Juneau Access Improvements Project
Draft Supplemental Environmental Impact Statement

Update to Appendix X
Draft Section 404/10 Permit Application
Draft Section 404(b)(1) Analysis

Prepared for:

Alaska Department of Transportation
& Public Facilities
6860 Glacier Highway
Juneau, Alaska 99801-7999

State Project Number: 71100
Federal Project Number: STP-000S(131)

Prepared by:

HDR, Inc.
2525 C Street, Suite 305
Anchorage, AK 99503

September 2014

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U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

OMB APPROVAL NO. 0710-0003
EXPIRES: 28 FEBRUARY 2013

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Jane Middle - Last - Gendron	First - Middle - Last -
Company - Alaska Department of Transportation & Public Facilities	Company -
E-mail Address - jane.gendron@alaska.gov	E-mail Address -
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- 6860 Glacier Highway	Address-
City - Juneau State - Alaska Zip - 99811 Country -	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	**10. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business (907) 465-4499 c. Fax (907) 465-3506	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____
SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Juneau Access Improvements Project (POA-2006-597)

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Berners Bay/Lynn Canal	Address
15. LOCATION OF PROJECT Latitude: °N See Attached Block 15 Longitude: °W See Attached	City - State- Zip-

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality City and Borough of Juneau and Haines Borough
Section - See Attached Township - See Attached Range - See Attached

17. DIRECTIONS TO THE SITE

From downtown Juneau, take Egan Drive northwest 40.5 miles along Glacier Highway to Echo Cove, which is where the project begins (Latitude 58.663344 °N, Longitude -134.903281 °W). Continue north and west 50.8 miles, following the existing alignment of the Glacier Highway from Echo Cove to Cascade Point, along the eastern coast of Lynn Canal, and ending at the proposed ferry terminal just north of the mouth of the Katzehin River delta (Latitude 59.227191 °N, Longitude -135.327309 °W).

18. Nature of Activity (Description of project, include all features)

Place dredged and fill material into approximately 95.7 acres of waters of the U.S. (60.7 acres of palustrine wetlands (primarily forested), and 32.1 acres of marine waters (primarily rocky shore) and 2.9 acres of steam channel), in conjunction with the construction of a 50.8 mile long two-lane highway (including 47.9 miles of new highway and widening of 2.9 miles of the existing Glacier Highway from Echo Cove to Cascade Point) to a new ferry terminal two miles north of the Katzehin River. This project includes modifications to the Skagway Ferry Terminal to include a new end berth and construction of a new conventional monohull ferry to operate between Haines and Skagway. Mainline ferry service would end at Auke Bay. See Attachment 1, Block 18, 21, and 22 Continuation and drawings in Attachment 2 for more information.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of the Juneau Access Improvements Project is to provide improved surface transportation to and from Juneau within the Lynn Canal corridor, that will provide the capacity to meet the transportation demand in the corridor, provide flexibility and improve opportunity for travel, reduce travel time between the Lynn Canal communities of Juneau, Haines, and Skagway, reduce state and user costs for transportation in the corridor. See Attachment 1, Block 19 Continuation. A full discussion of the purpose and need for the proposed project is included in Section 1.4 of the Draft Supplemental Environmental Impact Statement.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Discharge fill material in wetlands, marine waters and streams, as well as dredging in a marine area, to construct a highway and ferry terminal. The highway alignment and ferry terminal and surrounding environments are described in context of topography and other features, such as eagle nest trees, in Section 2.3.3 of the Draft Supplemental Environmental Impact Statement (See Attachment 1, Block 18 Continuation and the drawings in See Attachment 2).

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

See Attachment 1, Block 21-22 Continuation

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres See Attachment 1, Block 21-22 Continuation

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

Avoidance, minimization, and compensatory mitigation were identified, evaluated and finalized during the original permit evaluation process (POA-2006-597-2). This DA permit application reflects an overall reduction to aquatic resource impacts from what was previously authorized. In the current design for Alternative 2B, all palustrine emergent wetlands and estuarine emergent wetlands have been avoided and the need for deep water disposal has been eliminated. Potential impacts to forested wetlands and intertidal areas have been minimized by alignment changes, extensions of bridges, and slope steepening. See Attachment 3, Block 23 Continuation.

24. Is Any Portion of the Work Already Complete? [X] Yes [ ] No IF YES, DESCRIBE THE COMPLETED WORK

The proposed project incorporates the existing Glacier Highway from Echo Cove to Cascade Point, which was constructed for a different purpose under a separate permit. Use of this road avoids the impact of having two parallel roads. The proposed project would widen a portion of the existing Glacier Highway from Echo Cove to Cascade Point.

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- Beth Pendleton, U.S. Forest Service, Regional Forester, Alaska Regional Office, P.O. Box 21628

City - Juneau State - Alaska Zip - 99802

b. Address- Wayne Zigarlik, General Manager, Coeur Alaska, Inc., Kensington Mine, 3031 Clinton Drive, Suite 202

City - Juneau State - Alaska Zip - 99801

c. Address- Robert Loiselle, President/CEO, Goldbelt Inc., 3075 Vintage Blvd, Suite 200

City - Juneau State - Alaska Zip - 99801

d. Address- See Attachment 1, Block 25 Continuation

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
See Attachment 1,	Block 26 continuation				

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

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Attachment 1

USACE Permit Application

Continuation of Question Blocks

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Attachment 1
USACE Permit Application, Continuation of Question Blocks

Block 15-16 Continuation –

Project beginning at Glacier Highway: Latitude 58.663344º N, Longitude -134.903281 ºW
Katzehin Ferry Terminal: Latitude 59.227191º N, Longitude -135.327309ºW
Skagway Ferry Terminal: Latitude 59.450576º N, Longitude -135.326960ºW
Sections, Townships, and Ranges include:

- Township 36 S., Range 63 E., Sections 4, 5, 8, 9, 16, and 20-21
- Township 35 S., Range 63 E., Sections 19, 20, 28-30, and 33
- Township 35 S., Range 62 E., Sections 6, 7, 18-20, 24, 25, 28, 29, 32-35
- Township 34 S., Range 62 E., Sections 19, 30, and 31
- Township 34 S., Range 61 E., Sections 1, 12-13, and 24
- Township 33 S., Range 61 E., Section 2, 11, 13-14, 24, 25, and 36
- Township 32 S., Range 61 E., Sections 18, 19, 30, and 31
- Township 32 S., Range 60 E., Sections 1, 12-13, 24
- Township 31 S., Range 60 E., Sections 9, 10, 14, 15, 22, 23, 26, and 36
- Township 28 S., Range 59 E., Section 14

Block 18 Continuation – Nature of Work

Additionally, the project would dredge material from 4.4 acres of marine waters at the Katzehin ferry terminal facility and include installation of approximately 266 culverts in non-fish bearing waters. A multiple-ferry shuttle service to both Skagway and Haines would be provided from a new terminal at Katzehin. This is an overall reduction in impacts to waters of the U.S. of 14.5 acres from the previous USACE permit authorization. The highway alignment and ferry terminal and surrounding environments are described in context of topography and other features, such as eagle nest trees, in Section 2.3.3 of the Draft Supplemental Environmental Impact Statement (EIS).

Highway

The highway will have a 30-foot pavement width consisting of two 11-foot-wide vehicle lanes and four-foot shoulders. The roadway will typically include the following: 30-foot wide pavement, 8-foot wide traversable slopes above 1.5:1 fill slopes; stabilization of unsuitable soils including geotextile separation fabric if necessary; 2-inch asphalt concrete and 2-inch asphalt treated base above a 4-inch aggregate base course and a minimum of 24 inches of selected material consisting of useable excavated material. Excess excavated material and construction debris would be placed adjacent to road embankment in upland areas only. Soil cuts would be 1.5:1, and peat cuts would be 0.5:1. On tidelands, the highway will consist of shot rock fill, with a 6-foot thick riprap protection.

Ferry Terminal

The Katzehin terminal facility will include a fill pad in the intertidal area, two rubble mound breakwaters, a stern berth, and a dredged mooring basin. Dredged material will be incorporated into the fill for the terminal building, staging and parking. The terminal area fill will be approximately 640 feet by 450 feet. A six foot thick layer of riprap will surround the fill. The breakwater will be about 500 feet long, the northwest breakwater approximately 400 feet long. The breakwaters will be up to 160 feet wide with an additional 10-foot riprap toe protection areas on each side. A mooring basin will be dredged to -25 foot elevation. The vessel mooring facility includes a stern berth with 60 feet x 80 feet steel float and 20 feet x 143 feet steel transfer bridge, six mooring structures, and a sheetpile wave barrier located in front of the northwest breakwater. The breakwaters will contain gaps or culverts to allow fish passage.

Streams and drainages

Three crossings over streams require fill in marine areas below the High Tide Line (HTL):

- Bridge 9E (Independence Creek, non-anadromous). Approximately 100 cubic yards of rock highway embankment and riprap will be placed below HTL impacting 0.01 acre of marine habitat.
- Bridge 27E (unnamed non-anadromous stream about one mile south of Katzehin River). Approximately 45,930 cubic yards of rock highway embankment and riprap will be placed below HTL. Approximately 0.63 acres of fill will be placed below HTL on the north and south sides of the stream.

- Katzehin River (anadromous). Approximately 64,480 cubic yards of rock highway embankment and riprap will be placed below HTL on the south shore of the mouth of Katzehin River in the intertidal area to create a bridge approach. The fill area will be about 3.15 acres.

Culverts will be installed in appropriate locations to maintain natural flow patterns for surface water. Culverts will typically be in a bedding footprint of 1.5 feet on either side of the pipe, with approximately 1.5 feet of bedding below and above the pipe. Pipe alignments and gradients will match the natural stream beds except where excavation or excessive skew make this not feasible. In areas outside of wetlands, approximately 4,900 cubic yards of material consisting of riprap, bedding and concrete covering 2.9 acres will be placed in waters of the U.S. for culvert installation. Fill material associated with placement of culverts in wetlands is included in stated wetland fill amounts.

Diversions of streams would be done during low flow periods using standard procedures to minimize water quality impacts. Depending on flows, water may be pumped around the site where the culvert is being placed, or the stream may be diverted to a temporary lined channel.

Methods of Construction
Excavation of soil will be done by bulldozer and tracked excavator. Rock excavation will be by dozer ripping or drilling and blasting. Grubbing within the cut and fill limits will be done by dozer or excavator. No mechanized land clearing will occur in wetlands outside the cut and fill limits. Clearing in wetlands beyond the toe slope will be by hand (chain saw) or brush hog on the roadbed. Pile driving at the Katzehin Ferry Terminal will be by vibratory hammers to the extent practicable. Dredging at the terminal will be by suction or clam shell scoop. The riprap outer walls of the terminal fill pad will be placed first, during low tide stages, and dredged material will be contained within the fill.

Additional Information
No blasting is anticipated in waters of the U.S. All blasting would be controlled to avoid discharge of blasted materials into waters of the U.S. (including wetlands) adjacent to the project.

Any construction camps, staging sites, borrow pits, and waste areas will be located in upland areas and stabilized during and after use to avoid water quality impacts.

Wastewater from the ferry terminal public restrooms will be treated to Alaska Department of Environmental Conservation (ADEC) standards and discharged through a leach field within the fill pad, if practicable. If not, the National Sanitation Foundation approved self contained treatment plant would be installed.

Block 19 Continuation – Project Purpose

Juneau is the largest community on the North American continent not connected to the continental highway system. Because of its location and lack of highway access, all freight, vehicle, and passenger movement to and from Juneau is by air or sea. The only public surface transportation available to and from Juneau is the Alaska Marine Highway System (AMHS), a state-owned ferry system that provides transportation to many of Southeast Alaska's coastal communities. AMHS service from Juneau connects to the continental highway system in Prince Rupert, British Columbia, and Bellingham, Washington to the south, and in Haines and Skagway to the north. The AMHS is the National Highway System (NHS) link to Juneau, Haines, and Skagway.

Block 21-22 Continuation – Types/Amount of Discharge Material and Surface Area in Waters of the U.S.

Discharge up to 646,650 cubic yards of fill material into 95.7 acres of waters of the U.S., and dredge 4.4 acres of unvegetated marine waters, as follows:

Facilities	**Surface Area To Be Filled or Dredged (Acres)**	**Volume (cubic yards)**
Roadway Fill/Slope Stabilization	60.7 (palustrine wetlands)	531,100
Channel Work	2.9 (stream channel)	4,948
Roadway Marine Fill	25.5 (marine waters)	Captured in roadway fill quantity
Ferry Terminal Pad/Breakwaters	6.6 (marine waters)	110,600
Ferry Terminal Dredging	4.4 (marine waters)	40,000
TOTAL	***100.1***	***686,648***

Roadway Fill: Approximately 60.7 acres of freshwater palustrine (mostly forested) wetlands will have rock fill placed within the prepared site. Fill will consist of 531,100 cubic yards of clean excavated 8-inch diameter or smaller rock and mineral soil (sand and gravel).

Stream Channel Work: The installation of 266 new culverts will require the discharge of approximately 4,948 cubic yards of bedding, rip rap, and concrete into approximately 2.9 acres of waters of the U.S. below the ordinary high water mark of streams. The culverts will typically be placed in a bedding footprint of 1.5 feet on either side of the pipe, with approximately 1.5 feet of bedding below the pipe. Pipe alignments and gradients will match the natural stream beds except where excavation or excessive skew make this impracticable. The culverts will be installed by temporary diversion, by either pumping water around the site or by diverting the water through a temporary lined channel.

Roadway Fill in Marine Waters of the U.S.: The road will be placed, for part of its length along the shoreline, in approximately 25.5 acres of marine (tidal) waters along the east side of Lynn Canal, north of Comet Beach. The road, which will be composed of shot rock fill, will be protected at its base with 6 feet of Class IV riprap extending up to elevation +24 feet above the 0.0 foot contour.

Ferry Terminal Dredging: Dredging of 4.4 acres of material (40,000 cubic yards) consisting of silt and sand deposited in subtidal areas from Katzehin River discharge.

Ferry Terminal and Breakwaters: Approximately 6.6 acres of fill will be placed for two ferry terminals (3.9 acres) and breakwaters (2.7 acres). Fill will consist of 110,600 cubic yards of rock and dredged ferry terminal material; six foot thick outer riprap face (24-60 inch diameter rock) with shot rock (6-36 inch diameter) and dredged material core.

