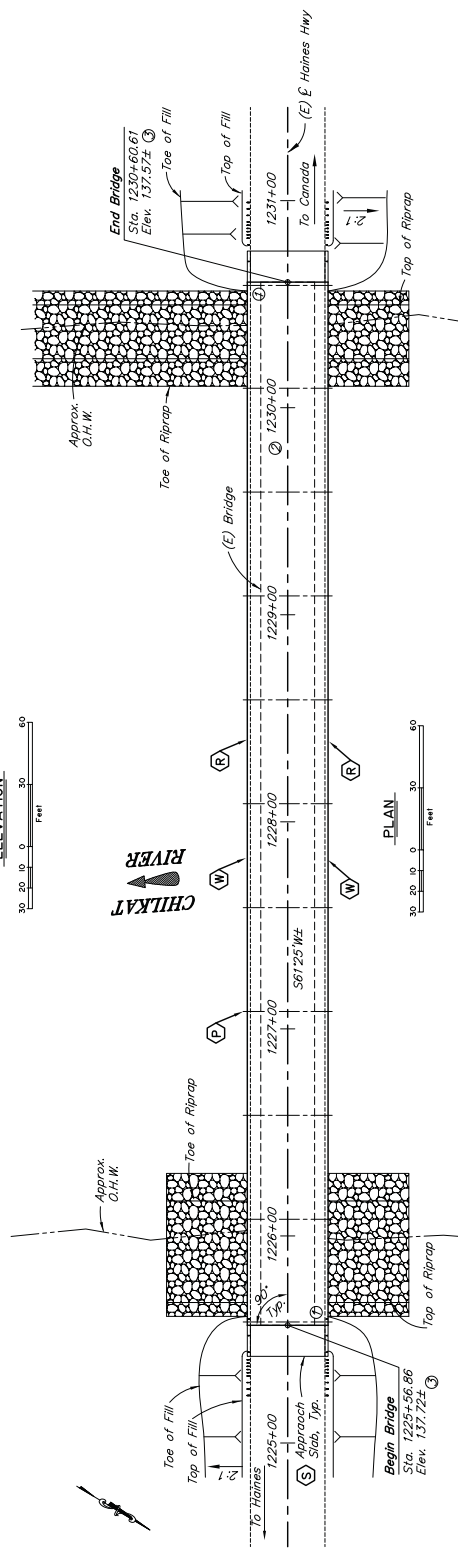
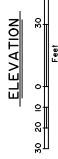
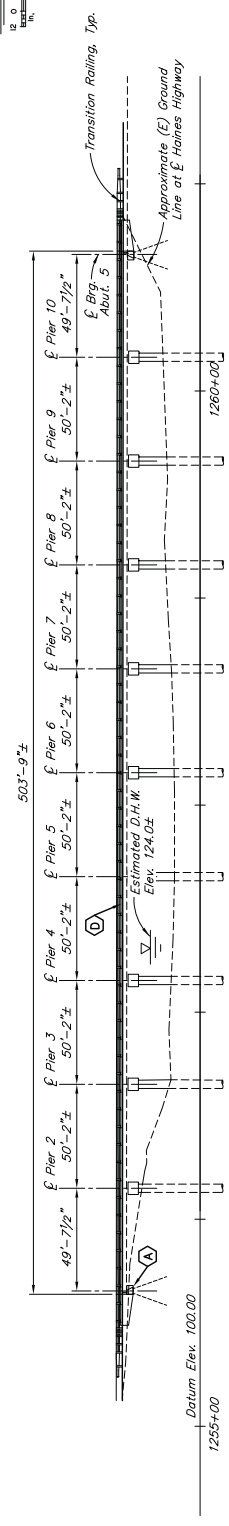
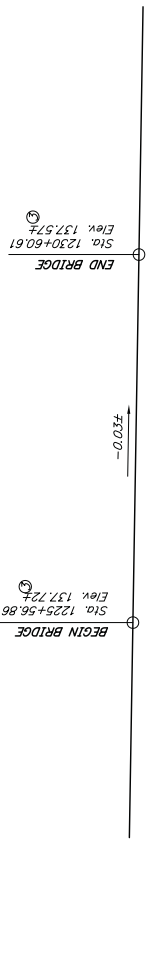
LEGEND	
(A)	Abutment widening
(D)	New Deck
(G)	Repaint (E) Girders
(P)	New pier Cap and Piles, Typ.
(R)	New Railing
(S)	Approach Slab
(W)	New Girder Widening

BRIDGE DRAWING INDEX	
GENERAL LAYOUT	DWG. NO. 1
SITE PLAN	DWG. NO. 2

**PRELIMINARY PLAN  
REHABILITATION**

**OPTION 1**

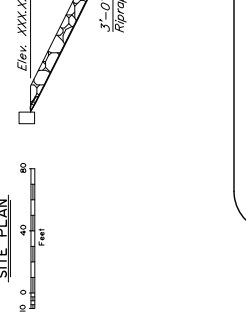
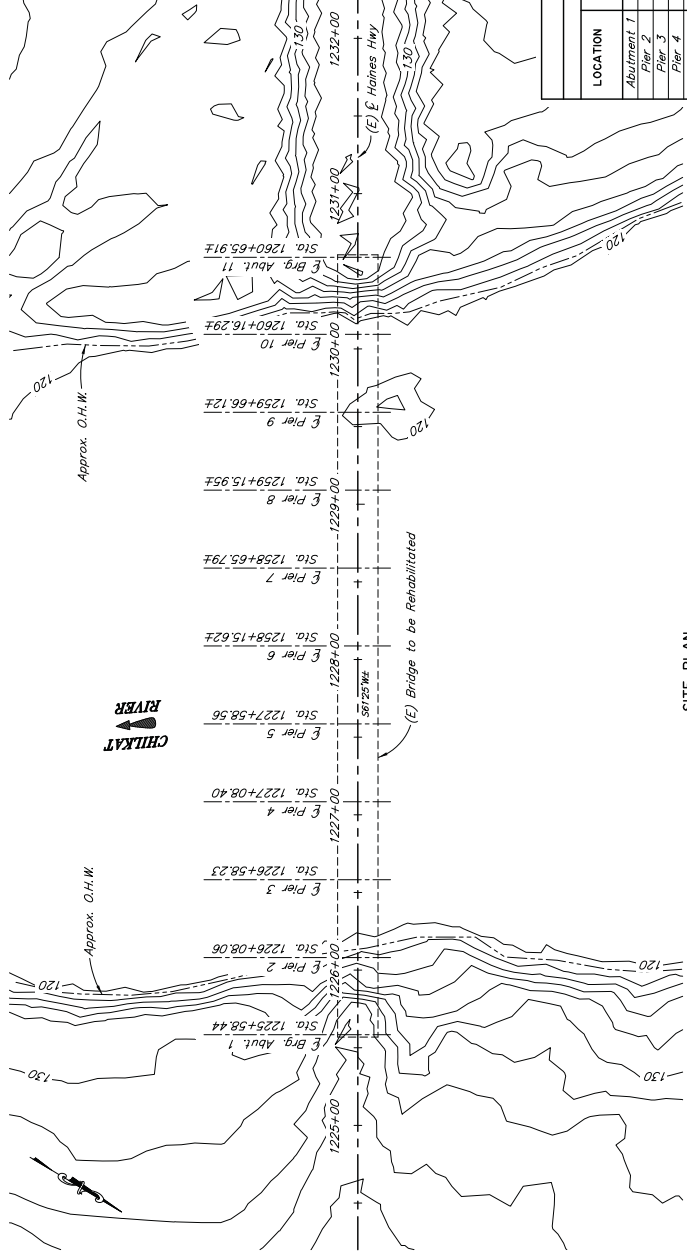
- ① Approximate location of Bridge Number Plate.
- ② Proposed Station 1230+00 is equal to the existing station 1200+06.89.
- ③ Elevations are for existing Bridge.



<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES BRIDGE SECTION</p>		<p>CHILKAT RIVER BRIDGE HAINES HIGHWAY GENERAL LAYOUT</p>	
DESIGNED BY:	Engineer	CHECKED BY:	Engineer
DRAWN BY:	Survey	SPECIFICATIONS BY:	P. S. & E. COMPARED:
QUANTITIES BY:	Engineer	APPROVAL RECOMMENDED BY:	Res. Pract.

**GENERAL NOTES:**  
 AASHTO LRFD Bridge Design Specifications, Fourth Edition, 2007, with latest interim specifications.  
 Seismic design per AASHTO Guide Specifications for LRFD Seismic Bridge Design, 2009

**LIVE LOAD:** HL-93  
**DEAD LOAD:** Includes 50 psf for all wearing surfacing.  
**SEISMIC PARAMETERS:**  
 PGA = 0.322  
 S<sub>v</sub> = 0.144  
 S<sub>d</sub> = 1.287  
 Site Class = D  
 Liquefaction Potential = Low  
 AASHTO 7% probability of exceedance in 75 years.  
**ICE LOAD:** Effective ice crushing strength = 16 tsf  
 Design ice thickness = 1 ft.  
**REINFORCEMENT:** ASTM A706, F<sub>y</sub> = 60,000 psi  
 Space reinforcement evenly unless otherwise noted.  
**PRESTRESSED CONCRETE:** See "CIDERS" Dwg.  
 Class A Concrete, f<sub>c</sub> = 4000 psi  
 Class A-A Concrete - approach slabs, f<sub>c</sub> = 5000 psi.  
**STRUCTURAL STEEL:** ASTM A709, Grade 36/73, F<sub>y</sub> = 36,000 psi, unless otherwise noted.  
**STRUCTURAL STEEL PILING:** H-Piles - ASTM A709, Grade 50/73, F<sub>y</sub> = 50,000 psi.  
 Pipe Piles - API 5L, X62 PSL2, F<sub>y</sub> = 32,000 psi.  
 Pile tip reinforcing as required.



**HYDRAULIC & HYDROLOGIC SUMMARY**

Flood Frequency (Tr.)	50	100	500
Exceedance Probability (%)	2	1	0.2
Design Discharge (ft <sup>3</sup> /sec)			
Design High Water (ft)			
Anticipated Addl Backwater (ft)			
Contraction Scour (ft)			
Abutment Scour (ft)			
Pier Scour (ft)			

Drainage Area for this crossing: XX.X square miles.  
 Hydraulic Capacity: cfs at Low Superstructure Elevation  
 which has an exceedance probability of equal to or less than 0.2 percent.  
 Total scour equals contraction scour + local scour.

**PRELIMINARY PLAN**

**REHABILITATION**

**DESIGNED BY:** ENGINEER  
**DRAWN BY:** SENIOR ENGINEER  
**QUANTITIES BY:** ENGINEER

**CHECKED BY:** ENGINEER  
**FOUNDATIONS REVIEWED BY:** SENIOR ENGINEER  
**QUANTITIES BY:** ENGINEER

**STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES BRIDGE SECTION**

**CHILKAT RIVER BRIDGE  
 HAINES HIGHWAY  
 SITE PLAN**

**Option 2 – Replace the existing bridge on a parallel roadway alignment**

540 FT long, four-span, precast concrete girder bridge

Maximum span length = 135 FT

Minimum centerline roadway elevation on bridge ~ 146.0 FT

Vertical clearance under bridge (navigation) ~ 15 FT

Bridge related pay items (w/o mobilization, CE, ICAP, or contingency) = \$6.7M

Bridge related pay items (w/ mobilization, CE, ICAP, and 25% contingency) = \$11.1M

ADVANTAGES	DISADVANTAGES
Least expensive bridge option.	The existing bridge is not capable of accommodating construction equipment. Thus, a temporary work structure will be required in order to install pier piles and to set bridge girders.
Significantly improves the navigational clearance below the bridge, from a 48-ft by 9-ft opening to a 128-ft by 15-ft opening.	Although we do not have the existing Right of Way (ROW) boundaries at this time, it may be that the parallel roadway alignment would require the acquisition of additional ROW.
The existing bridge can be used to maintain vehicular traffic during construction of the new bridge. Thus, the cost of traffic maintenance (not included in the bridge cost) would be less than the other options.	In order to provide additional navigational clearance below the bridge, a roadway profile grade raise is required. Thus, the width of the approach roadway embankment will be greater than that of the existing structure and, in this case, relocated on a new roadway alignment offset from the existing alignment. Additional cost associated with the approach roadway fill and possible ROW acquisition will need to be considered.
Navigation can be maintained under the bridge during construction although some intermittent closures would likely be required.	
The proposed bridge will satisfy all current code requirements and provide for a 75-year life.	

The Alaska DOT&PF has successfully used precast concrete decked bulb-tee girder bridges throughout the state. This style of bridge has proven to be a very cost-effective, durable structure in most environments.

At this time, there is no proposed roadway alignment for this option. For convenience, the preliminary bridge plans provide stationing values based upon station 0+00.00 at the begin bridge location. If this option is developed, the stationing will be modified to reflect the revised roadway plan and profile.



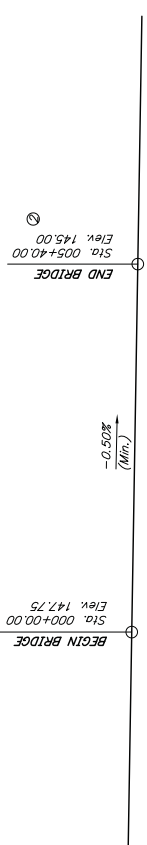
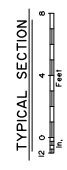
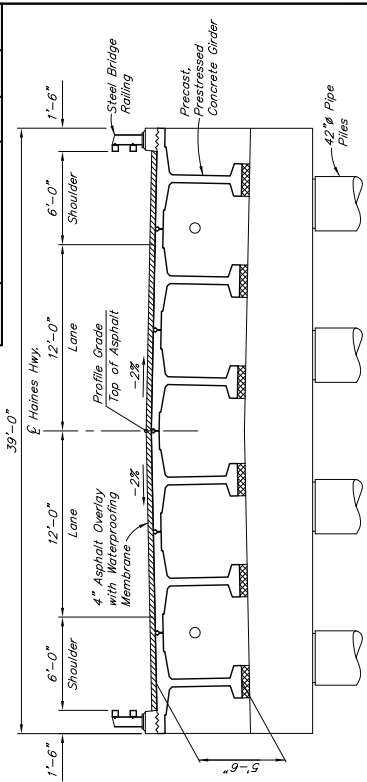
**STATE OF ALASKA DOT/PF  
COMPUTATIONS  
Chilkat River Bridge Replacement**

DATE 10/29/2009  
BRIDGE No. 742  
By EEM

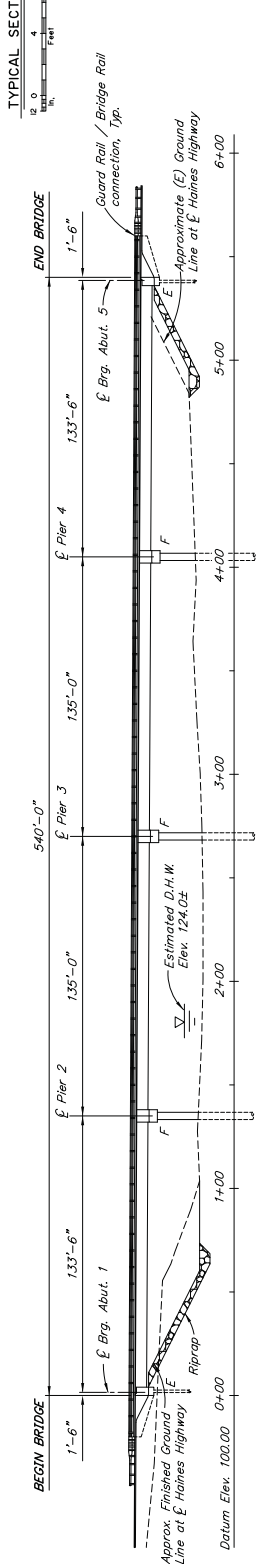
*Option 2*  
540 ft long four span bridge - Parallel Alignment  
ESTIMATE OF QUANTITIES AND COST

Item No.	ITEM	UNIT	UNIT PRICE	QUANTITY	AMOUNT
202(1)	Removal of Structures and Obstructions	LS-SF	\$25	13,223	\$330,586
205(3)	Foundation Fill	CY	\$50	1,200	\$60,000
501(1)	Class A Concrete	LS-CY	\$1,200	655	\$786,000
501(2)	Class A-A Concrete	LS-CY	\$1,400	55.2	\$77,287
501(7)	Precast Concrete Member	EACH	\$75,000	24	\$1,800,000
503(1)	Reinforcing Steel	LS-LBS	\$2.25	110,000	\$247,500
503(2)	Epoxy Coated Reinforcing Steel	LS-LBS	\$2.50	82,500	\$206,250
505(5A)	Furnish Structural Steel Piles (HP14x117)	LF	\$100	1,200	\$120,000
505(6A)	Drive Structural Steel Piles (HP14x117)	LF	\$25	1,200	\$30,000
505(5B)	Furnish Structural Steel Piles (42" x 1" PIPE)	LF	\$400	1,440	\$576,000
505(6B)	Drive Structural Steel Piles (42" x 1" PIPE)	LF	\$75	1,440	\$108,000
505(7)	Pile Driving Equipment	LS	\$100,000	1	\$100,000
505(11)	Pile Restrike	DAY	\$3,000	15	\$45,000
507(1)	Steel Bridge Railing	LF	\$225	1,160	\$261,000
508(1)	Waterproofing Membrane	LS-SF	\$3.00	20,880	\$62,640
512(x)	Temporary Work Structure	LS-SF	\$100	17,000	\$1,700,000
606(12)	Guardrail / Bridge Rail Connection	EACH	\$3,000	4	\$12,000
611(1)	Riprap, Class II	CY	\$50	2,500	\$125,000
631(2)	Geotextile, Erosion Control, Class 2	SY	\$2.50	2,500	\$6,250
<b>SUBTOTAL</b>					<b>\$6,653,513</b>
	Mobilization & Demobilization	LS	11%		\$739,279
<b>SUBTOTAL</b>					<b>\$7,392,793</b>
	Construction Engineering	LS	15%		\$1,108,919
<b>SUBTOTAL</b>					<b>\$8,501,711</b>
	ICAP	LS	4.88%		\$414,884
<b>SUBTOTAL</b>					<b>\$8,916,595</b>
	Contingency	LS	25%		\$2,229,149
<b>TOTAL</b>					<b>\$11,145,744</b>

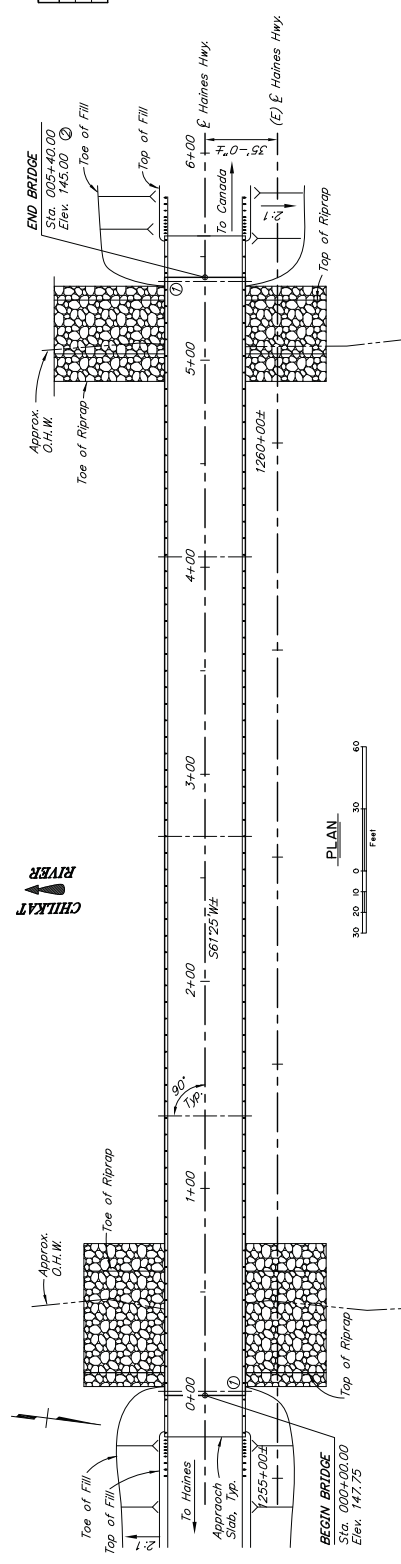
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA		2008		



PROFILE GRADE DATA  
No Scale



ELEVATION  
0 30 60  
FEET



PLAN  
0 30 60  
FEET

BRIDGE DRAWING INDEX	
TITLE	DWG. NO.
GENERAL LAYOUT	1
SITE PLAN	2

**PRELIMINARY PLAN**

**OPTION 2**

- ① Approximate location of Bridge Number Plate.
- ② Minimum elevation to provide 15'-0" navigation clearance.

DESIGNED BY: <i>Elmer Mann</i>		CHECKED BY: <i>Elmer Mann</i>		STATE OF ALASKA		CHILKAT RIVER BRIDGE	
DRAWN BY: <i>Sam Sells</i>		SPECIFICATIONS BY: <i>Elmer Mann</i>		DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES		HAINES HIGHWAY	
QUANTITIES BY: <i>Elmer Mann</i>		APPROVAL RECOMMENDED BY: <i>Elmer Mann</i>		BRIDGE SECTION		GENERAL LAYOUT	
CHECKED: <i>Elmer Mann</i>		CHECKED: <i>Elmer Mann</i>		BRIDGE NO. 742		DWG. NO. 1	

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.
ALASKA		2008	

**GENERAL NOTES**

DESIGN: AASHTO LRFD Bridge Design Specifications, Fourth Edition, 2007, with latest interim specifications.  
 Seismic design per AASHTO Guide Specifications for LRFD Seismic Bridge Design, 2009

LIVE LOAD: HL-93  
 DEAD LOAD: Includes 50 psf for all wearing surfacing.

SEISMIC PARAMETERS: PGA = 0.322  
 S<sub>v</sub> = 0.144  
 S<sub>d</sub> = 0.287  
 Site Class = D  
 Liquefaction Potential = Low  
 AASHTO 7% probability of exceedance in 75 years.

ICE LOAD: Effective ice crushing strength = 16 tsf  
 Design ice thickness = 1 ft.