Block 25 Continuation – Addresses of Adjoining Property Owners

- David Kelley, Regional Land Manager, State of Alaska, Department of Natural Resources, Division of Mining, Land and Water, Southeast Region Office, 400 Willoughby Ave., Ste 400, P.O. Box 111020, Juneau, Alaska 99811-1020
- Brian Kleinhenz, Natural Resources Manager, Sealaska Corporation, One Sealaska Plaza, Suite 201, Juneau, Alaska 99801
- Gail Olds, et al., 9644 Flying Eagle Lane, Las Vegas, NV 89123 (U.S. Mineral Survey 318)
- John Edwin Campbell, 7963 Jack Way, Klamath Falls, OR 97603 (U.S. Mineral Survey 318)
- Thomas Robert Campbell, 10138 219th Place NE, Redmond, WA 98053-766 (U.S. Mineral Survey 318)

Block 26 Continuation – List of Other Certifications or Approvals/Denials from other Federal, State, or Local Agencies for Work Described in This Application

Agency	Type Approval	Identification Number	Date Applied	Date Approved	Date Denied
ADEC	401 WQC	AK 0603-07		May 18, 2011	
ADNR OHMP	Title 41 Fish Habitat*	FH06-I-0041		June 30, 2006	
ADNR OHMP	Title 41 Fish Habitat*	FH06-I-0042		June 30, 2006	
ADNR OHMP	Title 41 Fish Habitat*	FH06-I-0043		June 30, 2006	

*Title 41 Fish Habitat permits will be reissued by the ADF&G under Title 16.

The following approvals would be applied for prior to construction:

- U.S. Forest Service special use permit for project facilities in the Tongass National Forest
- National Marine Fisheries Service (NMFS) Endangered Species Act (ESA) Section 7 consultation for threatened and endangered species
- NMFS Marine Mammal Protection Act (MMPA) Incidental Harassment Authorization for marine mammals
- Alaska Pollutant Discharge Elimination System (APDES) Alaska General Permit for storm water discharge during construction**
- Alaska Department of Natural Resources, Division of Mining Land and Water Interagency Land Management Assignment for use of tidelands at the Katzehin Ferry Terminal and easements for highway segments built below mean high water
- Authorization from Alaska Department of Environmental Conservation (ADEC) for treated wastewater discharge from the Katzehin Ferry Terminal
- ADEC review of the Storm Water Pollution Prevention Plan (SWPPP) under the APDES Alaska General Permit**

**This project would be constructed in phases. Each phase would have a separate Construction General Permit and SWPPP.

Attachment 2

USACE Permit Application

Plan Sheets and Details

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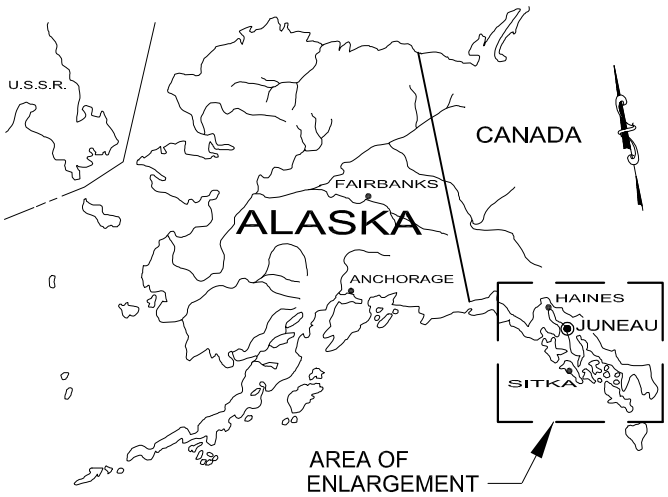
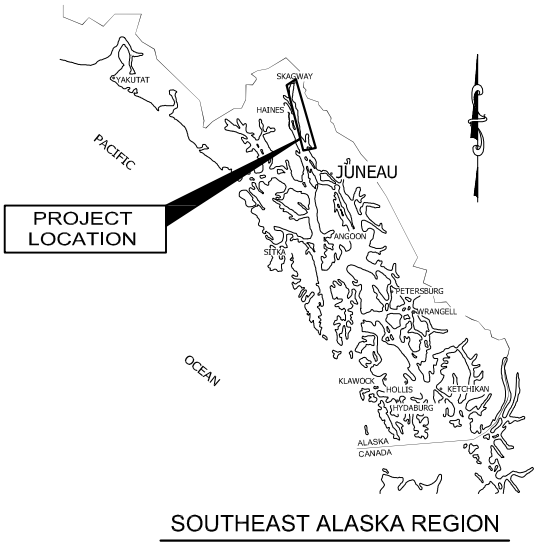
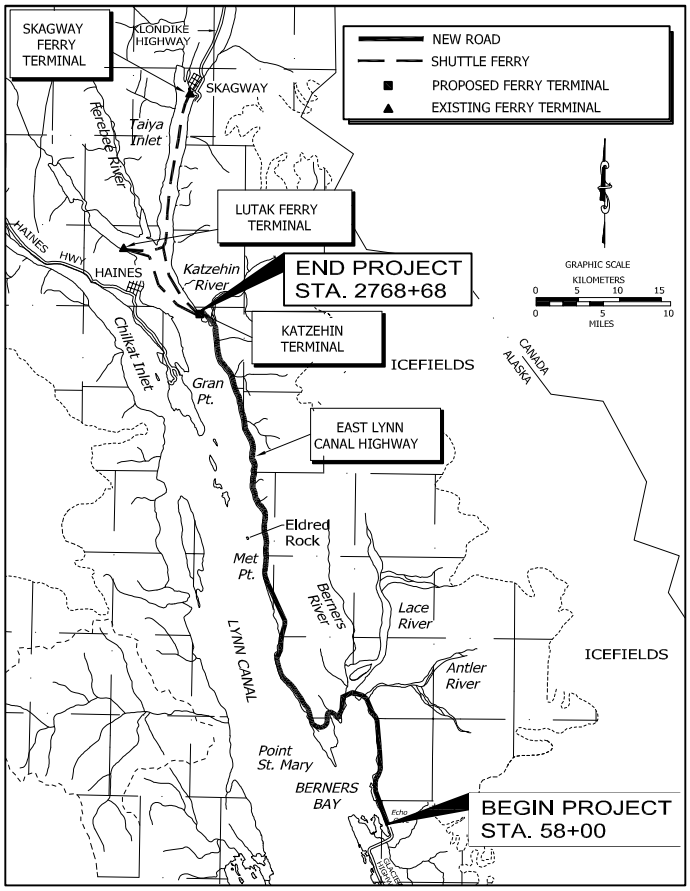




SOUTHEAST ALASKA REGION



ADJACENT PROPERTY OWNERS:

PROPOSED ACCESS ROAD

WATER BODY:

LYNN CANAL AND BERNERS BAY

LOCATION AND VICINITY MAPS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 31 S. TO T. 37 S. & R. 60 E. TO R. 64 E.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 1 OF 93

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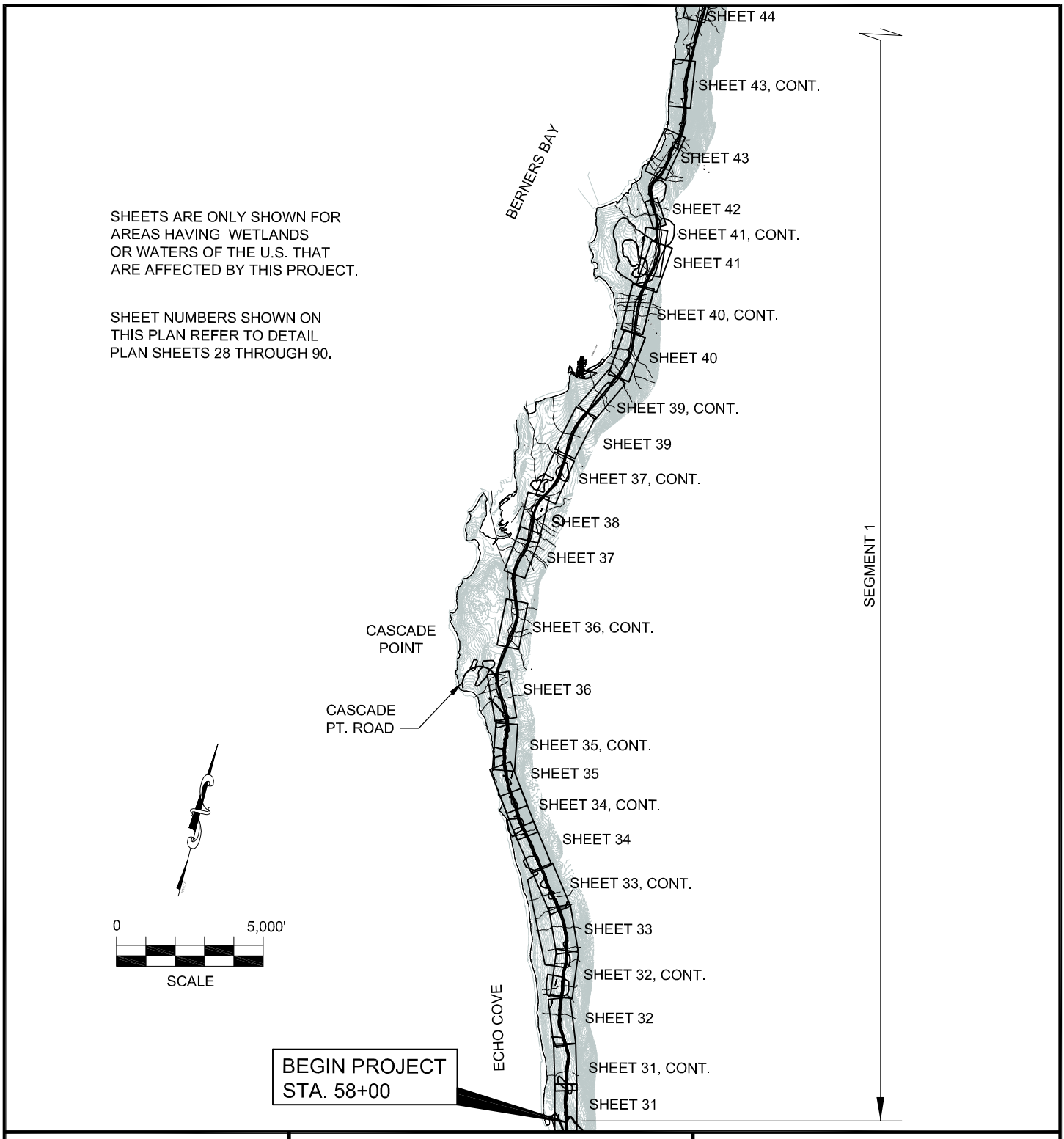

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. GOLDBELT, INC.
3. SEALASKA, CORP.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Legend
Detail Plan
Sheet Numbers

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 36 S., R. 63 E.,
T. 37 S., R. 63 E.,
T. 37 S., R. 64 E.

DETAIL PLAN SHEETS
DATE: JULY 2014

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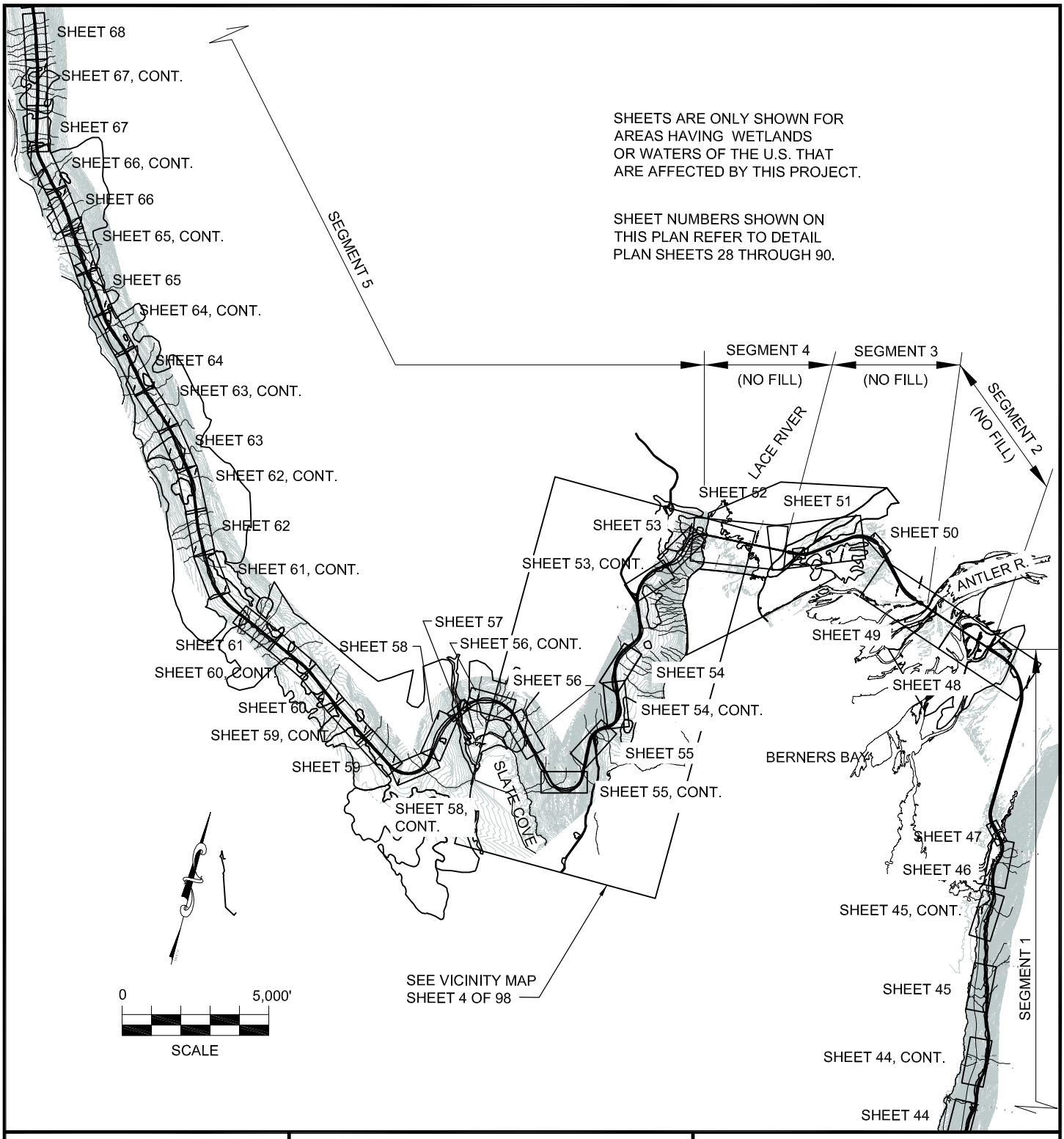

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.
3. COEUR ALASKA, INC.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Legend
Detail Plan
Sheet Numbers

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T. 35 S., R. 62 E.

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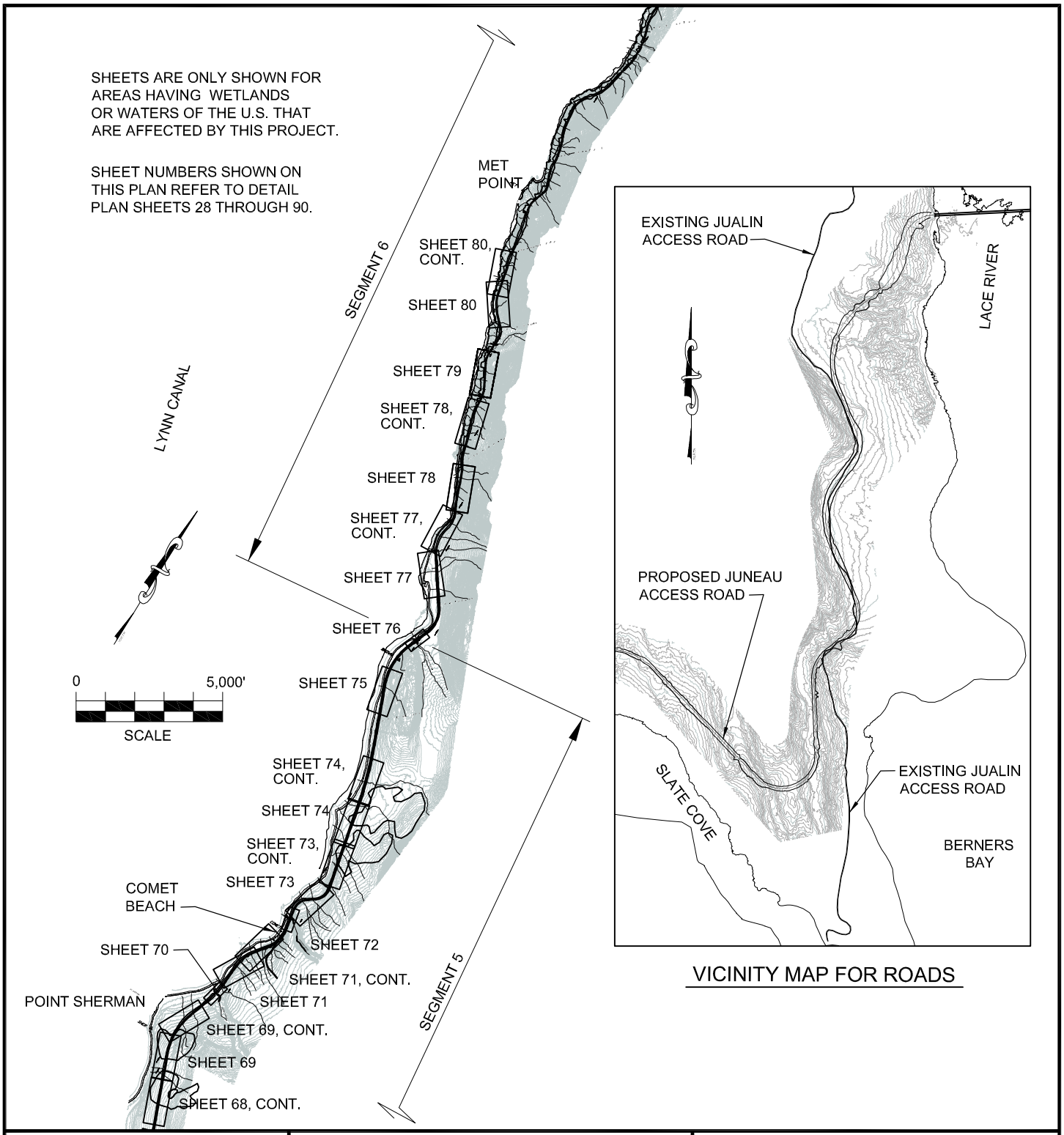

VICINITY MAP FOR ROADS

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.
3. COEUR ALASKA, INC.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Legend
Detail Plan
Sheet Numbers

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 34 S., R. 61 E.,
T. 34 S., R. 62 E.,
T. 35 S., R. 62 E.
T. 33 S., R. 61 E.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 4 OF 93

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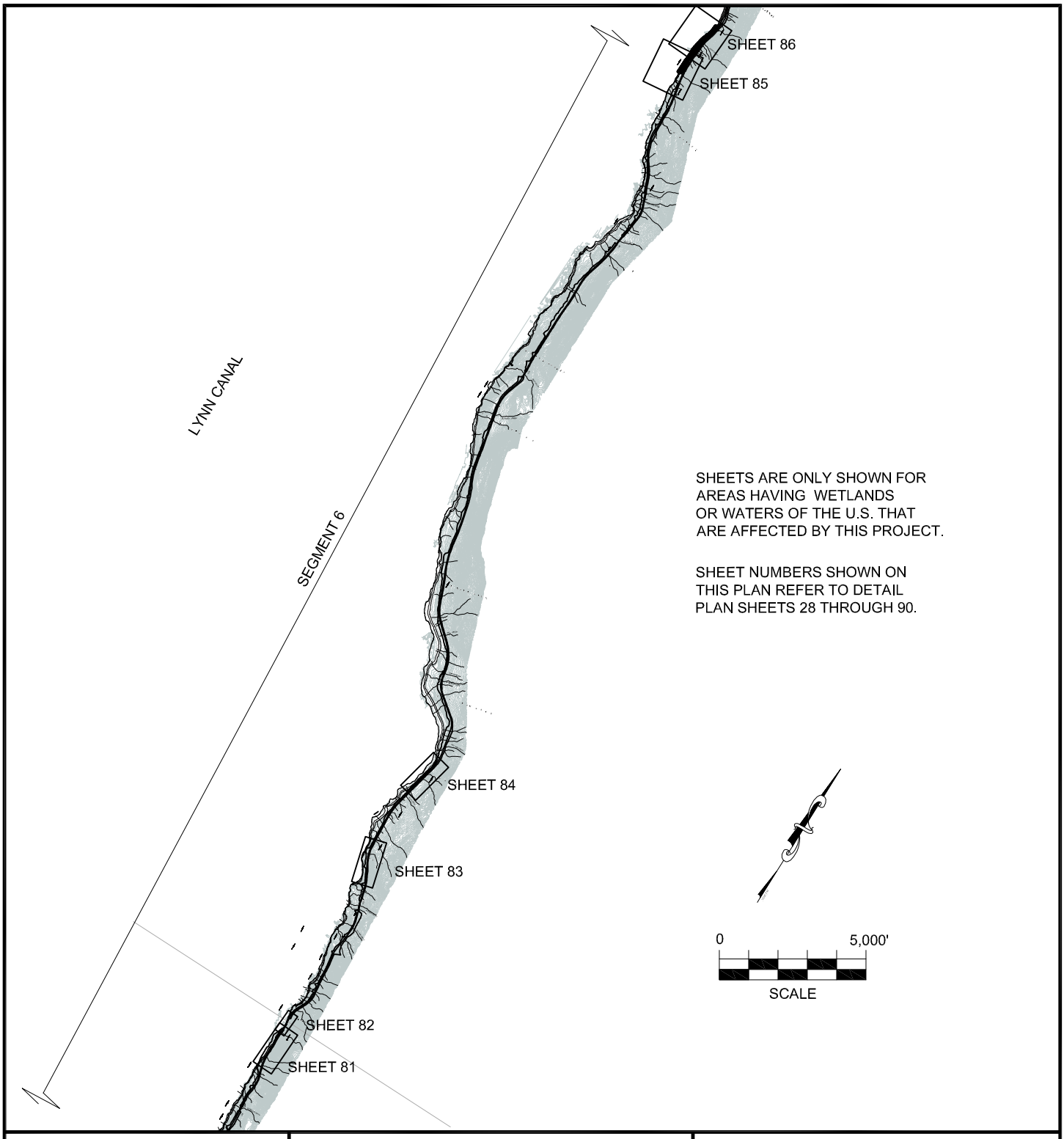

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Legend
Detail Plan
Sheet Numbers

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 33 S., R. 61 E.,
T. 32 S., R. 61 E.,

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 5 OF 93

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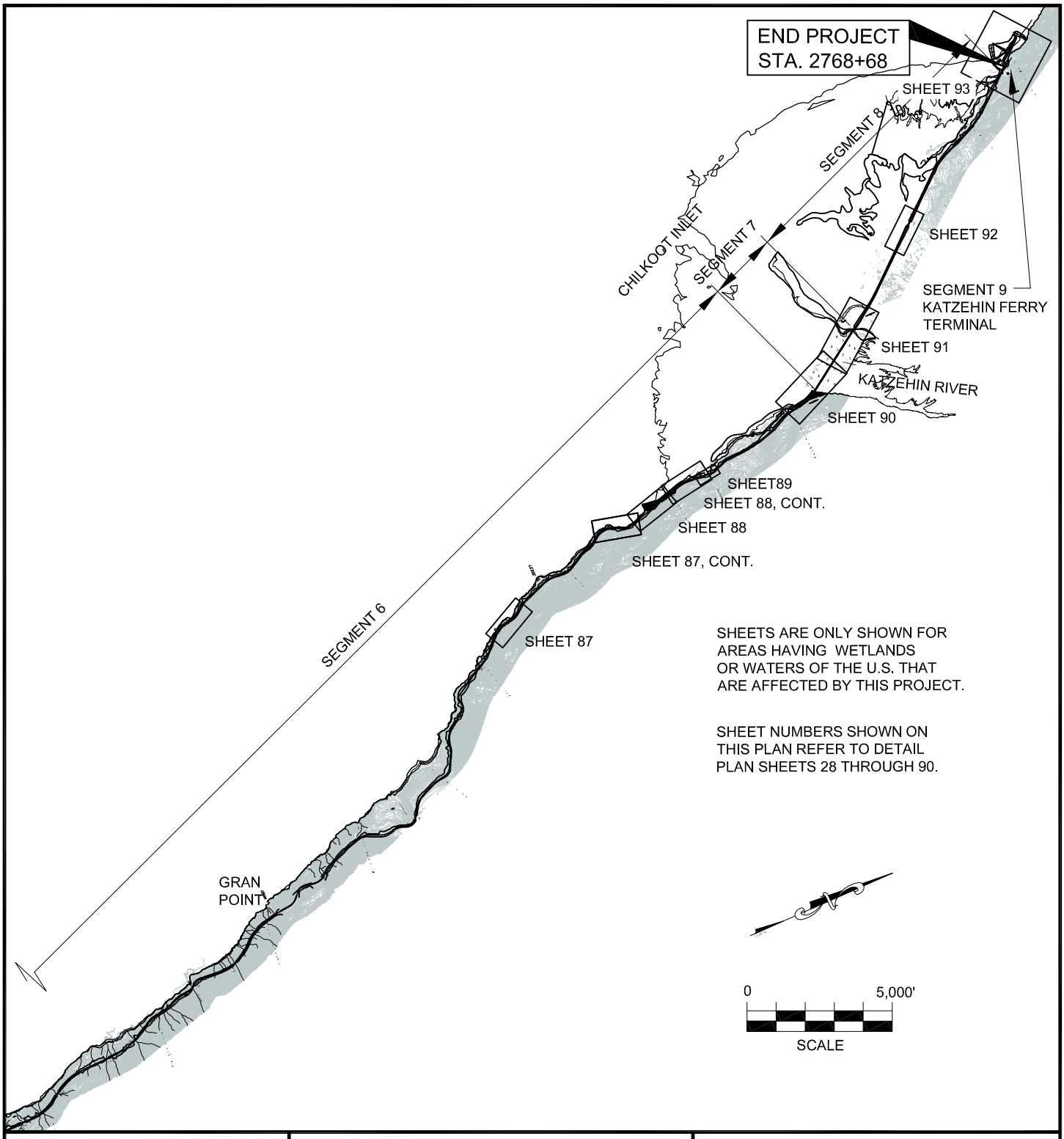

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Legend
Detail Plan
Sheet Numbers

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 32 S., R. 60 E.,
T. 31 S., R. 60 E.,

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 6 OF 93

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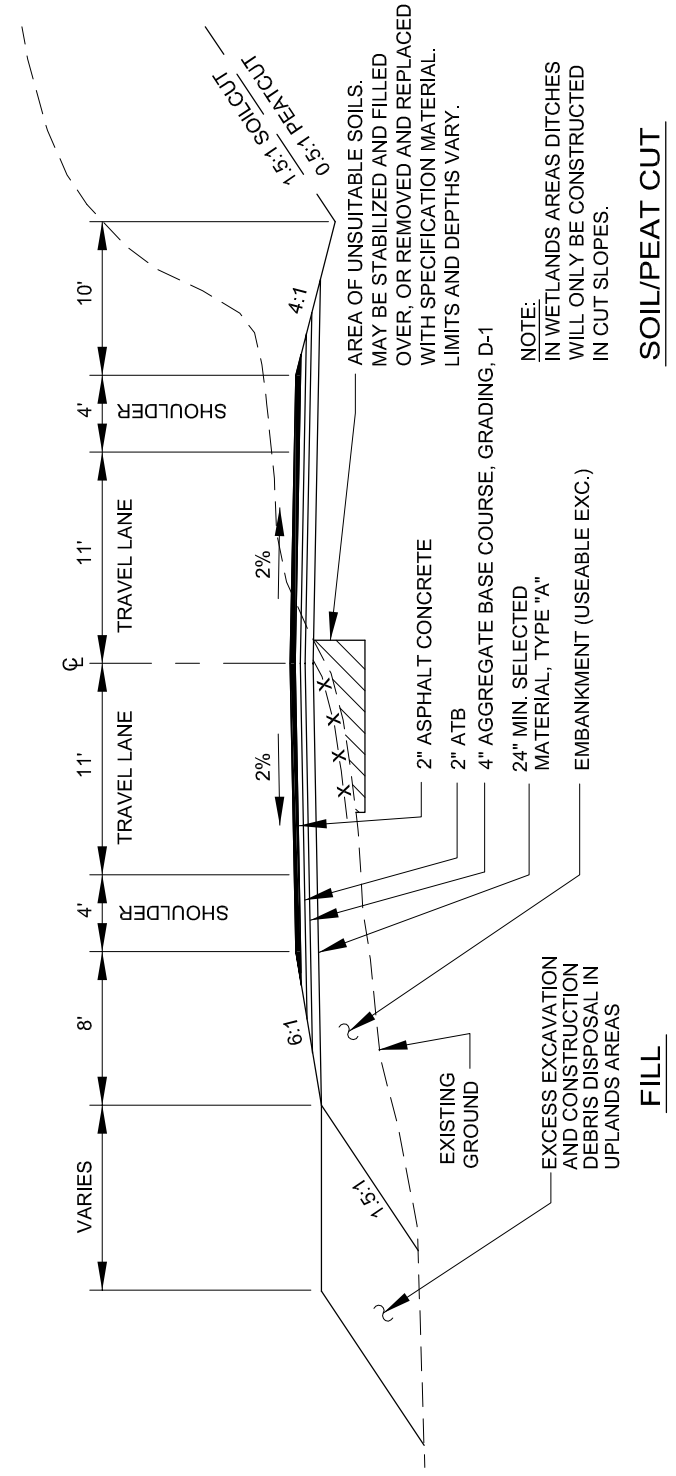