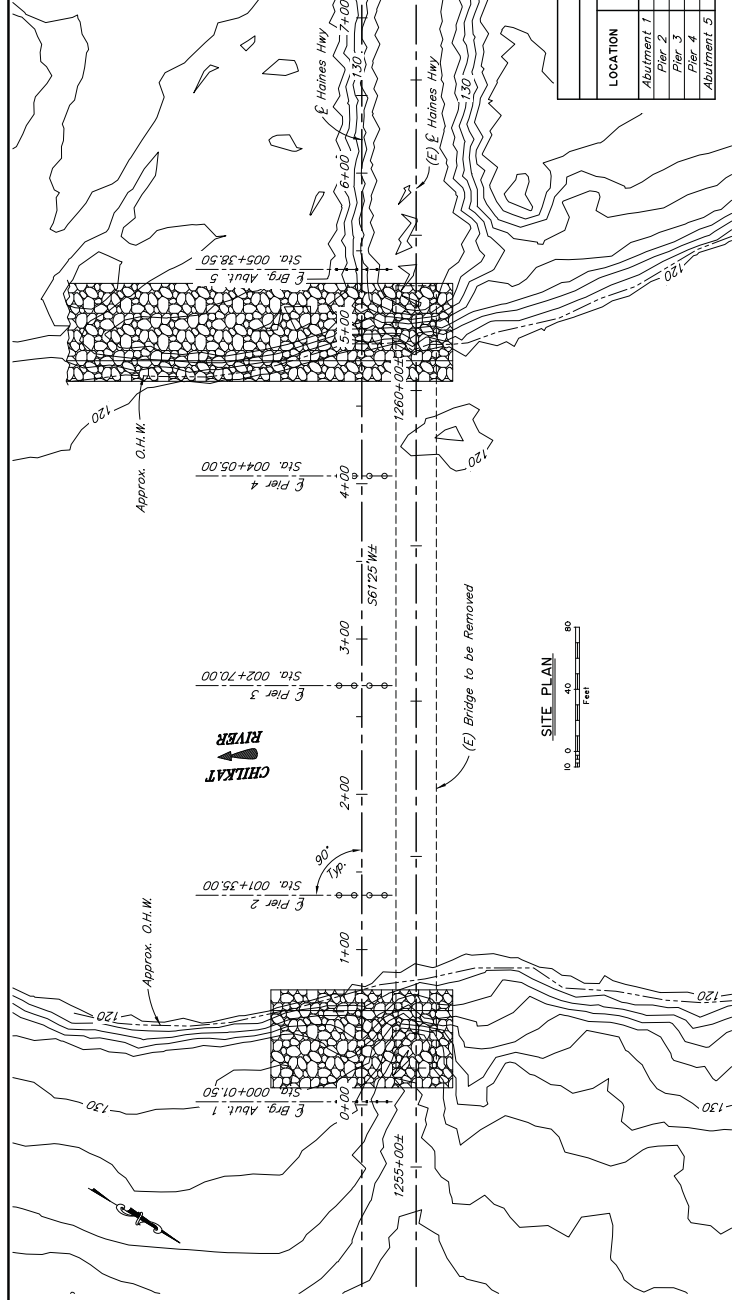
REINFORCEMENT: ASTM A706, Fy = 60,000 psi  
 Space reinforcement evenly unless otherwise noted.  
 Headed bars - ASTM A970.

PRESTRESSED CONCRETE: See "CARRIERS" Dwg.

CONCRETE: Class A Concrete, f<sub>c</sub> = 4000 psi  
 Class A-A Concrete - approach slabs, f<sub>c</sub> = 5000 psi.

STRUCTURAL STEEL: ASTM A709, Grade 36/73, Fy = 36,000 psi, unless otherwise noted.

STRUCTURAL STEEL PILING: H-Piles - ASTM A709, Grade 50/73, Fy = 50,000 psi.  
 Pipe Piles - API 5L, X62-PSL2, Fy = 35,000 psi.  
 Pile tip reinforcing is required.



**SITE PLAN**

LOCATION	PILE TYPE	DRIVING CRITERIA			DESIGN DATA		
		MINIMUM PENETRATION (ft)	ESTIMATED PILE TIP ELEVATION (ft)	DRIVING RESISTANCE (k)	STRENGTH FACTORED LOAD (k)	NOMINAL RESISTANCE (k)	RESISTANCE FACTOR, φ
Abutment 1	HP14x17						
Pier 2	3'-6" x 17" Pipe						
Pier 3	3'-6" x 17" Pipe						
Pier 4	3'-6" x 17" Pipe						
Abutment 5	HP14x17						

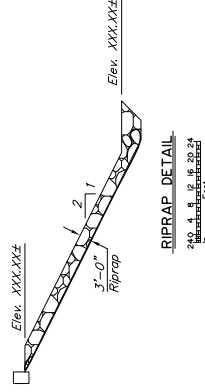
BRIDGE BASIS OF ESTIMATE			
ITEM NO.	ITEM	UNIT	TOTAL
	SUBST.		
	SUPERST.		
	TOTAL		

Item numbers are for reference only. Quantities shown are not necessarily the pay quantities nor the total quantity of the particular item.

HYDRAULIC & HYDROLOGIC SUMMARY			
Flood Frequency (Tr.)	50	100	500
Exceedance Probability (%)	2	1	0.2
Design Discharge (ft <sup>3</sup> /sec)			
Design High Water (ft)			
Anticipated Add'l Backwater (ft)			
Contraction Scour (ft)			
Abutment Scour (ft)			
Pier Scour (ft)			

Drainage Area for this crossing: XX.X square miles.  
 Hydraulic Capacity: cfs at Low Superstructure Elevation  
 which has an exceedance probability of equal to or less than 0.2 percent.  
 Total scour equals contraction scour + local scour.

**OPTION 2**



**PRELIMINARY PLAN**

DESIGNED BY: <i>Elmer Moss</i>	CHECKED: <i>Elmer Moss</i>	HYDRAULICS BY: <i>Elmer Moss</i>	CHECKED BY: <i>Elmer Moss</i>
DRAWN BY: <i>Sam Sells</i>	CHECKED: <i>Elmer Moss</i>	FOUNDATIONS REVIEWED BY: <i>Elmer Moss</i>	CHECKED: <i>Elmer Moss</i>
QUANTITIES BY: <i>Elmer Moss</i>	CHECKED: <i>Elmer Moss</i>		

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES  
 BRIDGE SECTION

CHILKAT RIVER BRIDGE  
 HAINES HIGHWAY  
 SITE PLAN

BRIDGE NO. 742  
 DWG. NO. 2



### **Option 3 – Replace the bridge on the existing roadway alignment**

540 FT long, four-span, precast concrete girder bridge

Maximum span length = 135 FT

Minimum centerline roadway elevation on bridge ~ 146.0 FT

Vertical clearance under bridge (navigation) ~ 15 FT

Bridge related pay items (w/o mobilization, CE, ICAP, or contingency) = \$7.1M

Bridge related pay items (w/ mobilization, CE, ICAP, and 25% contingency) = \$11.9M

<b>ADVANTAGES</b>	<b>DISADVANTAGES</b>
Significantly improves the navigational clearance below the bridge, from a 48-ft by 9-ft opening to a 128-ft by 15-ft opening.	The existing bridge cannot be used to maintain vehicular traffic during construction of the new bridge. In order to accommodate vehicular traffic, a temporary detour bridge will be required.
* Since a temporary work structure is required to construct a replacement bridge, the added cost of building a combination detour/work structure is not particularly great (about \$400,000)	In order to provide additional navigational clearance below the bridge, a roadway profile grade raise is required. Thus, the width of the approach roadway embankment will be greater than that of the existing structure. Additional cost associated with the approach roadway fill will need to be considered.
Because this bridge would replace the existing bridge on the existing roadway alignment, it is assumed that no work outside of the existing ROW would be required. This assumption will need to be verified as information becomes available.	* A separate work structure may also be required if it is unacceptable to work from the temporary detour bridge. The cost of a separate work structure is about \$1.7M. The additional of a work structure would make this the most expensive option.
Navigation can be maintained under the bridge during construction although some intermittent closures would likely be required.	
The proposed bridge will satisfy all current code requirements and provide for a 75-year life.	

\* The preliminary cost estimate for this bridge is based upon the assumption that the a dual work bridge / detour bridge is used rather than a separate structure for each function.

Other than the location, this option is very nearly the same bridge as that presented in Option 2. However, because this bridge is located on the existing alignment, a temporary detour bridge would be required thereby increasing the overall bridge cost.

Also, the proposed roadway profile grade will need to be raised approximately four feet near the bridge in order to provide the desired 15 feet vertical navigation clearance.

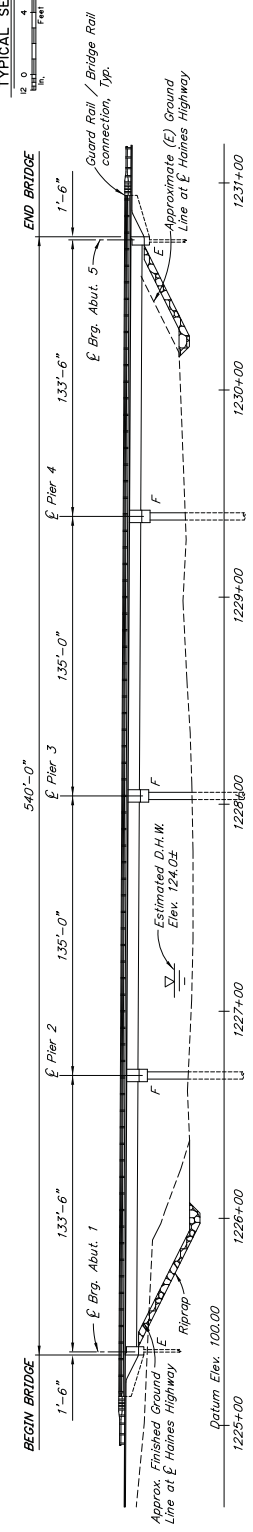
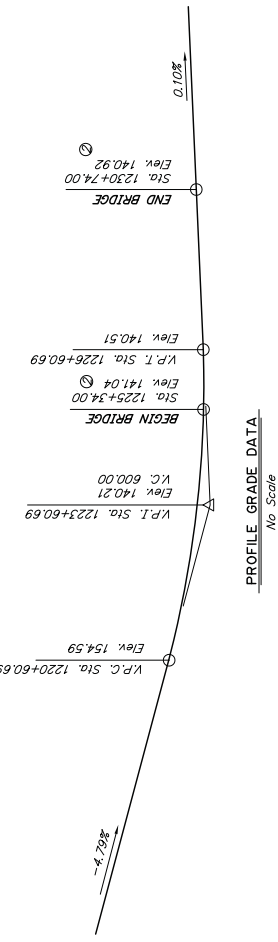
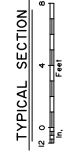
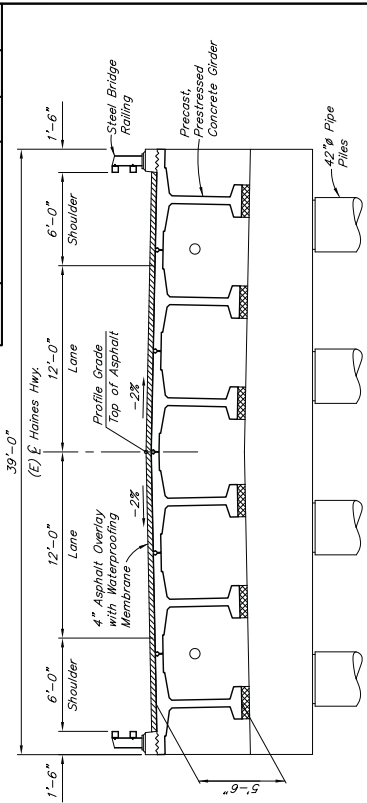
**STATE OF ALASKA DOT/PF  
COMPUTATIONS  
Chilkat River Bridge Replacement**

DATE 10/29/2009  
BRIDGE No. 742  
By EEM

*Option 3*  
540 ft long four span bridge - Existing Alignment  
ESTIMATE OF QUANTITIES AND COST