TYPICAL ROADWAY SECTION

CUT AND FILL TYPICAL BOTH SIDES OF ROADWAY

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

TYPICAL ROADWAY SECTION

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

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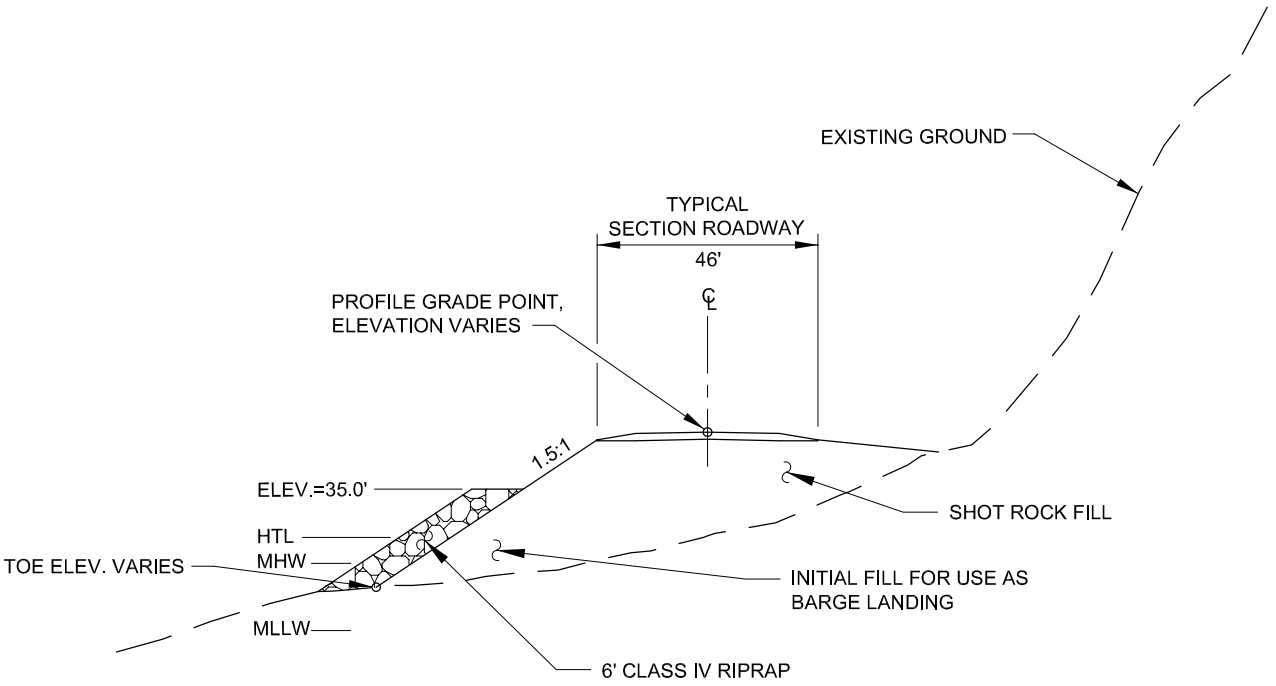

TIDELANDS FILL TYPICAL

NOTE:

FOR ALL DRAWINGS:
HIGH TIDE LINE (HTL) = 21.0'
MEAN HIGH WATER (MHW) = 15.6'
MEAN LOWER LOW WATER (MLLW) = 0.0'

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

TIDELANDS FILL TYPICAL

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S.E. REGION DESIGN & ENGINEERING SERVICES

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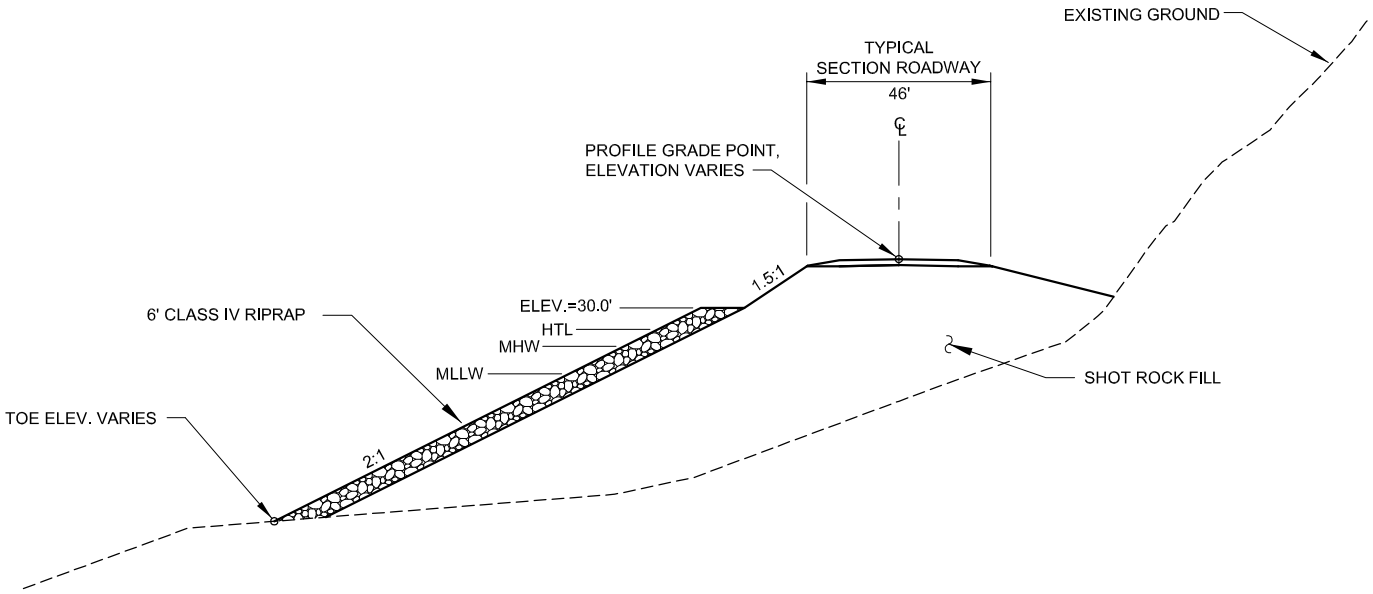

DEEP WATER FILL TYPICAL

NOTE:

FOR ALL DRAWINGS:
HIGH TIDE LINE (HTL) = 21.0'
MEAN HIGH WATER (MHW) = 15.6'
MEAN LOWER LOW WATER (MLLW) = 0.0'

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

DEEP WATER FILL TYPICAL

APPLICATION BY:
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S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

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DETAIL PLAN SHEETS
DATE: JULY 2014

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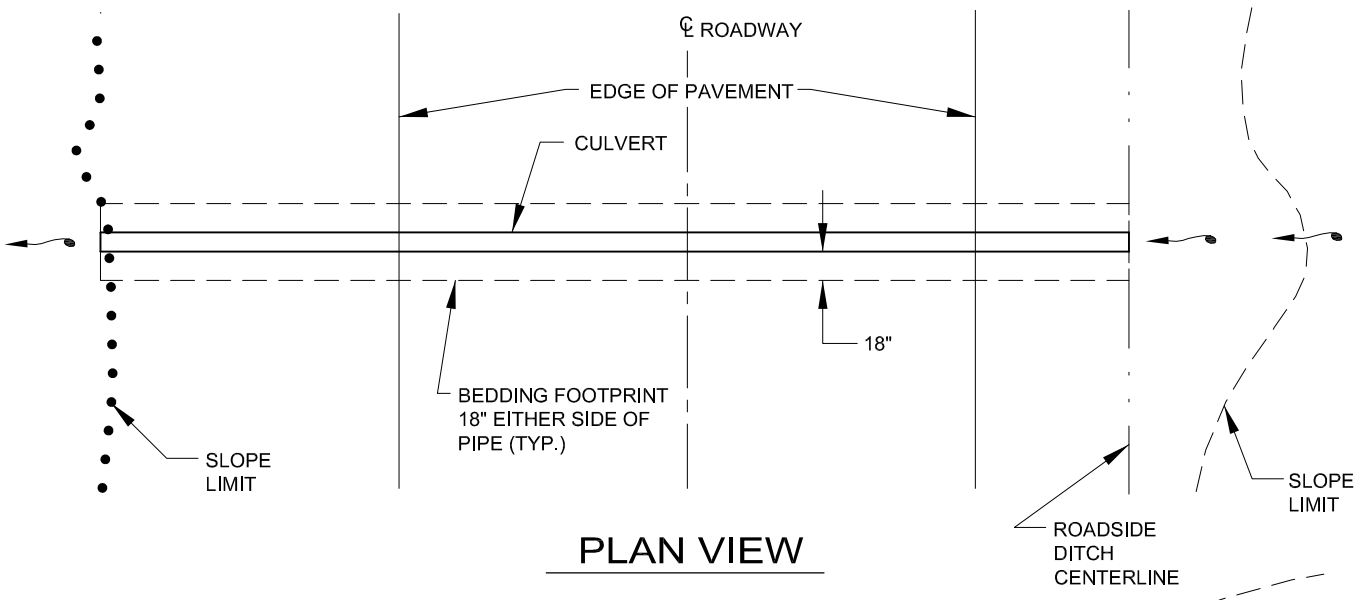
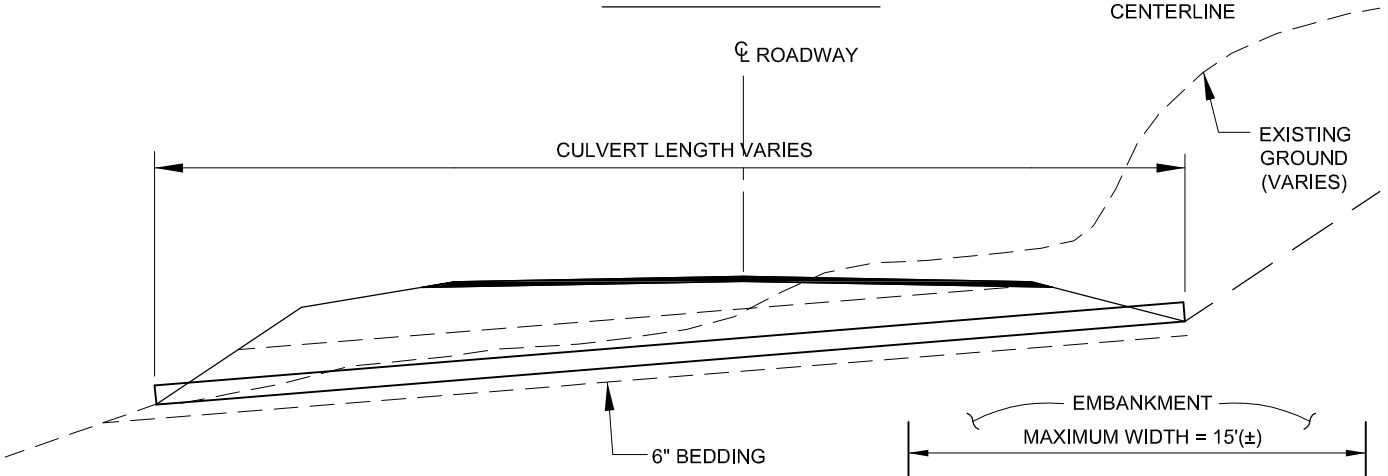
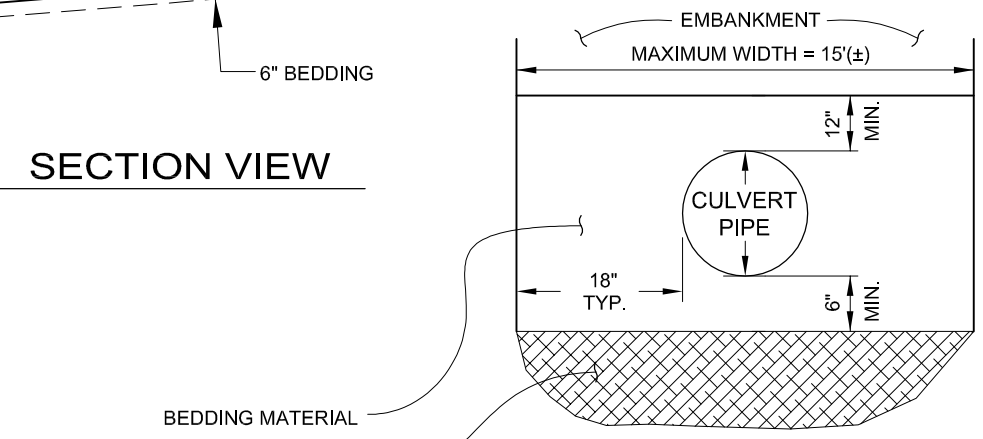


PLAN VIEW



SECTION VIEW



TYPICAL PIPE TRENCHING & BEDDING DETAIL

N.T.S.

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

TYPICAL CULVERT INSTALLATION DETAIL

APPLICATION BY:
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AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

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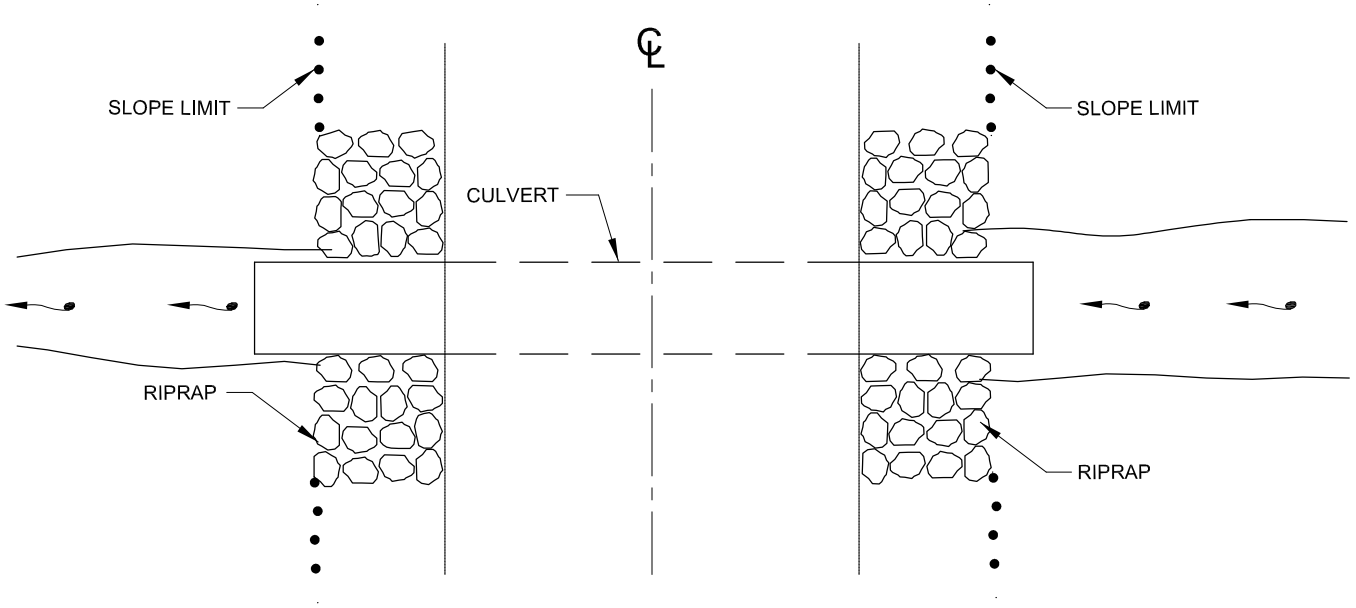
LOCATED IN: T. 32 S., R. 60 E.,
T. 31 S., R. 60 E.,

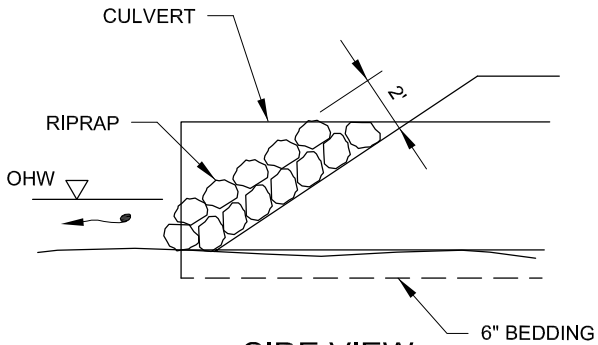
DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 10 OF 93

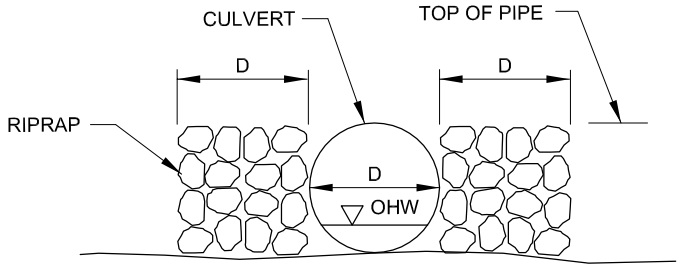


PLAN VIEW

N.T.S.