Item No.	ITEM	UNIT	UNIT PRICE	QUANTITY	AMOUNT
202(1)	Removal of Structures and Obstructions	LS-SF	\$25	13,223	\$330,586
205(3)	Foundation Fill	CY	\$50	1,200	\$60,000
501(1)	Class A Concrete	LS-CY	\$1,200	655	\$786,000
501(2)	Class A-A Concrete	LS-CY	\$1,600	55.2	\$88,328
501(7)	Precast Concrete Member	EACH	\$75,000	24	\$1,800,000
503(1)	Reinforcing Steel	LS-LBS	\$2.25	110,000	\$247,500
503(2)	Epoxy Coated Reinforcing Steel	LS-LBS	\$2.50	82,500	\$206,250
505(5A)	Furnish Structural Steel Piles (HP14x117)	LF	\$100	1,200	\$120,000
505(6A)	Drive Structural Steel Piles (HP14x117)	LF	\$25	1,200	\$30,000
505(5B)	Furnish Structural Steel Piles (42" x 1" PIPE)	LF	\$400	1,440	\$576,000
505(6B)	Drive Structural Steel Piles (42" x 1" PIPE)	LF	\$75	1,440	\$108,000
505(7)	Pile Driving Equipment	LS	\$100,000	1	\$100,000
505(11)	Pile Restrike	DAY	\$3,000	15	\$45,000
507(1)	Steel Bridge Railing	LF	\$250	1,160	\$290,000
508(1)	Waterproofing Membrane	LS-SF	\$3.00	20,880	\$62,640
520(1)	Temporary Crossing (work structure)	LS-SF	\$125	17,000	\$2,125,000
606(12)	Guardrail / Bridge Rail Connection	EACH	\$3,000	4	\$12,000
611(1)	Riprap, Class II	CY	\$50	2,500	\$125,000
631(2)	Geotextile, Erosion Control, Class 2	SY	\$2.50	2,500	\$6,250
<b>SUBTOTAL</b>					<b>\$7,118,554</b>
	Mobilization & Demobilization	LS	11%		\$790,950
<b>SUBTOTAL</b>					<b>\$7,909,505</b>
	Construction Engineering	LS	15%		\$1,186,426
<b>SUBTOTAL</b>					<b>\$9,095,931</b>
	ICAP	LS	4.88%		\$443,881
<b>SUBTOTAL</b>					<b>\$9,539,812</b>
	Contingency	LS	25%		\$2,384,953
<b>TOTAL</b>					<b>\$11,924,765</b>

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA		2008		

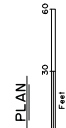
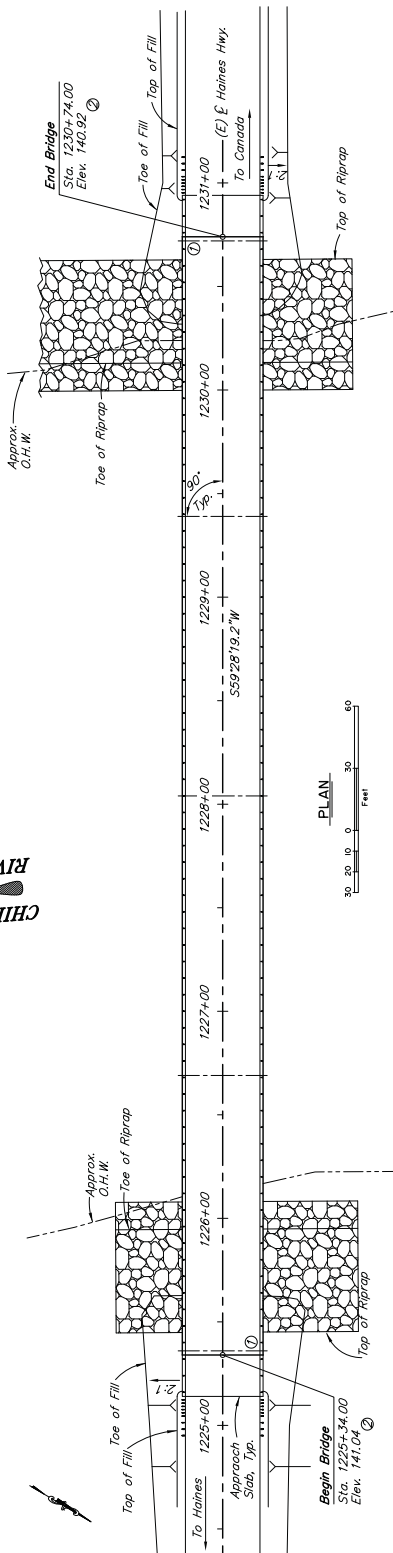


BRIDGE DRAWING INDEX	
TITLE	DWG. NO.
GENERAL LAYOUT	1
SITE PLAN	2

**PRELIMINARY PLAN**

**OPTION 3**

- ① Approximate location of Bridge Number Plate.
- ② 4'-0" Grade raise required to provide 15'-0" navigation clearance.



DESIGNED BY: <i>Elmer Moss</i>		CHECKED BY: <i>Elmer Moss</i>	
DRAWN BY: <i>Sam Sells</i>		SPECIFICATIONS BY: <i>Elmer Moss</i>	
QUANTITIES BY: <i>Elmer Moss</i>		APPROVAL RECOMMENDED BY: <i>Elmer Moss</i>	
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES BRIDGE SECTION		STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES BRIDGE SECTION	
CHILKAT RIVER BRIDGE HAINES HIGHWAY GENERAL LAYOUT		CHILKAT RIVER BRIDGE HAINES HIGHWAY GENERAL LAYOUT	
BRIDGE NO. 742		BRIDGE NO. 742	
DWG. NO. 1		DWG. NO. 1	



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA		2008		

**GENERAL NOTES**

DESIGN: AASHTO LRFD Bridge Design Specifications, Fourth Edition, 2007, with latest Interim Revisions. Seismic design per AASHTO Guide Specifications for LRFD Seismic Bridge Design, 2009.

LIVE LOAD: HL-93

DEAD LOAD: Includes 50 psf for all wearing surfacing.

SEISMIC PARAMETERS: PGA = 0.322, Ss = 0.744, Si = 0.287

Site Class = Potential = Low

AASHTO 7% probability of exceedance in 75 years.

ICE LOAD: Effective ice crushing strength = 16 ksf  
Design ice thickness = 1 ft.

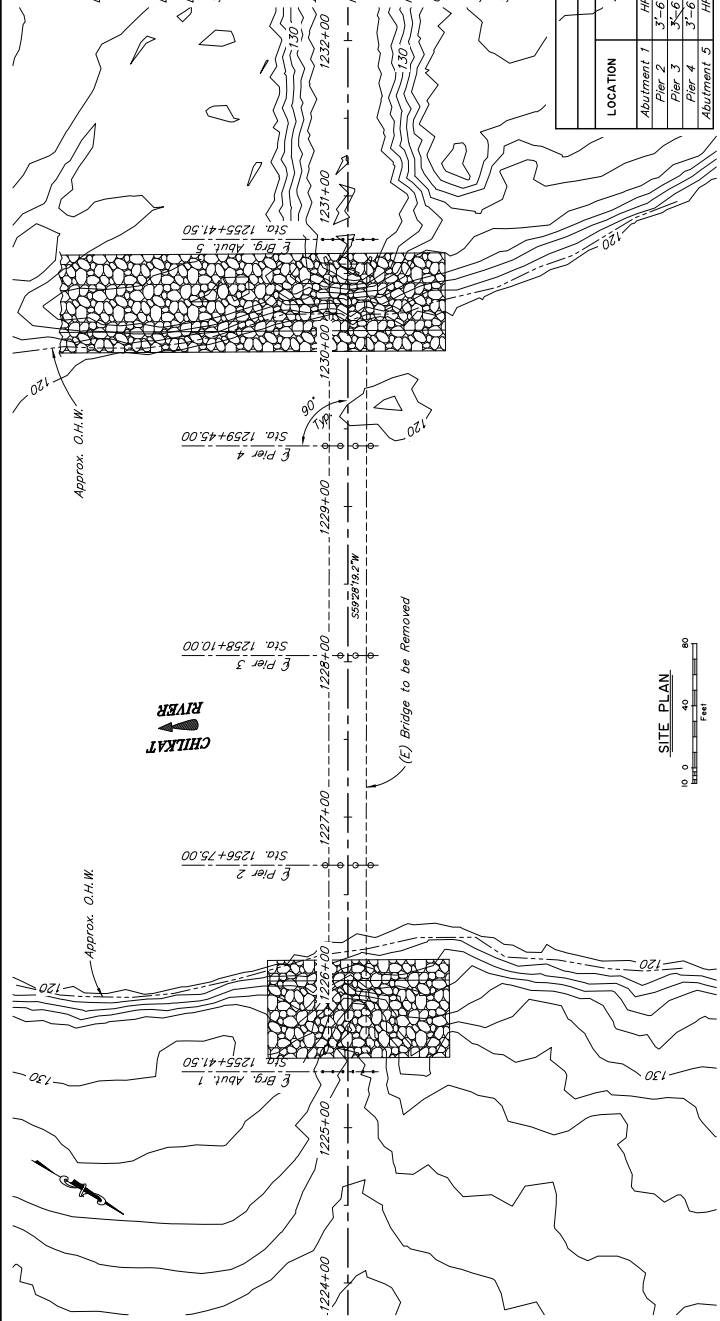
REINFORCEMENT: ASTM A706, Fy = 60,000 psi  
Space reinforcement, unless otherwise noted.  
Headed bars = ASTM A970.

PRESTRESSED CONCRETE: See "GIRDERS" Dwg.

CONCRETE: Class A Concrete, f'c = 4000 psi.  
Class A-A Concrete - approach slabs, f'c = 5000 psi.

STRUCTURAL STEEL: ASTM A709, Grade 36T3, Fy = 36,000 psi, unless otherwise noted.

STRUCTURAL STEEL PILING: H-Piles - ASTM A709, Grade 50T3, Fy = 50,000 psi.  
Pipe Piles - API 5L X52 PSL2, Fy = 52,000 psi.  
Pile Tip reinforcing is required.



**PILE DATA TABLE**

LOCATION	PILE TYPE	DRIVING CRITERIA		DESIGN DATA	
		MINIMUM PENETRATION (ft)	ESTIMATED PILE TIP ELEVATION (ft)	STRENGTH I FACTORED RESISTANCE (k)	NOMINAL RESISTANCE (k)
Abutment 1	HP14x17				
Pier 2	3'-6" x 1' Pipe				
Pier 3	3'-6" x 1' Pipe				
Pier 4	3'-6" x 1' Pipe				
Abutment 5	HP14x17				

**BRIDGE BASIS OF ESTIMATE**

ITEM NO.	ITEM	UNIT	SUBST.	SUPERST.	TOTAL

**HYDRAULIC & HYDROLOGIC SUMMARY**

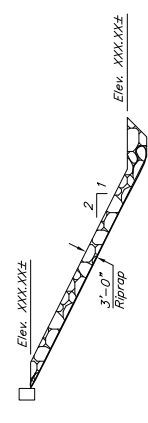
Flood Frequency (Tr.)	50	100	500
Exceedance Probability (%)	2	1	0.2
Design Discharge (ft <sup>3</sup> /sec)			
Design High Water (ft)			
Anticipated Add'l Backwater (ft)			
Contraction Scour (ft)			
Abutment Scour (ft)			
Pier Scour (ft)			

Drainage Area for this crossing: XX.X square miles.

Hydraulic Capacity: cfs at Low Superstructure Elevation which has an exceedance probability of equal to or less than 0.2 percent.