SIDE VIEW



END VIEW

TYPICAL RIPRAP PLACEMENT

N.T.S.

CULVERT NOTES:

1. PIPE LOCATIONS AS SHOWN ON THE PLAN AND PROFILE SHEETS ARE APPROXIMATE AND MAY BE CHANGED BY THE ENGINEER.
2. PIPE ALIGNMENTS AND GRADIENTS SHALL MATCH THE NATURAL STREAM BEDS UNLESS OTHERWISE SHOWN IN THE PLANS.
3. ORDINARY HIGH WATER VARIES.

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

TYPICAL CULVERT DETAILS

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 32 S., R. 60 E.,
T. 31 S., R. 60 E.,

DETAIL PLAN SHEETS
DATE: JULY 2014

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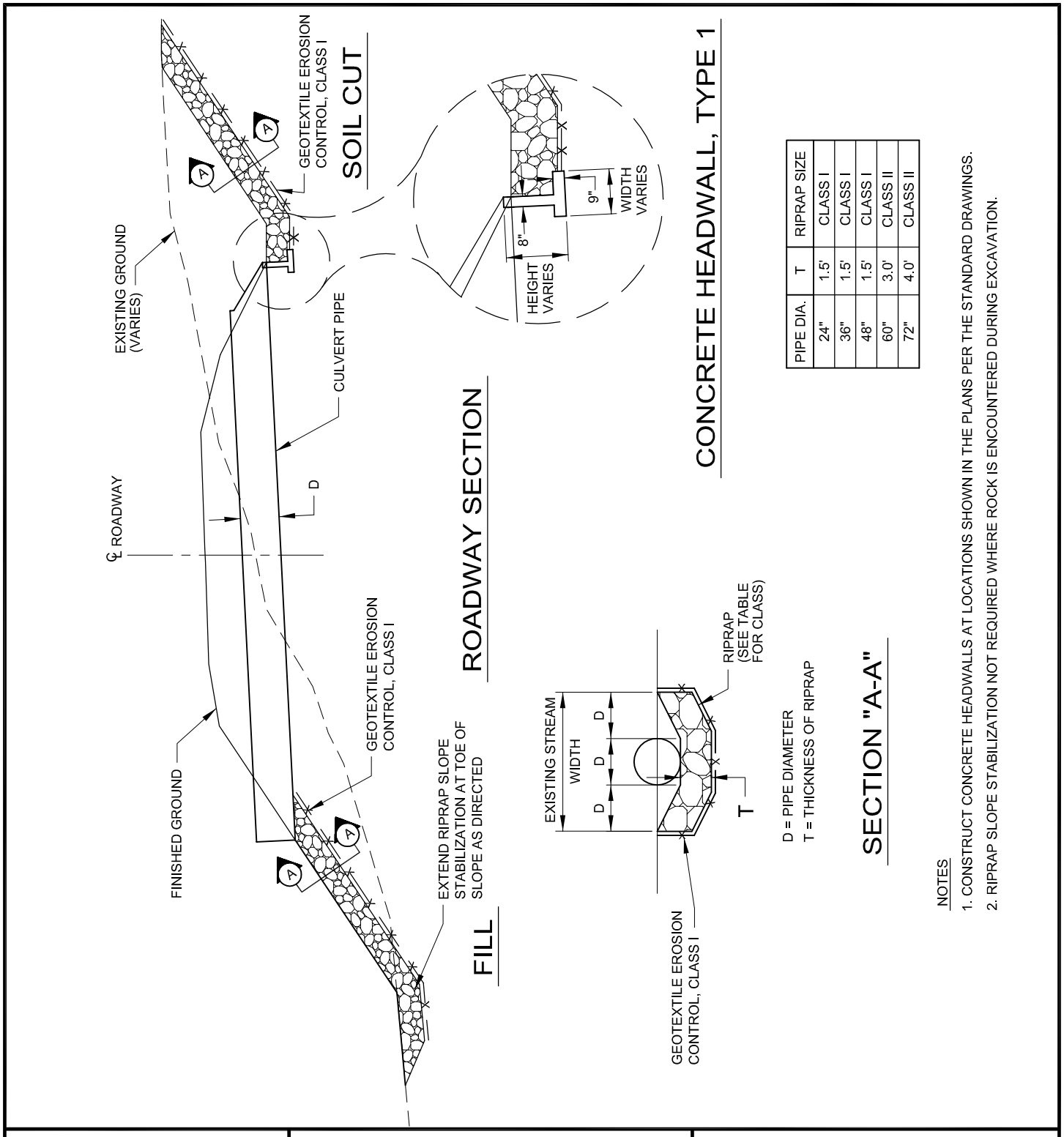

PIPE DIA.	T	RIPRAP SIZE
24"	1.5'	CLASS I
36"	1.5'	CLASS I
48"	1.5'	CLASS I
60"	3.0'	CLASS II
72"	4.0'	CLASS II

NOTES

1. CONSTRUCT CONCRETE HEADWALLS AT LOCATIONS SHOWN IN THE PLANS PER THE STANDARD DRAWINGS.
2. RIPRAP SLOPE STABILIZATION NOT REQUIRED WHERE ROCK IS ENCOUNTERED DURING EXCAVATION.

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

ROCK FLUME DETAILS

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S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

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LOCATED IN: T. 32 S., R. 60 E.,
T. 31 S., R. 60 E.,

DETAIL PLAN SHEETS
DATE: JULY 2014

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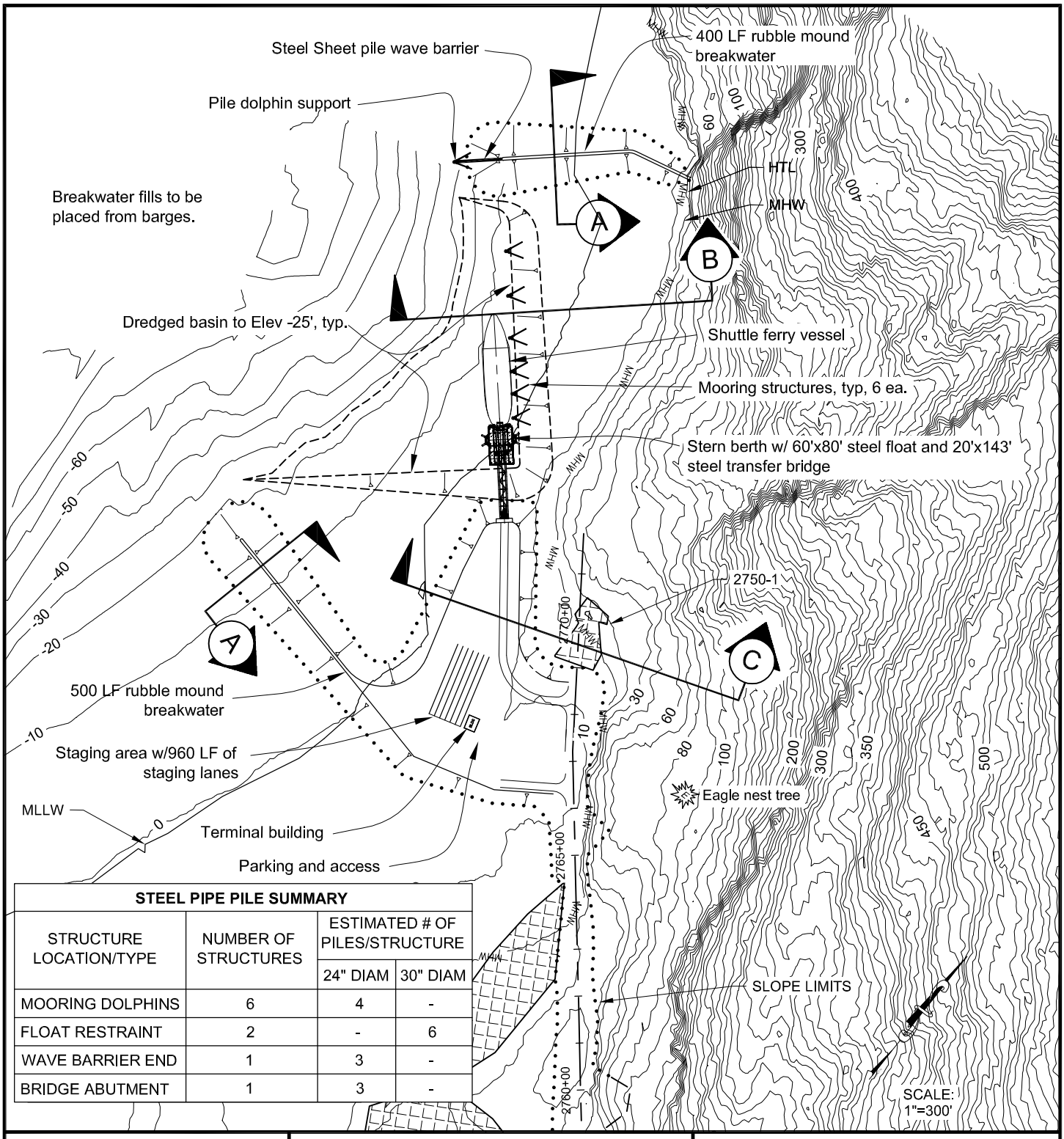

STEEL PIPE PILE SUMMARY			
STRUCTURE LOCATION/TYPE	NUMBER OF STRUCTURES	ESTIMATED # OF PILES/STRUCTURE	
		24" DIAM	30" DIAM
MOORING DOLPHINS	6	4	-
FLOAT RESTRAINT	2	-	6
WAVE BARRIER END	1	3	-
BRIDGE ABUTMENT	1	3	-

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. D.N.R.

WATER BODY:
LYNN CANAL AND BERNERS BAY

Katzehin Ferry Terminal Layout

APPLICATION BY:
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S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2
AT: JUNEAU, ALASKA
LOCATED IN: T. 31 S., R. 60 E., SECT. 4, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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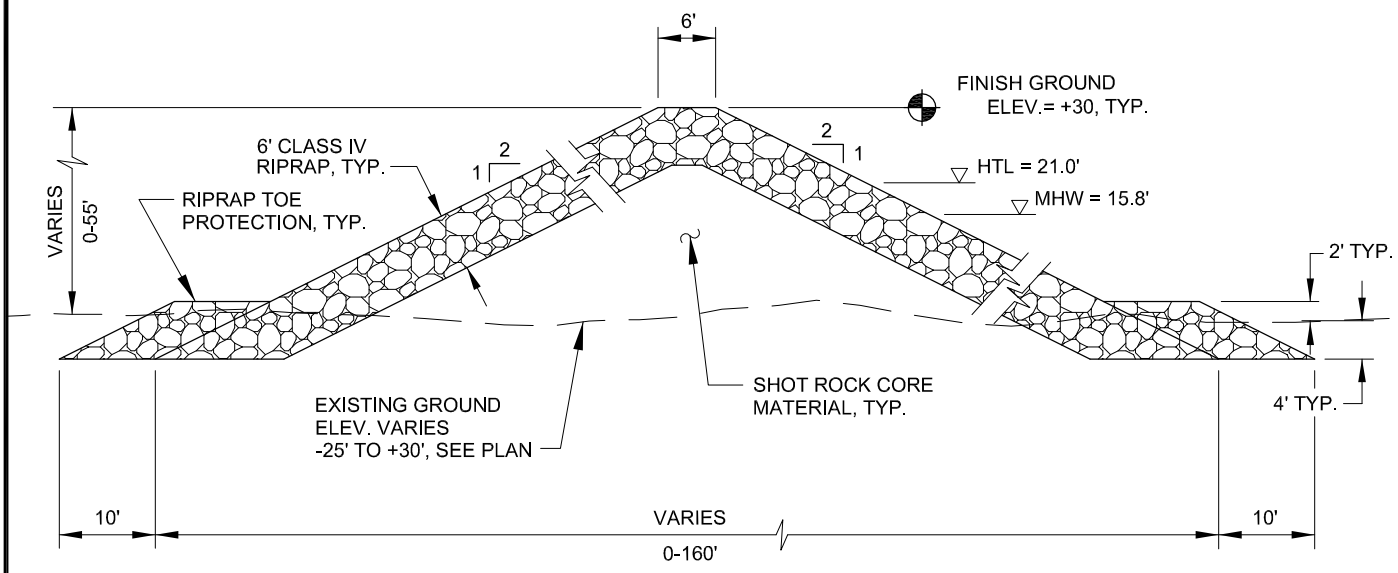


A
13

TYPICAL SECTION
RUBBLE MOUND BREAKWATER

HIGH TIDE LINE = 21'

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

TYPICAL SECTION KATZEHIN FERRY TERMINAL

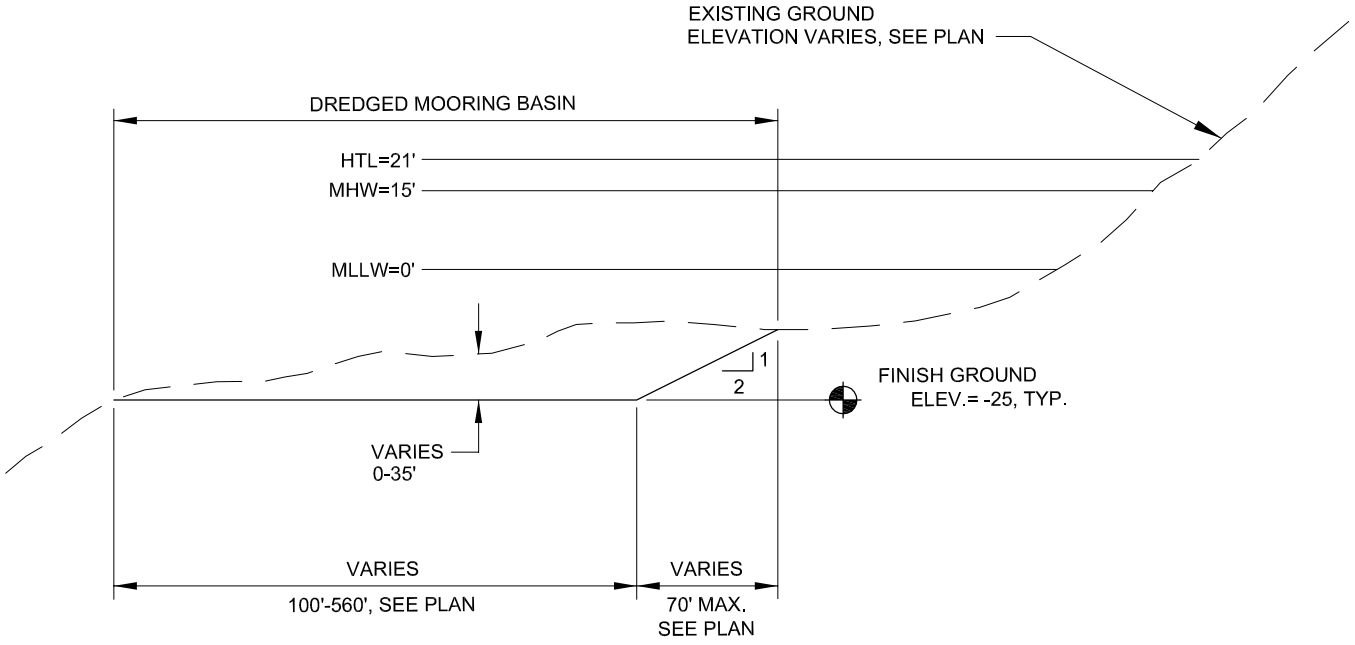
APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 32 S., R. 60 E.,
T. 31 S., R. 60 E.,

DETAIL PLAN SHEETS
DATE: JULY 2014



B/13 TYPICAL SECTION
DREDGED MOORING SECTION

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

TYPICAL SECTION KATZEHIN FERRY TERMINAL

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 32 S., R. 60 E.,
T. 31 S., R. 60 E.,

DETAIL PLAN SHEETS
DATE: JULY 2014

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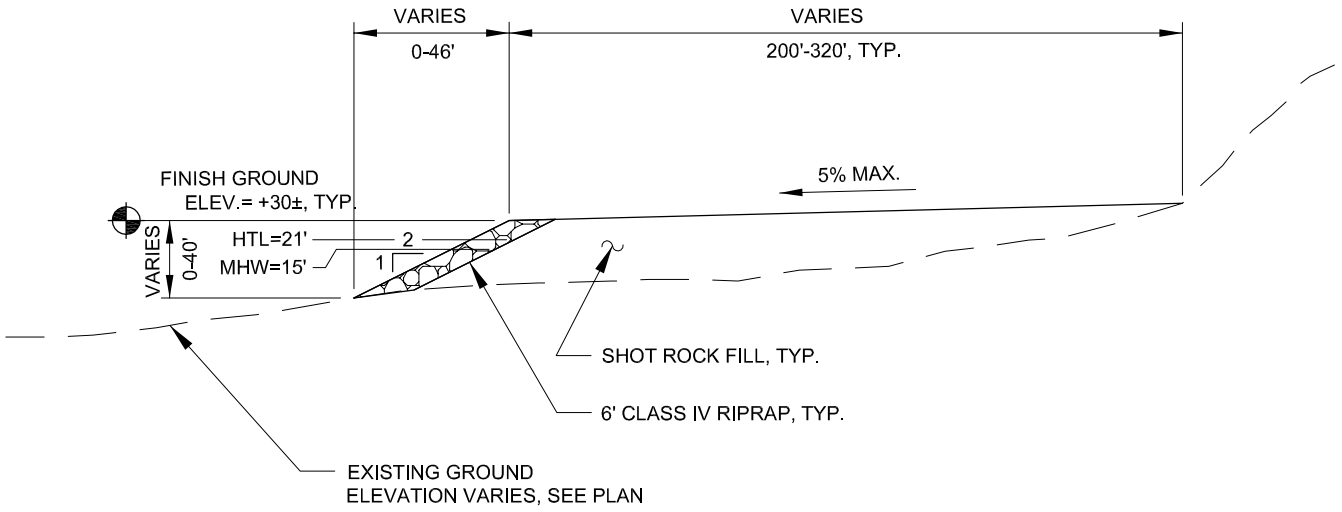

C/13 TYPICAL SECTION
TERMINAL & STAGING AREA FILL

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

TYPICAL SECTION
KATZEHIN FERRY TERMINAL

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 32 S., R. 60 E.,
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DETAIL PLAN SHEETS
DATE: JULY 2014

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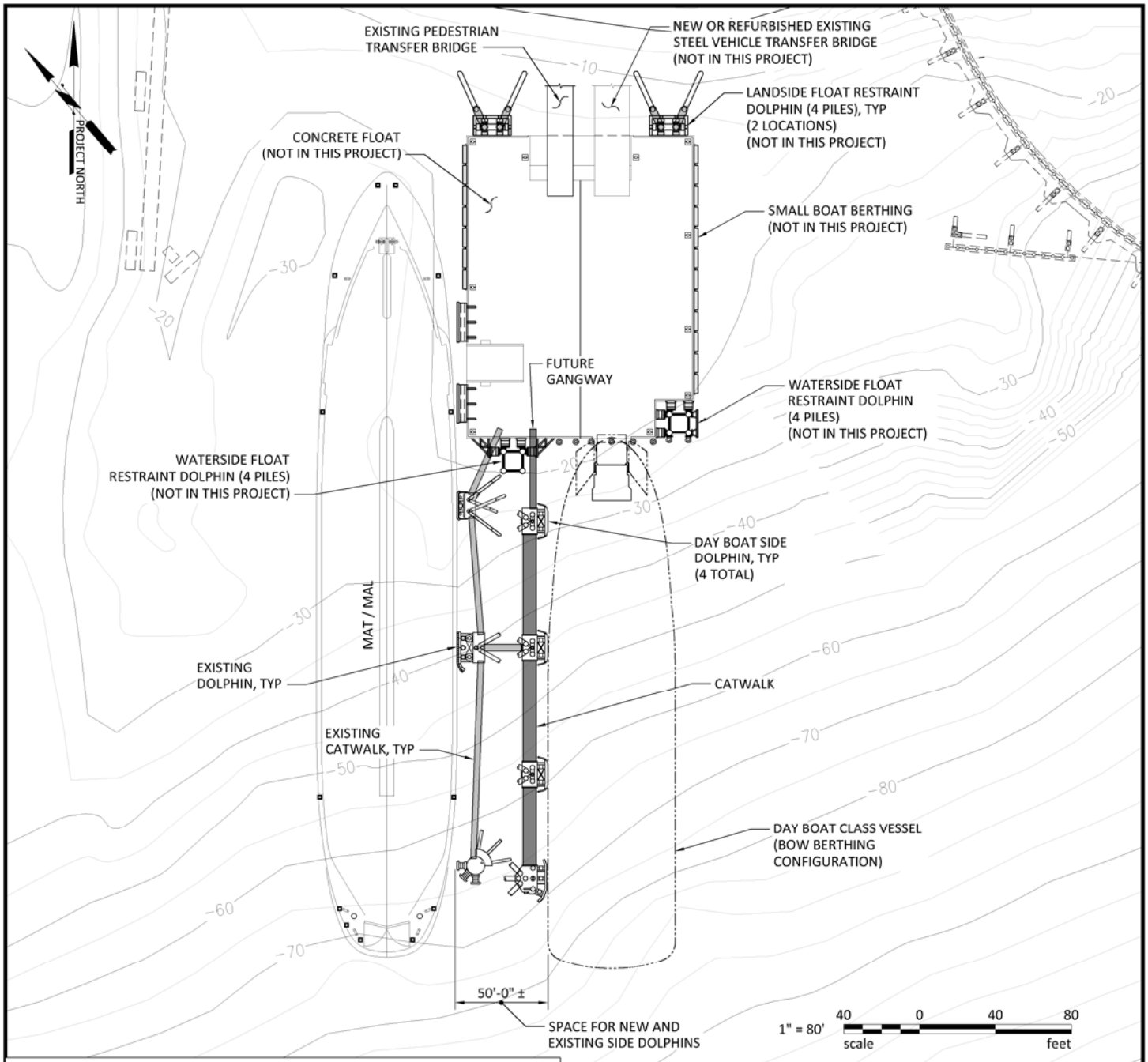

STEEL PIPE PILE SUMMARY		
STRUCTURE LOCATION/TYPE	NUMBER OF STRUCTURES	ESTIMATED # OF PILES/STRUCTURE
		30" DIAM
DOLPHIN - 4 PILE	3	4
DOLPHIN - 6 PILE	1	6

PROPOSED SITE PLAN

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

SKAGWAY FERRY TERMINAL LAYOUT

APPLICATION BY:
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S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
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DETAIL PLAN SHEETS
DATE: JULY 2014

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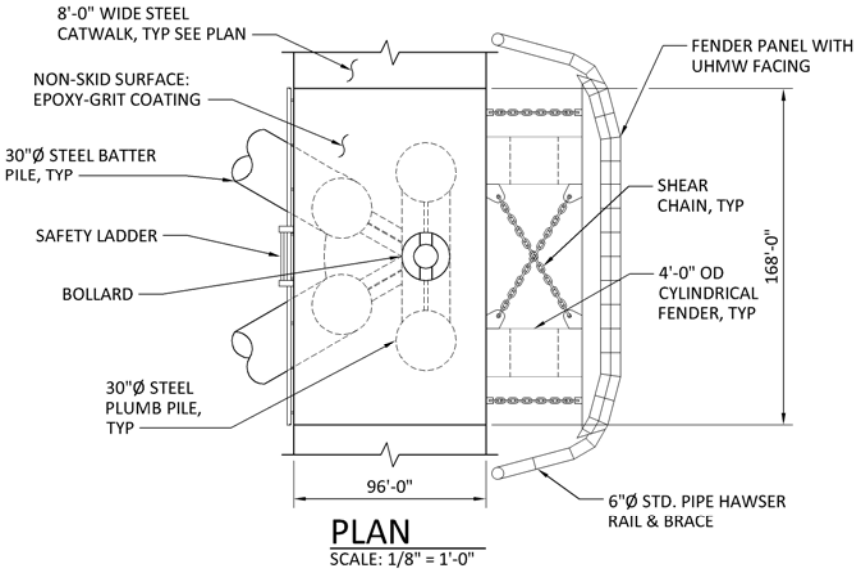
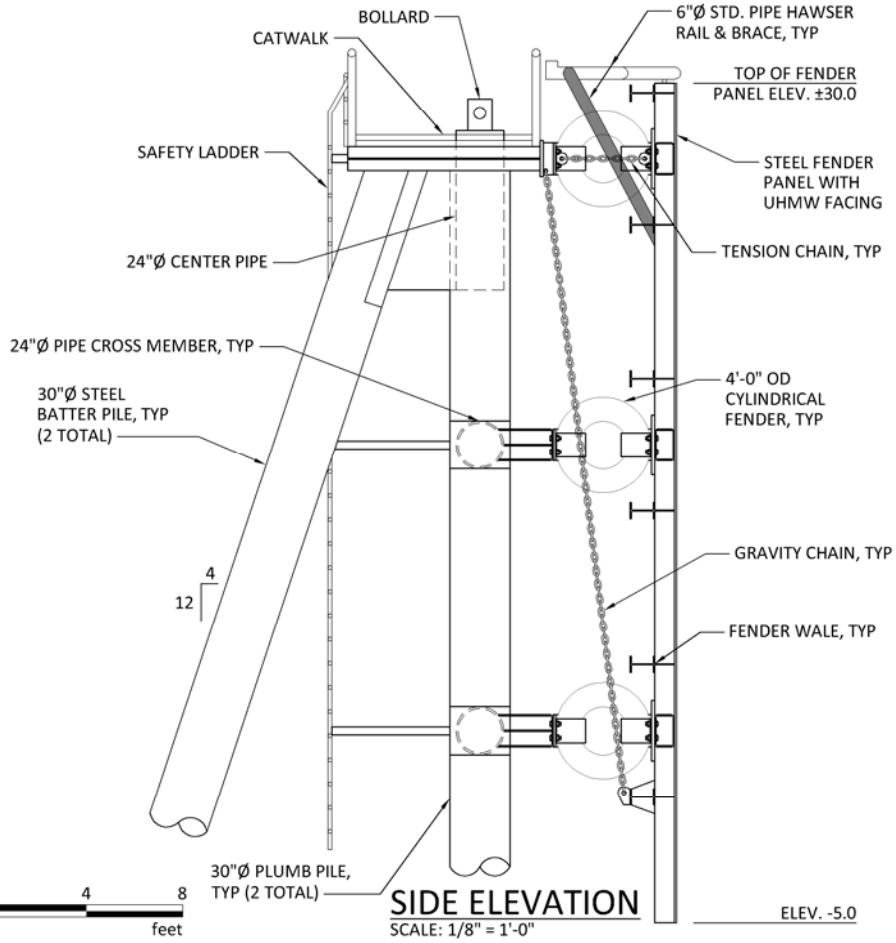


PLAN
SCALE: 1/8" = 1'-0"



SIDE ELEVATION
SCALE: 1/8" = 1'-0"