Total scour equals contraction scour + local scour.

- ABBREVIATIONS:**
- f.f. = far face
  - Hwy. = highway
  - LP = pound feet
  - LS = lump sum
  - Lt. = left
  - max. = maximum
  - min. = minimum
  - min. = minimum, stabilized earth
  - mt. = meter
  - n.a. = not applicable
  - n.e. = not calculated
  - n.f. = near face
  - No. = number
  - o.k. = OK
  - PT = Post Tensioned
  - RT = Right
  - PVC = point of vertical curve
  - PVI = point of vertical intersection
  - PVT = point of vertical tangent
  - Rt. = right
  - Sta. = station
  - Sq. = square
  - Sq. Yd. = square yard
  - Symm. = symmetric
  - Typ. = typical



**OPTION 3**

**PRELIMINARY PLAN**

BRIDGE NO. 742  
 DWG. NO. 2

**CHILKAT RIVER BRIDGE**  
 HAINES HIGHWAY  
**SITE PLAN**

STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 BRIDGE SECTION

DESIGNED BY:	Checked:	HYDRAULICS BY:	Checked BY:
DRAWN BY:	Checked:	FOUNDATIONS REVIEWED BY:	Checked BY:
QUANTITIES BY:	Checked:		

# MEMORANDUM

# State of Alaska

Department of Transportation & Public Facilities  
Statewide Design & Engineering Services Division /Bridge Section

**TO:** Reuben Yost  
Project Manager  
Southeast Region

**DATE:** September 8, 2010

**BRIDGE NO:** 742  
**TELEPHONE NO:** 465-2975  
**FAX NUMBER:** 465-6947  
**TEXT TELEPHONE:** 465-3652

**FROM:** *FOR* Richard A Pratt, P.E. *MRK*  
Chief Bridge Engineer

**CONTACT:** Elmer E. Marx, P.E.  
465-6941  
elmer.marx@alaska.gov

**RE:** Option 4 – two bridges

**SUBJECT:** Chilkat River Bridge  
Haines Highway

As requested, we have prepared a fourth preliminary bridge option for the subject project. Specifically, we have developed the preliminary plans and cost estimate for rehabilitation and strengthening of the existing bridge in combination with constructing a new bridge parallel to the existing structure. Each bridge would accommodate one-way traffic and pedestrian facilities.

Please refer to the memo dated October 29, 2009 for information about the previous bridge options. Retaining the number scheme initiated in the previous memo, we are identifying this configuration as Option 4. As indicated on the following sheets, we do not recommend that either Option 1 or Option 4 be considered for further development.

We are also providing additional perspective on the proposed rehabilitation (Option 1 and 4) and widening (Option 1) of the existing Chilkat River Bridge.

The preliminary bridge cost estimate for Option 4 is attached. The estimate includes all bridge-related pay items (including temporary work structures) as well as an 11% mobilization allowance (10% of subtotal cost including mobilization and demobilization pay item), a 15% construction engineering allowance, and a 4.79% ICAP allowance.

We have very little foundation; hydraulic, topographic, or other design information for this site. In addition, due to the unpredictable nature of rehabilitation work and the unusual configuration, we recommend using a 30% contingency for this option.

Please contact Elmer if you have any questions.

EEM/bm

*Providing for the safe movement of people and goods and the delivery of state services*

**Option 4 – Rehabilitate the existing bridge and build new bridge**

503.75 FT long, ten-span, steel girder bridge

540 FT long, four-span precast concrete girder bridge

Maximum span length of existing bridge = 50 FT

Vertical clearance under existing bridge (navigation) ~ 9 FT

Bridge related pay items (w/o mobilization, CE, ICAP, or contingency) = \$10M

Bridge related pay items (w/ mobilization, CE, ICAP, and 30% contingency) = \$17M

ADVANTAGES	DISADVANTAGES
Although unusual, is technically feasible.	Refer to the disadvantages of Option 1 of the October 29, 2009 memo
If the rehabilitated existing bridge developed problems at a future date (e.g. fatigue cracking in the 50+ year old girders), the new parallel bridge could be used to accommodate traffic. However, the new bridge is not wide enough to accommodate two-way traffic so traffic control would be required.	Depending upon the permissible location of the new bridge, the same work structure required for rehabilitating the existing bridge may be used for construction of the new bridge (this is the assumption used to prepare the cost estimate). On the other hand, it may be necessary to build a separate work bridge for each structure.
After strengthening, the existing bridge would be capable of accommodating vehicle loads similar to that of the new parallel bridge.	The new parallel bridge would be relatively narrow. However, to prevent the new bridge from being classified as fracture critical, at least three supporting piles/columns are required. Geometric restrictions on pile spacing are responsible for the required bridge width.
	If the existing bridge is not strengthened, it would still restrict loads entering or exiting Haines (depending upon which bridge carried inbound / outbound traffic).
	A temporary work bridge will be needed to rehabilitate the existing bridge and to build the new bridge. In order to minimize the cost, that same work bridge could be used for both structures but would need to set between the two. Consequently, the resulting centerline distance between the existing and new bridge would be about 60 feet. Right of way and roadway realignment issues would need to be addressed and may be expensive.

We do not recommend that this option be advanced for further consideration.

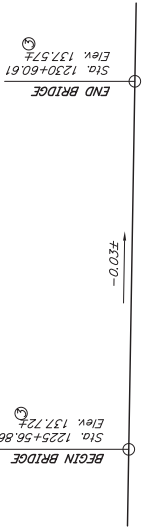


**STATE OF ALASKA DOT/PF  
COMPUTATIONS  
Chilkat River Bridge  
Option 4  
Rehabilitate Existing Bridge AND Build New Bridge  
ESTIMATE OF QUANTITIES AND COST**

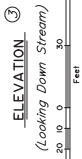
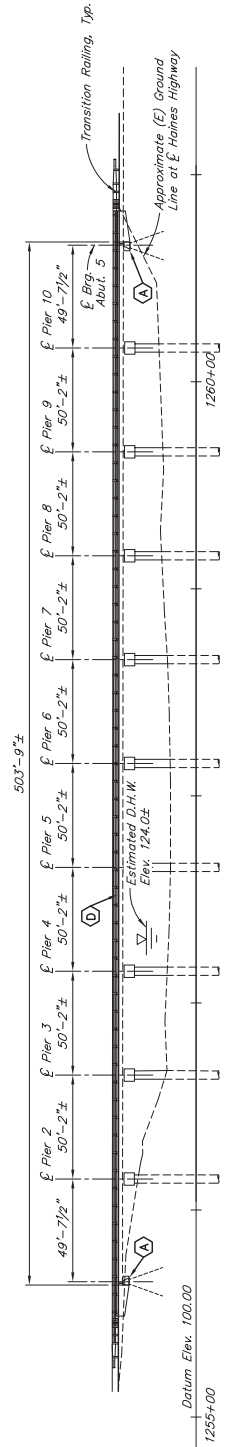
DATE 9/8/2010  
BRIDGE No. 742  
By EEM

Item No.	ITEM	UNIT	UNIT PRICE	QUANTITY	AMOUNT
<b>Rehabilitation Pay Items</b>					
501(1)	Class A Concrete	LS-CY	\$1,200	550	\$660,000
501(2)	Class A-A Concrete	LS-CY	\$1,400	350	\$490,000
503(1)	Reinforcing Steel	LS-LBS	\$2.25	150,000	\$337,500
503(2)	Epoxy Coated Reinforcing Steel	LS-LBS	\$2.50	185,000	\$462,500
504(1)	Structural Steel	LS-LBS	\$6.00	80,000	\$480,000
505(5B)	Furnish Structural Steel Piles (48"x 1" PIPE)	LF	\$450	2,160	\$972,000
505(6B)	Drive Structural Steel Piles (48" x 1" PIPE)	LF	\$75	2,160	\$162,000
505(11)	Pile Restrike	DAY	\$3,000	33	\$99,000
507(1)	Steel Bridge Railing	LF	\$250	1,067.5	\$266,875
510(1)	Removal of Concrete Bridge Deck	SF	\$25	13,100	\$327,500
512(x)	Temporary Work Structure	LS-SF	\$100	17,000	\$1,700,000
513(1)	Field Painting Steel Structures	LS-SF	\$25	17,500	\$437,500
606(12)	Guardrail / Bridge Rail Connection	EACH	\$3,000	4	\$12,000
611(1)	Riprap, Class II	CY	\$50	3,000	\$150,000
631(2)	Geotextile, Erosion Control, Class 2	SY	\$2.50	3,000	\$7,500
<b>New Bridge Pay Items</b>					
205(3)	Foundation Fill	CY	\$50	1,200	\$60,000
501(1)	Class A Concrete	LS-CY	\$1,200	510	\$612,000
501(2)	Class A-A Concrete	LS-CY	\$1,600	30.7	\$49,185
501(7)	Precast Concrete Member	EACH	\$75,000	16	\$1,200,000
503(1)	Reinforcing Steel	LS-LBS	\$2.25	90,000	\$202,500
503(2)	Epoxy Coated Reinforcing Steel	LS-LBS	\$2.50	67,500	\$168,750
505(5A)	Furnish Structural Steel Piles (HP14x117)	LF	\$100	800	\$80,000
505(6A)	Drive Structural Steel Piles (HP14x117)	LF	\$25	800	\$20,000
505(5B)	Furnish Structural Steel Piles (36" x 3/4" PIPE)	LF	\$375	1,080	\$405,000
505(6B)	Drive Structural Steel Piles (36" x 3/4" PIPE)	LF	\$75	1,080	\$81,000
505(7)	Pile Driving Equipment	LS	\$100,000	1	\$100,000
505(11)	Pile Restrike	DAY	\$3,000	15	\$45,000
507(1)	Steel Bridge Railing	LF	\$250	1,160	\$290,000
508(1)	Waterproofing Membrane	LS-SF	\$3.00	11,600	\$34,800
606(12)	Guardrail / Bridge Rail Connection	EACH	\$3,000	4	\$12,000
<b>SUBTOTAL</b>					<b>\$9,924,610</b>
	Mobilization & Demobilization	LS	11%		\$1,102,734
<b>SUBTOTAL</b>					<b>\$11,027,345</b>
	Construction Engineering	LS	15%		\$1,654,102
<b>SUBTOTAL</b>					<b>\$12,681,446</b>
	ICAP	LS	4.79%		\$607,441
<b>SUBTOTAL</b>					<b>\$13,288,888</b>
	Contingency	LS	30%		\$3,986,666
<b>TOTAL</b>					<b>\$17,275,554</b>

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA		2010		



EXISTING PROFILE GRADE DATA  
No Scale

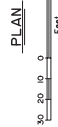
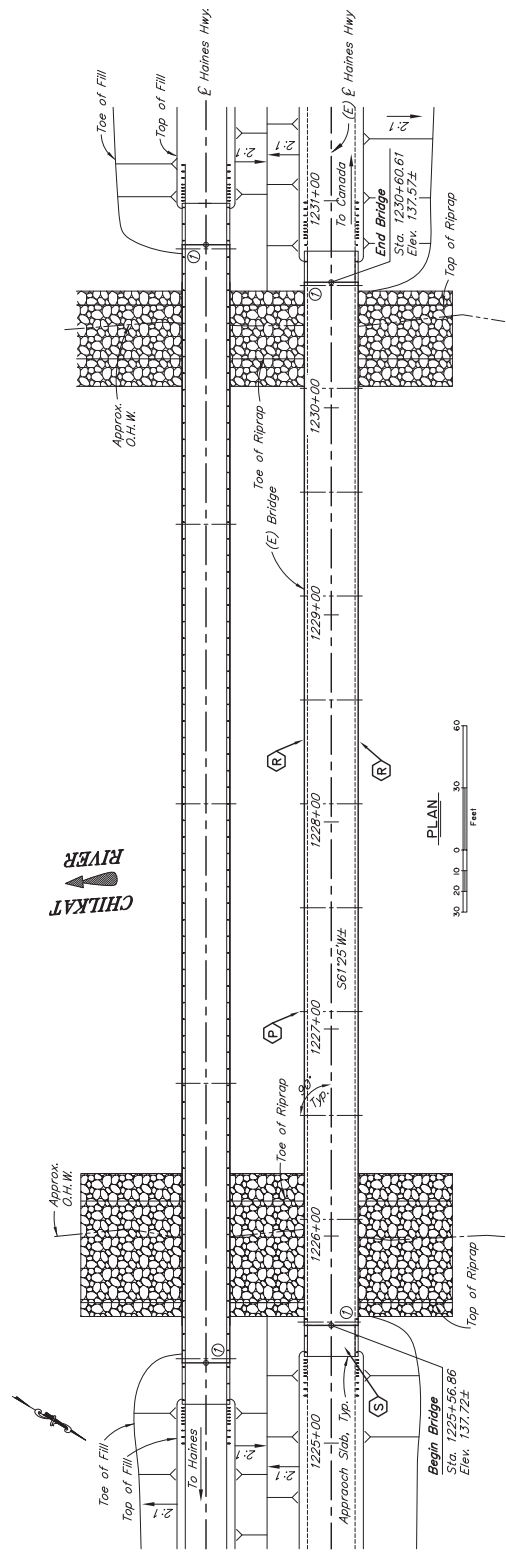


**LEGEND**

- (A) - Abutment seat widening
- (D) - New Deck
- (G) - Repaint (E) Girders
- (P) - New pier Cap and Piles, Typ.
- (R) - New Railing
- (S) - Approach Slab

**BRIDGE DRAWING INDEX**

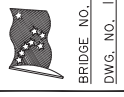
TITLE	DWG. NO.
GENERAL LAYOUT	1
TYPICAL SECTION	2
SITE PLAN	3



**PRELIMINARY PLAN REHABILITATION OPTION 4**

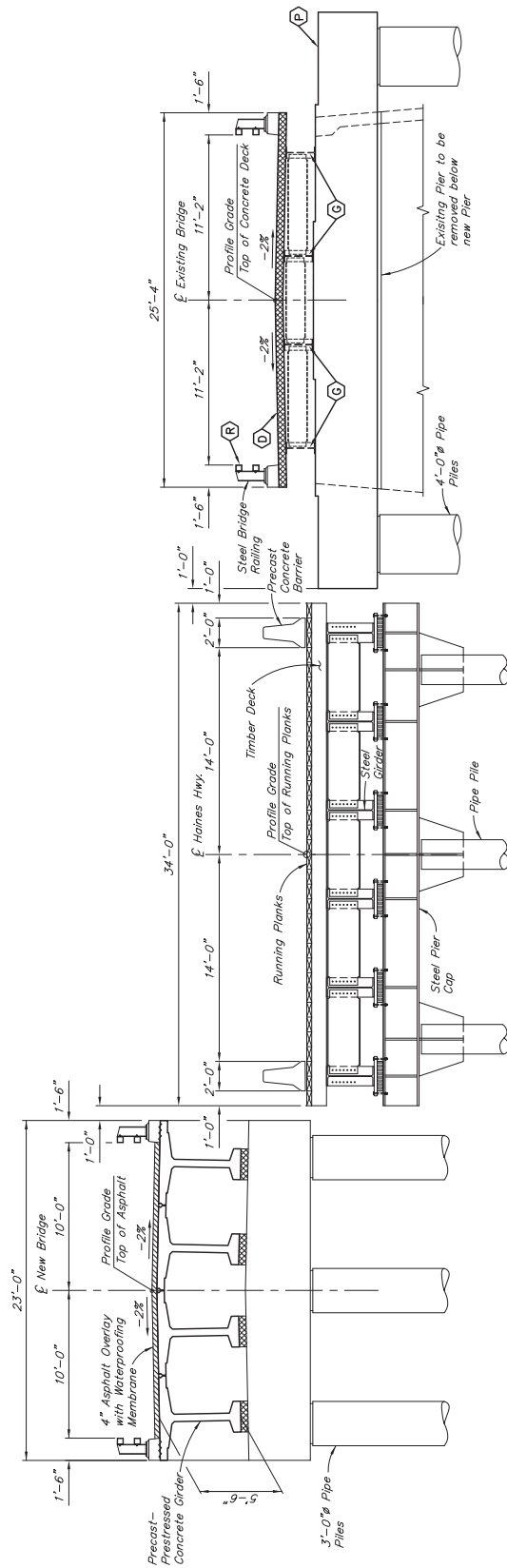
- ① Approximate location of Bridge Number Plate.
- ② Proposed Station 1230+00 is equal to the existing station 1260+06.89.
- ③ Elevations are for existing Bridge.

<p>STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES BRIDGE SECTION</p>		<p>CHILKAT RIVER BRIDGE HAINES HIGHWAY GENERAL LAYOUT</p>	
DESIGNED BY:	Engineer	CHECKED BY:	Engineer
DRAWN BY:	Sam Soble	SPECIFICATIONS BY:	Emer Marx
QUANTITIES BY:	Emer Marx	APPROVAL RECOMMENDED BY:	Rich Pratt
CHECKED:	Emer Marx	CHECKED:	P S & E COMPARED:
CHECKED:	Emer Marx	CHECKED:	Engineer
CHECKED:	Emer Marx	CHECKED:	Engineer



BRIDGE NO. 742  
DWG. NO. 1

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA		2010		



PROPOSED BRIDGE

WORK TRESTLE

EXISTING BRIDGE



LEGEND

(D)	New Deck
(E)	Repair (E) Girders
(P)	New pier Cap and Piles, Typ.
(R)	New Railing

⊗ Denotes removal and replacement of bridge deck

**PRELIMINARY PLAN**  
**REHABILITATION**  
**OPTION 4**

DESIGNED BY:	Checked:	Engineer
DRAWN BY:	Checked:	Engineer
QUANTITIES BY:	Checked:	Engineer

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC FACILITIES  
BRIDGE SECTION

CHILKAT RIVER BRIDGE  
HAINES HIGHWAY  
TYPICAL SECTION



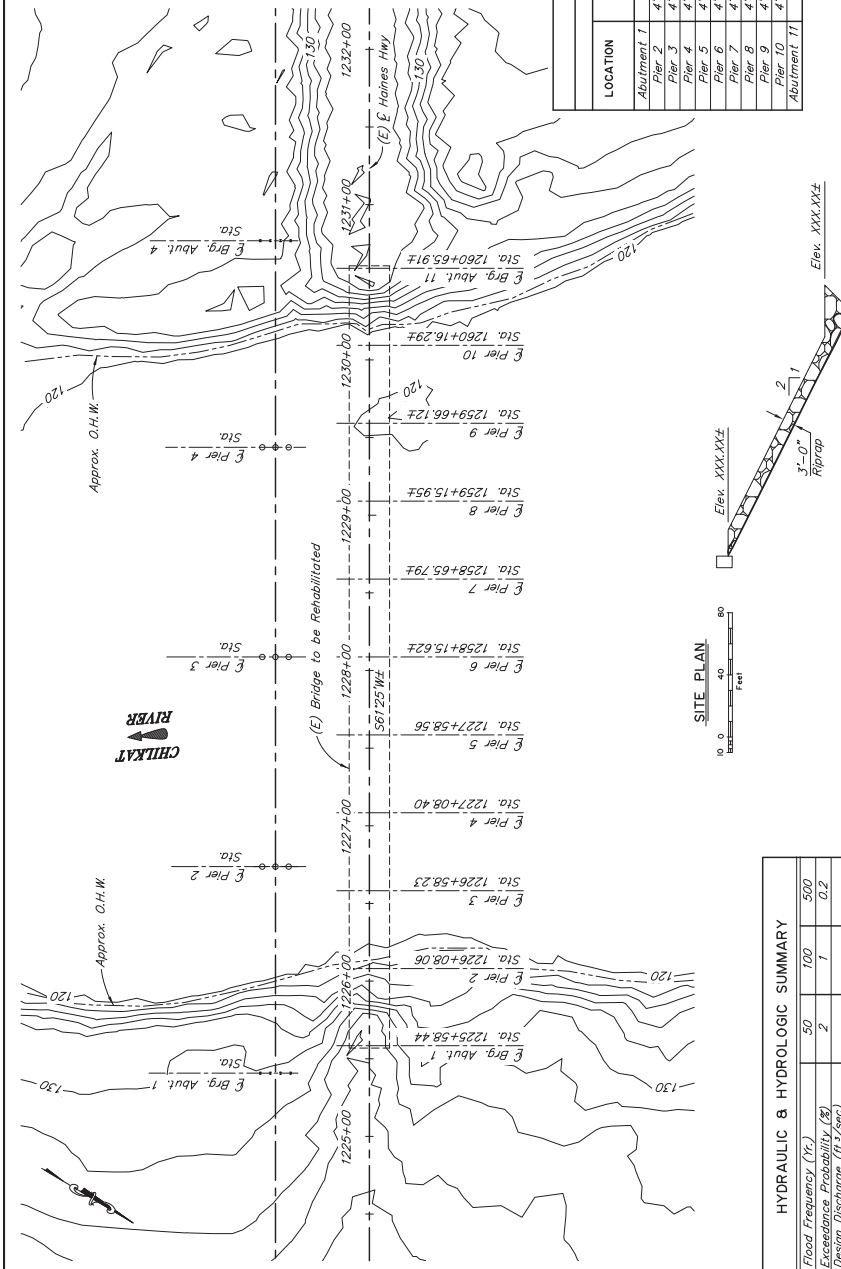
**GENERAL NOTES**

DESIGN: AASHTO LRFD Bridge Design Specifications, Fourth Edition, 2007, with latest interim specifications.  
 Seismic design per AASHTO Guide Specifications for LRFD Seismic Bridge Design, 2009

LIVE LOAD: HL-93  
 DEAD LOAD: Includes 50 psf for all wearing surfacing.  
 SEISMIC PARAMETERS: FCA = 0.322, S<sub>s</sub> = 0.744, S<sub>w</sub> = 0.287  
 Live Class = Low  
 Liquefaction Potential = Low  
 AASHTO 7% probability of exceedance in 75 years.

ICE LOAD: Effective ice crushing strength = 16 tsf  
 Design ice thickness = 1 ft.  
 REINFORCEMENT: ASTM A706, F<sub>y</sub> = 60,000 psi  
 Space reinforcement evenly unless otherwise noted.  
 Headed bars - ASTM A970.

PRESTRESSED CONCRETE: See "CIRCLERS" Dwg.  
 CONCRETE: Class A Concrete, f'c = 4000 psi.  
 Class A-A Concrete - approach slabs, f'c = 5000 psi.  
 STRUCTURAL STEEL: ASTM A709, Grade 50T3, F<sub>y</sub> = 36,000 psi, unless otherwise noted.  
 STRUCTURAL STEEL PILING: H-Piles - ASTM A709, Grade 50T3, F<sub>y</sub> = 50,000 psi.  
 Pipe Piles - API 5L X52 PSL2, F<sub>y</sub> = 52,000 psi.  
 Pipe tip reinforcing is required.