1/8" = 1'-0" 4 0 4 8
scale feet

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

FOUR-PILE DOLPHIN DETAILS SKAGWAY FERRY TERMINAL

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

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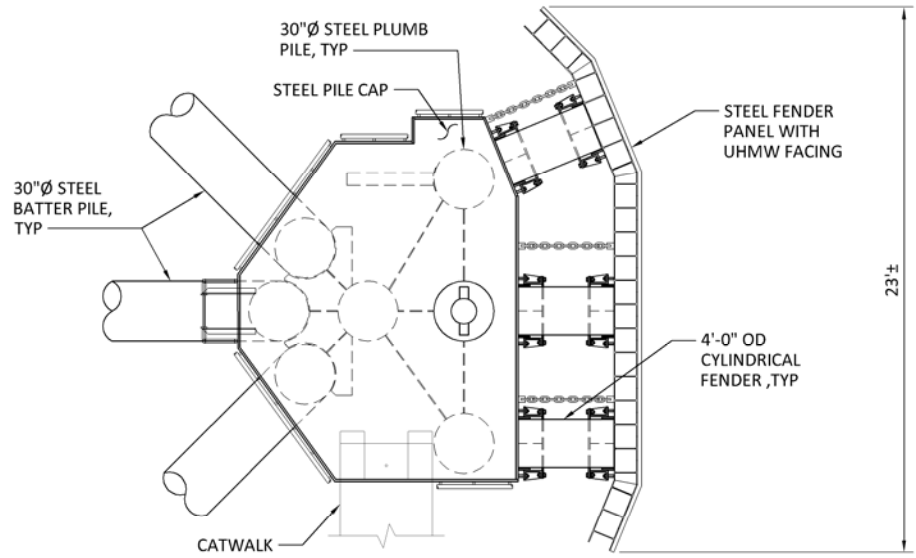
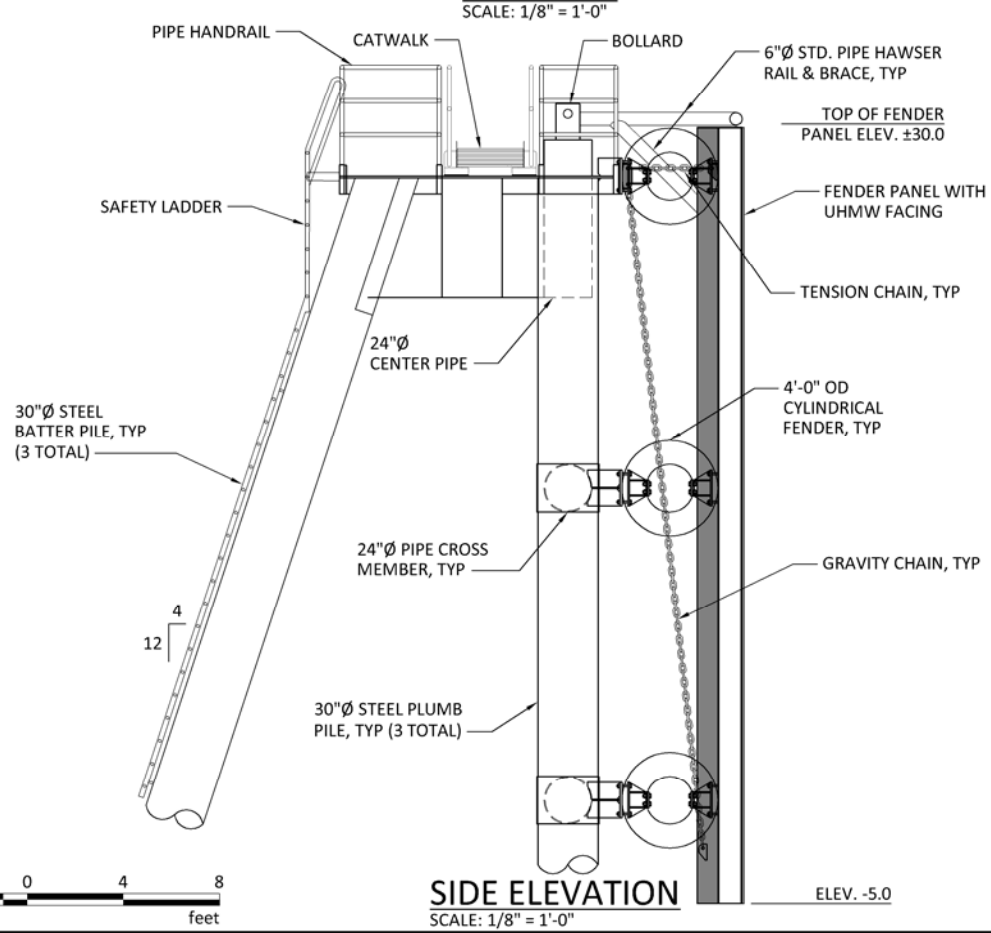


PLAN
SCALE: 1/8" = 1'-0"



SIDE ELEVATION
SCALE: 1/8" = 1'-0"

1/8" = 1'-0" scale 4 0 4 8 feet

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

SIX-PILE DOLPHIN DETAILS SKAGWAY FERRY TERMINAL

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
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AT: JUNEAU, ALASKA

LOCATED IN: T. 32 S., R. 60 E.,
T. 31 S., R. 60 E.,

DETAIL PLAN SHEETS
DATE: JULY 2014

WETLAND FILL AREAS

SHEET	ID	STATION	TO	STATION	LENGTH (FT)	TYPE	FILL IMPACT			**EXCAVATION IMPACT		TOTAL IMPACT	
							S.F.	ACRE	VOL. (C.Y.)	S.F.	ACRE	S.F.	ACRE
28	75+08	73+13		77+29	416	PFO4B	1310	0.03	54	0	0.00	1310	0.03
28	79+41	80+80		84+64	384	PFO4B	1745	0.04	3	0	0.00	1745	0.04
29	107+39	107+46		113+59	613	PFO4B	4795	0.11	200	0	0.00	4795	0.11
29-30	116+94	117+20		157+40	4020	PFO4B	12635	0.29	750	0	0.00	12635	0.29
31	165+92	166+00		166+10	10	PFO4B	45	0.00	0	0	0.00	45	*** 0.00
31	167+41	167+80		171+48	368	PFO4B	2180	0.05	45	0	0.00	2180	0.05
31	172+39	172+11		172+58	47	PFO4B	440	0.01	0	0	0.00	440	0.01
31	178+91	178+93		179+32	39	PFO4B	45	0.00	0	0	0.00	45	*** 0.00
32	185+40	186+10		186+83	73	PFO4B	20	0.00	0	0	0.00	20	*** 0.00
32	191+50	191+53		191+77	24	PFO4B	20	0.00	0	0	0.00	20	*** 0.00
32	194+00	194+00		195+53	153	PFO4B	440	0.01	35	0	0.00	440	0.01
32	202+00	201+76		202+34	58	PFO4B	15	0.00	0	0	0.00	15	*** 0.00
32	205+26	193+91		196+00	209	PFO4B	1745	0.04	5	0	0.00	1745	0.04
34	340-1	284+22		289+51	529	PSS1B/PFO4B	20352	0.47	1400	12071	0.28	32422	0.74
38	415-1	358+30		378+90	2060	PFO4B	112700	2.59	39500	82700	1.90	174680	4.01
50	800-1	765+00		767+20	220	PFO4B	750	0.02	64	17765	0.41	18515	0.43
53	895-1	892+31		914+45	2214	PFO4B	110299	2.53	*20400	103406	2.37	213705	4.91
54	910-2	918+20		921+20	300	PFO4B	7549	0.17	300	30849	0.71	38398	0.88
54-58	955-2	923+43		1026+57	10314	PFO4B	589011	13.52	126600	247715	5.69	836726	19.21
58-60	955-2	1040+00		1087+75	4775	PFO4B	276138	6.34	62300	62811	1.44	338949	7.78
60-61	955-2	1096+55		1125+25	2870	PFO4B	163688	3.76	29000	29369	0.67	193057	4.43
61	955-2	1129+25		1140+20	1095	PFO4B	64161	1.47	13700	14065	0.32	78226	1.80
61-62	1185-1	1140+20		1163+73	2353	PFO4B/PSS1B	117360	2.69	16600	44530	1.02	161890	3.72
62	1185-1	1169+31		1172+62	331	PFO4B/PSS1B	15944	0.37	2100	12630	0.29	28574	0.66
63	1185-1	1177+45		1187+30	985	PFO4B/PSS1B	66447	1.53	17500	6915	0.16	73362	1.68
63-64	1185-1	1190+32		1206+70	1638	PFO4B/PSS1B	89807	2.06	17000	23818	0.55	113625	2.61
64	1185-1	1207+60		1215+84	824	PFO4B/PSS1B	41219	0.95	4600	10429	0.24	51648	1.19
64	1220-1	1218+40		1229+08	1068	PFO4B/PSS1B	59485	1.37	10400	10091	0.23	69576	1.60
64	1220-1	1232+00		1233+31	131	PFO4B/PSS1B	7263	0.17	1100	1769	0.04	9032	0.21
65-66	1260-1	1261+15		1272+80	1165	PF04B/PSS4B	59966	1.38	9900	10592	0.24	70558	1.62
66	1275-1	1276+88		1287+40	1052	PFO4B	36748	0.84	2700	10027	0.23	46775	1.07
70	1360-1	1370+40		1377+26	686	PFO4B	33899	0.78	5300	7840	0.18	41739	0.96
71	1375-1	1384+76		1388+92	416	PFO4B	12218	0.28	800	13762	0.32	25980	0.60
						TOTAL FILL IMPACT =		43.86	361,956				
										**TOTAL EXCAVATION IMPACT =		17.29	
												TOTAL IMPACT =	60.67

* Includes 2.4 C.Y., 66 S.F. ditch block (See sheet 53 of 90 for location)

"ID" refers to wetland identification numbers in Wetland Report, Appendix O, of the Final EIS, also found on detail sheets, e.g., ID 340-1 is found on sheet 34 of 90.

** The excavation impacts are outside of the fill impacts.

*** Sliver fill to totaling less than 0.01 acre.

WETLANDS SUMMARY

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2
AT: JUNEAU, ALASKA
LOCATED IN:

DETAIL PLAN SHEETS
DATE: JULY 2014

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FILL BELOW HIGH TIDE LINE (21.0')									
SHEET #	SURVEY #	STATION	TO	STATION	LENGTH (FT)	FILL			
						S.F.	ACRES	VOL. (C.Y.)	
								< 21.0'	>21.0' *
73	NA	1454+00				435	0.01	50	50
74-75	EIT-36	1489+15		1515+50	2,635	127,000	2.92	16,265	20,620
77	EIT-35	1571+50		1575+65	415	16,065	0.37	885	1,650
77	EIT-34	1581+40		1582+25	85	1,190	0.03	30	70
78	EIT-24 & STN-3	1719+70		1735+58	1,588	151,425	3.48	3,945	10,500
80	EIT-22	1804+50		1805+75	125	870	0.02	20	45
81	EIT-21	1831+00		1844+00	1,300	22,840	0.52	550	1,370
82-83	STN 6-8	2099+85		2124+30	2,445	314,705	7.22	11,115	13,590
84	EIT-21	2503+18		2503+94	76	815	0.02	15	50
84	EIT-21	2551+65		2561+90	1,025	52,250	1.20	7,165	2,540
85	EIT-21	2565+50		2581+85	1,635	230,470	5.29	39,010	29,020
85-86	EIT-14	2585+00		2592+30	730	27,455	0.63	7,185	38,745
87	EIT-13	2628+50		2637+65	915	137,215	3.15	20,135	44,345
90	KATZ 1-4	2761+75		2766+25	450	26,920	0.62	3,310	6,550
90	KATZ 1-4	FERRY TERMINAL				166,728	3.83	61,200	14,400
					TOTALS =	**1,276,383**	**29.31**	**170,880**	**183,545**
KATZEHIN FERRY TERMINAL BREAKWATER FILL									
						S.F.	**ACRES**		
	EIT-11/ KATZ 1-4					119,388	2.74	49,400	1,600
KATZEHIN FERRY TERMINAL DREDGE									
						S.F.	**ACRES**	**VOL. C.Y.**	
	KATZ 1-4					191,720	4.40	40000	

*** Fill above elevation 21.0', but seaward of the vertical plane of the 21.0' contour.**

Survey # refers to ID found on detail sheets.

TIDELANDS FILL SUMMARY

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

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LOCATED IN:

DETAIL PLAN SHEETS
DATE: JULY 2014

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CULVERT AND STREAM FILL SUMMARY

STATION	CULVERT LENGTH						RIPRAP (C.Y.)	BEDDING (C.Y.)	FOOTPRINT (S.F.)	CONCRETE (C.Y.)	COMMENTS
	24" D	36" D	48" D	60" D	72" D	OTHER					
From STA 58+00 to 200+00: Glacier Hwy Extension, Proj No. 69583 completes all culvert work shown in 2006 Corp Permit.											
203+57						42		N/A	N/A		CASCADE CREEK 18'0"x5'9" ALUMINUM ARCH
206+71		126						39.5	756		
208+60	90							19.8	450		
211+54	88							19.3	440		
224+40			150					62.3	1050		
225+39	125' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										DRAINAGE FILLED. FLOW INTERCEPTED AT FOLLOWING CULVERT
225+69			132					54.8	924		
227+65			114					47.4	798		
232+70	66							14.5	330		
234+89	76							16.7	380		
254+50		110						34.5	660		
256+65		106						33.2	636		
257+69	92							20.2	460		
275+77		95						29.8	570		
286+63		96		`				*	576		
288+80	62							*	310		
290+50	57							12.5	285		
299+41		74						23.2	444		
316+57		178						55.8	1068		
325+97			104					43.2	728		
330+37				65			53	34.1	520	2.8	2-TYPE I HEADWALLS, PIPE OUTLET SPILLWAY
333+79	90							19.8	450		
335+04			132					54.8	924		
341+65		122						38.3	732		
342+78		128						40.1	768		
343+64		134						42.0	804		
347+69		140					39	43.9	840		PIPE OUTLET SPILLWAY RIPRAP
349+90		138					58	43.3	828		PIPE OUTLET SPILLWAY RIPRAP
351+31				150			129	78.8	1200	2.8	2-TYPE I HEADWALLS, PIPE OUTLET SPILLWAY
352+19			136				104	56.5	952		PIPE OUTLET SPILLWAY RIPRAP
353+53	116						16	25.5	580		PIPE OUTLET SPILLWAY RIPRAP
361+97	66							*	330		
366+85		98					*	*	588		PIPE OUTLET SPILLWAY RIPRAP
369+42		130						*	780		
386+42		73					28	22.9	438		PIPE OUTLET SPILLWAY RIPRAP
397+38		152						47.7	912		PIPE OUTLET SPILLWAY RIPRAP
400+18		58					46	18.2	348		PIPE OUTLET SPILLWAY RIPRAP
402+49		54					56	16.9	324		PIPE OUTLET SPILLWAY RIPRAP
409+94						307	50	465.6	4605	9.2	144" PIPE, 2-TYPE I HEADWALLS, PIPE OUTLET SPILLWAY
424+08	52						18	11.4	260		PIPE OUTLET SPILLWAY RIPRAP
442+82		196						61.5	1176		

* QUANTITY OF THIS ITEM IS INCLUDED IN WETLANDS FILL VOLUME. NOTE: EACH CULVERT LISTING GIVES LENGTH IN FEET.