**HYDRAULIC & HYDROLOGIC SUMMARY**

Flood Frequency (yr.)	50	100	500
Exceedance Probability (%)	2	1	0.2
Design Discharge (ft <sup>3</sup> /sec)			
Design High Water (ft)			
Anticipated Add'l Backwater (ft)			
Abutment Scour (ft)			
Pier Scour (ft)			

Drainage Area for this crossing: XXX square miles.  
 Hydraulic Capacity: cfs at Low Superstructure Elevation  
 which has an exceedance probability of equal to or less than 0.2 percent.  
 Total scour equals contraction scour + local scour.

**PRELIMINARY PLAN**

**REHABILITATION**

DESIGNED BY: <i>Elmer Marx</i>	CHECKED: <i>Elmer Marx</i>	HYDRAULICS BY: <i>Elmer Marx</i>	CHECKED BY: <i>Elmer Marx</i>
DRAWN BY: <i>Sam Soble</i>	CHECKED: <i>Elmer Marx</i>	FOUNDATIONS REVIEWED BY: <i>Elmer Marx</i>	CHECKED: <i>Elmer Marx</i>
QUANTITIES BY: <i>Elmer Marx</i>	CHECKED: <i>Elmer Marx</i>		

**OPTION 4**

**PILE DATA TABLE**

LOCATION	PILE TYPE	MINIMUM PENETRATION (ft)	DRIVING CRITERIA		DESIGN DATA	
			ESTIMATED PILE TIP ELEVATION (ft)	DRIVING RESISTANCE (k)	STRENGTH FACTOR	NOMINAL RESISTANCE LOAD (k)
Abutment 1	HPI4x117					
Pier 2	4"-0"Øx17' Pipe					
Pier 3	4"-0"Øx17' Pipe					
Pier 4	4"-0"Øx17' Pipe					
Pier 5	4"-0"Øx17' Pipe					
Pier 6	4"-0"Øx17' Pipe					
Pier 7	4"-0"Øx17' Pipe					
Pier 8	4"-0"Øx17' Pipe					
Pier 9	4"-0"Øx17' Pipe					
Pier 10	4"-0"Øx17' Pipe					
Abutment 11	HPI4x117					

**ABBREVIATIONS:**

- C = Centerline
- E = Elevation
- Hwy. = Highway
- LB = Linear foot
- LP = Linear foot
- LS = Linear foot
- LS = Linear foot
- max. = maximum
- min. = minimum
- MSE = Mechanically-stabilized earth
- n.a. = not applicable
- n.f. = near face
- No. = number
- O.H.W. = ordinary high water
- col. = column
- C.P. = cast in place
- Co. = clear, clearance
- Col. = column
- Cross. = cross-section
- D.H.W. = Design High Water
- dia. = diameter
- Dwg. = drawing
- (E) = existing
- Elev. = elevation
- Elev. = edge of water
- e.v. = edge of water
- E.C.W. = edge of water
- e.w. = edge of water

**BRIDGE BASIS OF ESTIMATE**

ITEM NO.	UNIT	SUBST.	SUPERST.	TOTAL

Item numbers are for reference only. Quantities shown are not necessarily the pay quantities nor the total quantity of the particular item.

**CHILKAT RIVER BRIDGE**  
**HAINES HIGHWAY**  
**SITE PLAN**

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STATE OF ALASKA  
 DEPARTMENT OF TRANSPORTATION  
 AND PUBLIC FACILITIES  
 BRIDGE SECTION

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BRIDGE NO. 742  
 DWG. NO. 3

### Current Condition and Observations

All bridges open to the public are inspected on a two-year cycle. A copy of the 2008 bridge inspection report is attached to this memo. Some of the more significant observations for the bridge include:

- The concrete pier walls have spalls and other signs of distress
- The deck expansion joints leak water onto the end diaphragms and substructure. The water is contributing to deterioration of the structure
- The bridge deck has spalls, exposed reinforcing bars, and delaminated concrete areas
- The bridge rail is in poor condition
- The bridge is classified as “scour critical”

### Sufficiency Rating and Live Load Capacity

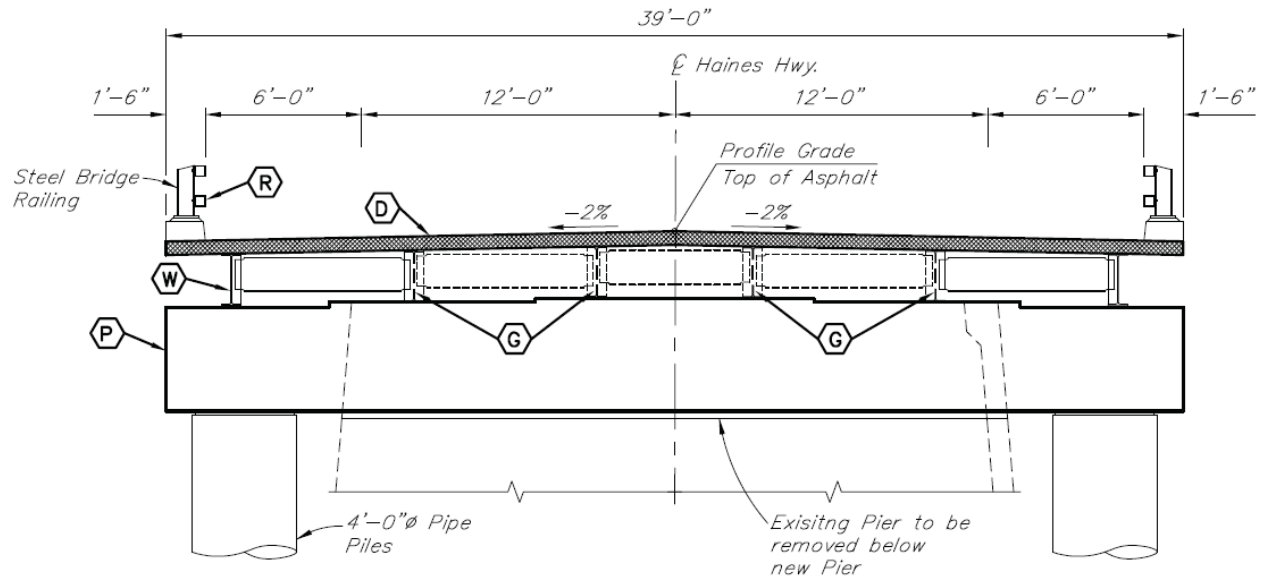
Each bridge is assigned a “sufficiency rating” that is based upon the bridge inspection observations and subsequent capacity analysis. The sufficiency rating formula is a method of evaluating factors that indicate a bridge’s sufficiency to remain in service. The result of the formula is a percentage in which 100 percent represents a sufficient bridge and zero percent represents an insufficient bridge.

In order to qualify for FHWA bridge rehabilitation funds, the sufficiency rating must be less than 80 and a “triggering” item must be present (e.g., deck rating less than 3). A sufficiency rating less than 50 qualifies a bridge to be eligible for FHWA replacement funds. The current sufficiency rating for the Chilkat River Bridge is 56.5 but the bridge has no “triggering item.” Thus, neither bridge rehabilitation nor replacement is eligible for Federal Bridge Funds.

The legal highway truck load is often referred to as the HS-20 live load. The live load capacity of a bridge can be expressed in terms of this “HS” loading nomenclature – higher numbers representing greater truck capacity. The Chilkat River Bridge’s inventory load rating is HS-13.3. This load rating is less than that associated with legal truck loads but does not yet require posting for restricted truck loads. The bridge’s operating rating is HS-29.5. Although this load capacity can accommodate most of the overloads desiring to cross the bridge, it is not adequate to accommodate the heavier loads that would be anticipated for mining or pipeline activities or those required to reconstruct the existing bridge (e.g. cranes).

### Bridge Widening (Option 1) and Rehabilitation (Option 1 and 4) Considerations

A copy of the bridge “As-Built” drawings is attached to this memo. As indicated in the drawings, the bridge has a 24-ft wide roadway. The Haines Highway typical roadway section is 36-ft wide. The existing bridge would need to be widened by 12-ft to match the width of the roadway. It is proposed to widen the bridge symmetrically about the bridge centerline. One line of girders would be required along each side of the existing structure – see Figure 1.



**Figure 1 – Widened and Rehabilitated Bridge (Option 1)**

The existing piers are not wide enough to accommodate the proposed girder lines and deck. Thus, the piers would need to be widened to accommodate the girders. The piers would also need to be strengthened to accommodate the larger loads and seismic demands (see subsequent section) and to address the “scour critical” condition of the existing piles. In order to widen the existing pier in a manner similar to the existing configuration, a cofferdam would be required. The bridge is close to the water and a conventional cofferdam cannot be placed around the piers without removing the existing girders from the piers. Figure 2 shows a sheet pile cofferdam placed around an existing bridge pier with the superstructure removed.

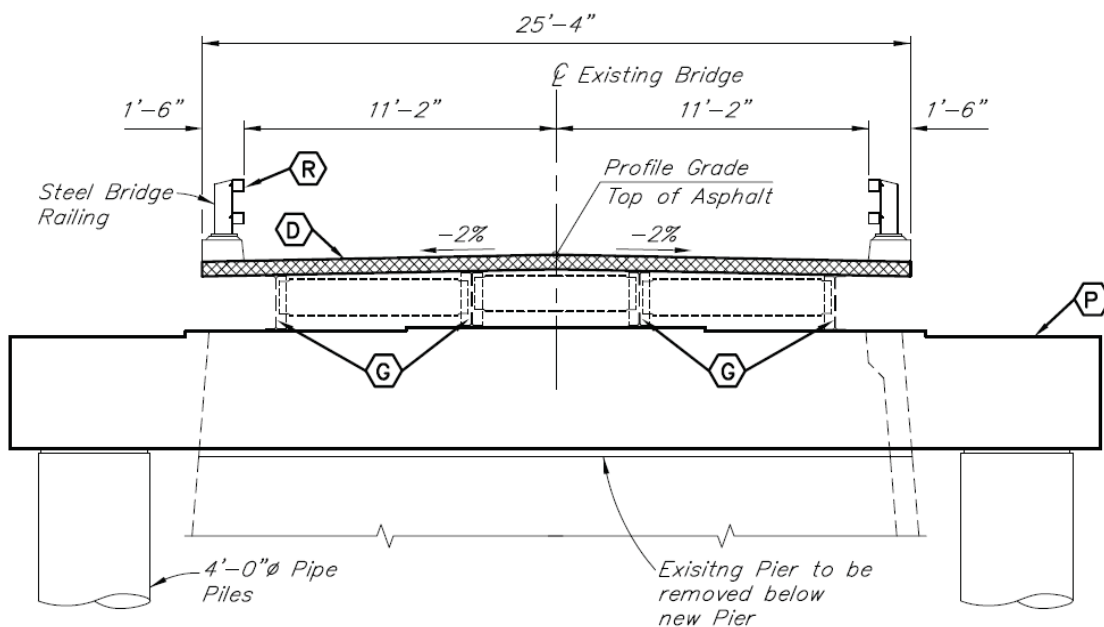


**Figure 2 - Cofferdam around existing pier (Soldotna, AK)**



Removing the girders and building cofferdams around the existing piers is very expensive (very approximately \$250,000 for each of the nine piers) and time consuming. More cost-effective methods of widening and strengthening the piers are possible. Specifically, large diameter pipe piles could be driven to each side of the existing pier. The two piles would be filled with a reinforced concrete core. A concrete pile cap beam would be cast above the two large diameter pipe piles, encapsulating the upper portion of the existing pier wall. The lower portion of the wall would be removed after the new cap beam was complete – see Figure 1. The rehabilitated pier would improve the seismic performance of the bridge as well as addressing the “scour critical” bridge classification.

Although Option 4 does not require the bridge deck to be widened, the most cost effective method of addressing the seismic and scour deficiencies of the bridge is to place large diameter pipe piles to each side of the existing pier. Thus, even if the superstructure is not widened, the substructure rehabilitation recommendations are unchanged. In this case, the pier cap beam would be somewhat wider than the bridge deck – see Figure 3.



**Figure 3 - Rehabilitated Bridge without Superstructure Widening (Option 4)**

The existing bridge does not have adequate strength to accommodate the design HS-20 live load. The bridge would need to be strengthened to meet current standards. Cover plates could be welded to the existing steel girders to increase their strength. Cover plates have been associated with steel bridge fatigue problems in the past and would likely require special inspection if utilized.

Although not verified by physical testing, bridges of this vintage were typically coated in lead-based paint. Repainting of the bridge may be required near the expansion joints and along the flanges where cover plates would be required. A containment structure

would need to be placed around most of the bridge during painting to satisfy environmental requirements. Consequently, the cost for repainting a bridge coated in lead-based paints is quite high.

If the existing bridge is retained, the bridge deck would need to be replaced because:

1. The deck is in poor condition
2. Access to the existing girders is required for the strengthening work
3. The bridge deck must be widened (Option 1 only)

The bridge does not have adequate strength to accommodate the large construction equipment required to set girders, drive piles, etc. Furthermore, the bridge would not be capable of accommodating traffic during replacement. Thus, a temporary work/detour bridge is required. The temporary bridge would likely need to be built between the existing bridge and the new bridge to facilitate construction of each. Figure 4 illustrates a standard trestle style work/detour bridge that would be required to accommodate construction equipment and highway traffic.



**Figure 4 - Temporary trestle style work/detour bridge (Soldotna, AK)**

Seismic Vulnerability and Retrofit

The bridge is comprised of multiple simple spans. The girder end supports are inadequate to accommodate the seismic movements anticipated at this site. Bridges with this type of inadequate bearing seat width have failed during earthquakes – see Figure 5.



Figure 5 - Earthquake induced bridge damage (Alaska 1964)

In order to address seismic deficiencies, numerous retrofit details would be needed. The pipe pile cap beam would need to be widened. Cable restrainers may be required to tie adjacent girder ends together. Concrete shear keys between the steel girders would likely be needed.



### Bridge Railing

The existing bridge rail does not meet current safety standards. The existing rail is damaged and would be removed along with the deck. In order to meet the current safety standards, a new crash-tested bridge rail system is required. We propose to use the standard metal two-tube rail that is used throughout the state. If necessary, a three-tube combination pedestrian-traffic railing would be used.

### Navigational Clearance

No significant reduction (less than two feet) in the navigation channel width would result as a consequence of the proposed bridge work.

### Remaining Service Life

Although many new bridge components are proposed for these options (i.e., bridge railing, cast-in-place deck, exterior girders, steel cover plates, pier caps, and concrete-filled steel pipe piles) the existing steel girders and portions of the concrete abutments and piers are retained in the completed structure. These elements have been in service for over 50 years and would not be expected to provide another 50 years of maintenance-free service. Future maintenance, repairs, and bridge replacement should be anticipated to occur in a period not typically expected for a “new” bridge.

### Bridge Appearance

As indicated, there are numerous design objectives including:

- Widening (Option 1 only)
- Strengthening
- Seismic retrofitting and scour countermeasures
- Traffic safety and rail improvements
- Maintenance and painting

The most technically and economically feasible means of addressing these objectives are outlined above. The proposed construction details would appreciably alter the appearance of the bridge.

As indicated in the October 2009 memo, due to the technical challenge and economic high cost, we recommend against advancing the bridge rehabilitation (Option 1 and 4) and widening (Option 1) options for further consideration.

## **Bridge Salvage Documentation**

## Tuttell, Maryellen

---

**Subject:** FW: 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge  
**Attachments:** 742asbuilts1958.pdf; 0742\_Routine\_2010.pdf

---

**From:** Marx, Elmer E (DOT)  
**Sent:** Monday, April 02, 2012 5:15 PM  
**To:** Van Alstine, Matthew J (DOT)  
**Cc:** Scholl, James W (DOT); Pratt, Richard A (DOT)  
**Subject:** RE: 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge

Hello, Matt and Jim.

We recommend against the reuse of the existing Chilkat River Bridge(#742) at the Klehini River location.

Some of the factors contributing to our recommendation include:

1. The substructure (piers) would not be salvageable and could not be reused at a new location. The existing piles are small and encased in concrete.
2. The Klehini site is in a Seismic Design Category (SDC) "D" – this is the highest, most hazardous zone. The new bridge piers will need to meet current design standards and as such, will not look anything like the existing piers. Thus, the appearance of the bridge will significantly altered. The use of so many unnecessary additional piers (proposed bridge requires only one or two new piers) will be expensive.
3. The cast-in-place concrete deck is in poor condition and will need to be removed from the steel girders (see attached inspection report). Thus, the existing deck cannot be used in the new installation. Based upon past experience, removing the deck from the girders and shear lugs will be difficult and may result in girder damage.
4. The existing girders were design for "H20" live load. This live load is only about 2/3 of the current "HL93" design live load. Thus, the girders would need to be strengthened or the spacing between girders would need to be reduced by about 2-ft. In either situation, the superstructure appearance (from underneath anyway) would be appreciably different.
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7. As with other bridge of this vintage, the existing Chilkat River Bridge girders are most likely coated in lead based paint. The Department is responsible for the removal and proper disposal of the lead based paint prior to reusing the girders in a subject project. Removal of lead based paint has proven to be somewhat expensive.
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10. FHWA funded projects do not typically include the use of salvaged bridge materials. As we understand, we would need to justify the use of the old material in the new bridge.

Based upon the list of concerns, the cost of using the old steel girders will almost certainly result in a more expensive structure. That is, all of the materials would be new except for the steel girders which would need to be sandblasted, strengthened, repainted, re-erected and cover with a new concrete deck and railing.

Perhaps the existing bridge can be photographed, recorded and cataloged then recycled.

Please let me know if you have any questions.

Regards,

Elmer  
465-6941

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**From:** Van Alstine, Matthew J (DOT)  
**Sent:** Monday, April 02, 2012 1:38 PM  
**To:** Marx, Elmer E (DOT)  
**Cc:** Scholl, James W (DOT)  
**Subject:** RE: 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge

Hi Elmer:  
What are your thoughts on this?  
Thanks,  
Matt

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**From:** Scholl, James W (DOT)  
**Sent:** Monday, April 02, 2012 1:34 PM  
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**Cc:** Marx, Elmer E (DOT)  
**Subject:** 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge

Matt, As you know, the Chilkat R. Bridge (#0742) will be replaced as a part of of the subject. FHWA has determined the bridge to be eligible for the National Register of Historic Places; that means it is also a section 4(f) property. What we need to do is attempt to find parties that may re-use the bridge.

I know you are project manager for 69377 HNS: Klehini R. Bridge (#1216) Replacement Project. Can you use the Chilkat R. Bridge to replace the Klehini R. Bridge?

If you need more information let me know.

*Jim Scholl*

Environmental Analyst  
ADOT&PF SE Region  
6860 Glacier Highway  
POB 112506  
Juneau Alaska 99811-2506

[jim.scholl@alaska.gov](mailto:jim.scholl@alaska.gov)

(907) 465 4498

(907) 465 3506 FAX

## Tuttell, Maryellen

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**Subject:** FW: 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge at Wells

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**From:** Roger Schnabel [<mailto:Roger@seroad.com>]  
**Sent:** Tuesday, April 03, 2012 2:29 PM  
**To:** Scholl, James W (DOT)  
**Subject:** RE: 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge at Wells

Mr. Scholl:

Per the note below Southeast Roadbuilder's Inc. is not interested in this bridge. As you may be aware our firm removed and replaced the Little and Big Boulder bridges on this same highway (7 and 10 miles north) in 2005 and salvaged these bridges which are still in inventory with no apparent interest. Salvage and reuse doesn't appear to be of much value, considering the time and effort it would take to keep them structurally acceptable.

Thanks for thinking of us however.

Sincerely,  
Roger

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**From:** Scholl, James W (DOT) [<mailto:jim.scholl@alaska.gov>]  
**Sent:** Tuesday, April 03, 2012 1:22 PM  
**To:** Roger Schnabel  
**Subject:** 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge at Wells

Good Afternoon Roger, As we discussed, DOT&PF is proposing to replace the Chilkat R. Bridge on the Haines Highway near MP 24. DOT&PF is seeking interest from any third-parties that would be interested in removing and transporting the bridge to another location. Please let me know if SE Road Builders is interested.

*Jim Scholl*

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## Tuttell, Maryellen

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**From:** Scholl, James W (DOT) [jim.scholl@alaska.gov]  
**Sent:** Monday, April 16, 2012 3:30 PM  
**To:** Mark Earnest  
**Cc:** Tuttell, Maryellen  
**Subject:** RE: 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge

Thanks Mark.

*Jim Scholl*

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6860 Glacier Highway  
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**From:** Mark Earnest [mailto:mearnest@haines.ak.us]  
**Sent:** Monday, April 16, 2012 3:25 PM  
**To:** Scholl, James W (DOT)  
**Cc:** Brian Lemcke; Darsie Culbeck  
**Subject:** RE: 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge

Hi Jim,

Thank you for your kind offer; however, given the condition of the Chilkat River bridge (known locally as the Wells bridge), I do not anticipate or expect that the Borough would be in a position to accept that particular structure for reuse at Klehini River, or anywhere else. Although only the Borough Assembly can make an official decision on this matter, they do not meet until April 24. I will forward the information to them at that time, but I will not be recommending that the Borough accept the bridge.

I would like to express my thanks to you for considering us in this process. I realize that the bridge condition information and challenges of re-use came in after our first discussion.

Mark

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**From:** Scholl, James W (DOT) [mailto:jim.scholl@alaska.gov]  
**Sent:** Tuesday, April 03, 2012 7:30 AM  
**To:** Mark Earnest  
**Subject:** FW: 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge

Mark, Below is what DOT&PF Bridge section thinks of re-using the Chilkat R. Bridge for replacement of the Klehini R. bridge (steel bridge). I thought our bridge engineer's analysis might help guide the Borough's decision.

*Jim Scholl*

Environmental Analyst

ADOT&PF SE Region  
6860 Glacier Highway  
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**From:** Marx, Elmer E (DOT)  
**Sent:** Monday, April 02, 2012 5:15 PM  
**To:** Van Alstine, Matthew J (DOT)  
**Cc:** Scholl, James W (DOT); Pratt, Richard A (DOT)  
**Subject:** RE: 68606 HNS: MP 3.5 to 25.3 / Chilkat R. Bridge

Hello, Matt and Jim.

We recommend against the reuse of the existing Chilkat River Bridge(#742) at the Klehini River location.

Some of the factors contributing to our recommendation include:

1. The substructure (piers) would not be salvageable and could not be reused at a new location. The existing piles are small and encased in concrete.
2. The Klehini site is in a Seismic Design Category (SDC) "D" – this is the highest, most hazardous zone. The new bridge piers will need to meet current design standards and as such, will not look anything like the existing piers. Thus, the appearance of the bridge will significantly altered. The use of so many unnecessary additional piers (proposed bridge requires only one or two new piers) will be expensive.
3. The cast-in-place concrete deck is in poor condition and will need to be removed from the steel girders (see attached inspection report). Thus, the existing deck cannot be used in the new installation. Based upon past experience, removing the deck from the girders and shear lugs will be difficult and may result in girder damage.
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