CULVERT SUMMARY

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AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

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CULVERT AND STREAM FILL SUMMARY

STATION	CULVERT LENGTH						RIPRAP (C.Y.)	BEDDING (C.Y.)	FOOTPRINT (S.F.)	CONCRETE (C.Y.)	COMMENTS
	24" D	36" D	48" D	60" D	72" D	OTHER					
450+88		120						37.6	720		
453+60		102						32.0	612		
457+51		169						53.0	1014		
468+06		105						32.9	630		
501+08		199						62.4	1194		
506+14		143						44.8	858		
510+96		196						61.5	1176		
537+03			102					42.4	714		
552+58					77			49.5	693		
555+68	100' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										DRAINAGE FILLED-FLOW CARRIED ALONG DITCH
556+25	90' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										DRAINAGE FILLED-FLOW CARRIED ALONG DITCH
757+70		54					39	16.9	324		PIPE OUTLET SPILLWAY RIPRAP
758+48	240' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
759+37		63					29	19.8	378		BACKSLOPE SPILLWAY RIPRAP
760+33	220' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
760+53		87					29	27.3	522		BACKSLOPE SPILLWAY RIPRAP
761+46	230' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
762+09	210' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
262+64	210' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
763+73		55					10	17.2	330		BACKSLOPE SPILLWAY RIPRAP
763+92	210' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
764+78	200' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
765+74		52						16.3	312		
766+56	230' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
768+32	350' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
770+32	200' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
773+00		80					8	25.1	480		PIPE OUTLET SPILLWAY RIPRAP
777+43		156					18	48.9	936		PIPE OUTLET SPILLWAY RIPRAP
784+20		84						26.3	504		
789+66	63							13.8	315		
800+54	106							23.3	530		
801+81		88					13	27.6	528		PIPE OUTLET SPILLWAY RIPRAP
803+41	86						13	18.9	430		PIPE OUTLET SPILLWAY RIPRAP
806+43	126							27.7	630		
810+70		125						39.2	750		

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CULVERT AND STREAM FILL SUMMARY

STATION	CULVERT LENGTH						RIPRAP (C.Y.)	BEDDING (C.Y.)	FOOTPRINT (S.F.)	CONCRETE (C.Y.)	COMMENTS
	24" D	36" D	48" D	60" D	72" D	OTHER					
815+39	97							21.3	485		
819+18	72							15.8	360		
824+41	75							16.5	375		
829+91	71							15.6	355		
833+91	77							16.9	385		
835+91	68							14.9	340		
837+41	54							11.9	270		
840+54		68					50	21.3	408		SKEW 14°-21', RT. AHEAD, PIPE OUTLET SPILLWAY
843+03	66							14.5	330		
845+21	68						22	14.9	340		PIPE OUTLET SPILLWAY RIPRAP
848+41	68						3	14.9	340		PIPE OUTLET SPILLWAY RIPRAP
850+80	60						20	13.2	300		PIPE OUTLET SPILLWAY RIPRAP
853+21	78							17.1	390		
855+01	75							16.5	375		
858+91		99						31.0	594		
861+91		58						18.2	348		
864+81		67						21.0	402		
872+39		90						28.2	540		
877+68		94					11	29.5	564		PIPE OUTLET SPILLWAY RIPRAP
886+40		74						23.2	444		
889+94		90						28.2	540		
891+70		106						33.2	636		
892+70		82						25.7	492		
895+70		71						22.3	426		
897+07				73				38.3	584		SKEW 15°-42', RT. AHEAD, TYPE 1 HEADWALL
904+15		72						22.6	432		
905+80		58						18.2	348		
907+02		71						22.3	426		SKEW 28°-4' LT. AHEAD
907+62		76						23.8	456		SKEW 6°-53' RT. AHEAD
911+41	53							11.6	265		
914+12		57						*	342		BACKSLOPE SPILLWAY RIPRAP
914+65	150' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										THRU CUT-FLOW CARRIED ALONG DITCH
917+41	54							11.9	270		
920+00		59						*	354		
923+70		53						*	318		
929+70		53						*	318		
935+70		52						*	312		
944+28	51							*	255		
945+50	64							*	320		
947+90		74						*	444		
953+92	56							*	280		
956+88	65							*	325		
959+91	66							*	330		
961+85	68							*	340		

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CULVERT SUMMARY

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CULVERT AND STREAM FILL SUMMARY

STATION	CULVERT LENGTH						RIPRAP (C.Y.)	BEDDING (C.Y.)	FOOTPRINT (S.F.)	CONCRETE (C.Y.)	COMMENTS
	24" D	36" D	48" D	60" D	72" D	OTHER					
964+90	68							*	340		
968+31	66							*	330		
971+41	70							*	350		
974+41	67							*	335		
977+06		62						*	372		
980+41	62							*	310		
984+41	57							*	285		
987+41	60							*	300		
991+03		64						*	384		
993+86	61							*	305		
996+41	59							*	295		
1001+41	68							*	340		
1004+41	67							*	335		
1008+15		73						*	438		
1011+93	55							*	275		
1016+15					88			*	792	*	TYPE 1 HEADWALL
1016+40	130' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										DRAINAGE FILLED. FLOW INTERCEPTED AT PRECEDING CULVERT
1018+86			83					34.5	581		
1020+44	65						*	*	325		PIPE OUTLET SPILLWAY RIPRAP
1021+06	73						*	*	365		PIPE OUTLET SPILLWAY RIPRAP
1022+52					91		*	*	819	*	SKEW 11°-23' LT AHEAD, TYPE 1 HEADWALL
1024+25				106				*	848	*	SKEW 12°-50' RT. AHEAD, TYPE 1 HEADWALL
1027+27	55							12.1	275		
1028+18	52							11.4	260		SKEW 19°-28' RT. AHEAD
1029+26	55							12.1	275		
1031+93		62						19.4	372		
1034+94		63						19.8	378		
1042+10		72					*	*	432		PIPE OUTLET SPILLWAY RIPRAP
1051+08	75							*	375		
1051+65	160' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										DRAINAGE FILLED. FLOW INTERCEPTED AT PRECEDING CULVERT
1053+93		70					*	*	420		PIPE OUTLET SPILLWAY RIPRAP
1056+92		64					*	*	384		PIPE OUTLET SPILLWAY RIPRAP
1059+93			85					*	595		SKEW 15°-33' RT. AHEAD
1063+45	62							*	310		
1065+29	62							*	310		SKEW 20°-34' LT. AHEAD
1067+08	74							*	370		SKEW 33°-19' RT. AHEAD
1070+40	53							*	265		
1073+41	59							*	295		
1076+41	60							*	300		
1081+19			75					*	525		
1085+40		74						*	444		

* QUANTITY OF THIS ITEM IS INCLUDED IN WETLANDS FILL VOLUME. NOTE: EACH CULVERT LISTING GIVES LENGTH IN FEET.

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CULVERT AND STREAM FILL SUMMARY

STATION	CULVERT LENGTH						RIPRAP (C.Y.)	BEDDING (C.Y.)	FOOTPRINT (S.F.)	CONCRETE (C.Y.)	COMMENTS
	24" D	36" D	48" D	60" D	72" D	OTHER					
1089+75			113					46.9	791		
1095+90		66						20.7	396		
1099+50					68		*	*	612	*	PIPE OUTLET SPILLWAY, TYPE 1 HEADWALL
1103+19		87						*	522		SKEW 30°-38' RT. AHEAD
1107+72		86						*	516		SKEW 32°-24' RT. AHEAD
1109+33	68							*	340		SKEW 32°-24' RT. AHEAD
1113+85		68						*	408		SKEW 14°-05' LT. AHEAD
1114+91		75						*	450		SKEW 20°-02' LT. AHEAD
1116+90	54							*	270		
1120+23					72		*	*	648	*	SKEW 8°-20' RT. AHEAD, TYPE 1 HEADWALL
1124+03	78							*	390		
1127+40		62						19.4	372		
1135+40		60					*	*	360		PIPE OUTLET SPILLWAY RIPRAP
1139+60					86		*	*	774	*	SKEW 38°-33' RT. AHEAD, TYPE 1 HEADWALL
1139+82	130' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										DRAINAGE FILLED. FLOW INTERCEPTED AT PRECEDING CULVERT
1141+90	57							*	285		
1146+90		59						*	354		
1150+60	65							*	325		
1152+44				60			*	*	480	*	PIPE OUTLET SPILLWAY, TYPE 1 HEADWALL
1155+36		81						*	486		SKEW 28° RT. AHEAD
1161+41		50						*	300		
1162+20	420' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										DRAINAGE FILLED. FLOW INTERCEPTED AT PRECEDING CULVERT
1164+41		71						22.3	426		
1168+89		62						19.4	372		
1172+13		70						*	420		
1173+78	75						14	16.5	375		PIPE OUTLET SPILLWAY RIPRAP
1176+50	63						12	13.8	315		SKEW 8°-17' LT. AHEAD, PIPE OUTLET SPILLWAY
1178+07		61					*	*	366		SKEW 12°-51' RT. AHEAD, PIPE OUTLET SPILLWAY
1183+00		72					*	*	432		SKEW 28°-42' RT. AHEAD, PIPE OUTLET SPILLWAY
1185+40	72							*	360		SKEW 19°-46' RT. AHEAD
1186+76	60							*	300		
1189+41	72							15.8	360		
1193+13		79						*	474		
1198+08					90		*	*	810	*	PIPE OUTLET SPILLWAY, TYPE 1 HEADWALL
1201+40	50							*	250		
1203+97	58							*	290		
1205+96	63							*	315		

* QUANTITY OF THIS ITEM IS INCLUDED IN WETLANDS FILL VOLUME. NOTE: EACH CULVERT LISTING GIVES LENGTH IN FEET.

CULVERT SUMMARY

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CULVERT AND STREAM FILL SUMMARY

STATION	CULVERT LENGTH						RIPRAP (C.Y.)	BEDDING (C.Y.)	FOOTPRINT (S.F.)	CONCRETE (C.Y.)	COMMENTS
	24" D	36" D	48" D	60" D	72" D	OTHER					
1207+08	67							14.7	335		SKEW 19°-21' RT. AHEAD
1208+57	62							*	310		
1210+94		76						*	456		
1213+40	52							*	260		
1216+40	64							14.1	320		
1218+93			79					*	553		
1222+78			59					*	413		
1225+60	65							*	325		
1227+42	61							*	305		
1230+16		69						21.6	414		
1233+19			52					*	364		PIPE OUTLET SPILLWAY RIPRAP
1235+21	47						13	10.3	235		PIPE OUTLET SPILLWAY RIPRAP
1238+05	100' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										DRAINAGE FILLED. FLOW INTERCEPTED AT FOLLOWING CULVERT
1238+29		83					4	26.0	498		PIPE OUTLET SPILLWAY RIPRAP
1240+01	62						12	13.6	310		PIPE OUTLET SPILLWAY RIPRAP
1240+95		60					14	18.8	360		PIPE OUTLET SPILLWAY RIPRAP
1244+57		55					8	17.2	330		PIPE OUTLET SPILLWAY RIPRAP
1246+53	60						4	13.2	300		SKEW 16°-30' RT. AHEAD, PIPE OUTLET SPILLWAY
1248+22	57							12.5	285		
1251+41	55							12.1	275		
1254+40	56							12.3	280		
1257+41	59							13.0	295		
1262+41	62							*	310		
1264+91	57							*	285		
1267+91	53							*	265		
1271+21		69						*	414		SKEW 20°-09' LT. AHEAD
1273+00		84						26.3	504		SKEW 20°-26' LT. AHEAD
1274+90	76							16.7	380		
1279+41	60							*	300		
1282+42	50							*	250		
1291+16		106						33.2	636		SKEW 36°-27' LT. AHEAD
1295+71	84							18.4	420		SKEW 25°-10' LT. AHEAD
1317+41	52							11.4	260		
1321+62	71							15.6	355		
1324+14		56						17.6	336		
1328+05		74						23.2	444		
1329+43		78						24.5	468		
1331+66		83						26.0	498		
1334+30		98						30.7	588		
1335+46		76						23.8	456		
1350+80						89					240" PIPE
1354+36		56						17.6	336		
1362+27		68					8	21.3	408		PIPE OUTLET SPILLWAY RIPRAP
1364+51	66							14.5	330		
1369+10	71							15.6	355		

* QUANTITY OF THIS ITEM IS INCLUDED IN WETLANDS FILL VOLUME. NOTE: EACH CULVERT LISTING GIVES LENGTH IN FEET.

CULVERT SUMMARY

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2
AT: JUNEAU, ALASKA
LOCATED IN:

DETAIL PLAN SHEETS
DATE: JULY 2014

CULVERT AND STREAM FILL SUMMARY

STATION	CULVERT LENGTH						RIPRAP (C.Y.)	BEDDING (C.Y.)	FOOTPRINT (S.F.)	CONCRETE (C.Y.)	COMMENTS
	24" D	36" D	48" D	60" D	72" D	OTHER					
1369+87	65							14.3	325		
1372+29	73						*	*	365		PIPE OUTLET SPILLWAY RIPRAP
1374+03	72							15.8	360		
1377+50	88							19.3	440		SKEW 48°-39' LT. AHEAD
1381+51	59							13.0	295		
1384+87	58							*	290		
1391+28	56							12.3	280		
1395+50	54							11.9	270		
1400+00		85						26.7	510		
1406+06	73							16.0	365		
1409+08	63							13.8	315		
1411+51	67							14.7	335		
1414+51	67						3	14.7	335		PIPE OUTLET SPILLWAY RIPRAP
1418+51	67						8	14.7	335		PIPE OUTLET SPILLWAY RIPRAP
1422+51	67						4	14.7	335		PIPE OUTLET SPILLWAY RIPRAP
1425+52	54						8	11.9	270		PIPE OUTLET SPILLWAY RIPRAP
1433+01		68						21.3	408		
1446+39	66							14.5	330		
1474+23				78			4.5	41.0	624	1.4	TYPE 1 HEADWALL
1480+35				88			4.5	46.2	704	1.4	TYPE 1 HEADWALL
1481+65				68				35.7	544		
1487+35				96			4.5	50.4	768	1.4	TYPE 1 HEADWALL
1492+61				68			4.5	35.7	544	1.4	TYPE 1 HEADWALL
1498+78				82			4.5	43.1	656	1.4	TYPE 1 HEADWALL
1502+23			106					44.0	742		
1508+30			102					42.4	714		
1511+11			100					41.5	700		
1514+51				80			4.5'	42.0	640	1.4	TYPE 1 HEADWALL
1517+10				164				86.1	1312		
1517+46	190' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										DRAINAGE FILLED. FLOW INTERCEPTED AT PRECEDING CULVERT
1525+60	90' OF DRAINAGE CHANNEL REMOVED AND RE-ROUTED										DRAINAGE FILLED. FLOW INTERCEPTED AT FOLLOWING CULVERT
1525+76	72							15.8	360		
1528+36	54							11.9	270		
1530+54	72							15.8	360		
1532+90	54							11.9	270		
1534+84	82							18.0	410		
1538+26	75							16.5	375		
1539+53	75							16.5	375		
1541+26	72							15.8	360		
1543+67		102						32.0	612		
1546+10		143						44.8	858		
1549+00		156						48.9	936		
1552+27	79							17.3	395		
1558+85		186						58.3	1116		
** TOTALS	266 CULVERTS						997	4,948	127,444	23	

* QUANTITY OF THIS ITEM IS INCLUDED IN WETLANDS FILL VOLUME. NOTE: EACH CULVERT LISTING GIVES LENGTH IN FEET.

NOTE: EACH CULVERT LISTING GIVES LENGTH IN FEET.

*** THE QUANTITY OF THIS ITEM IS INCLUDED IN WETLANDS FILL VOLUME.**

**** THIS TOTAL IS FOR SHEETS 19 TO 25.**

CULVERT SUMMARY

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2
AT: JUNEAU, ALASKA
LOCATED IN:

DETAIL PLAN SHEETS
DATE: JULY 2014

CULVERT SUMMARY

STATION	CULVERT DIAMETER				STATION	CULVERT DIAMETER			
	24"	36"	48"	72"		24"	36"	48"	72"
1570+00		56			1842+00	56			
1574+00	54				1846+00	52			
1578+00	50				1850+00	52			
1582+00		54			1854+00	52			
1586+00	52				1858+00	52			
1594+00	52				1862+00	52			
1598+00	50				1866+00	52			
1603+00	52				1871+00	50			
1606+00	52				1875+00	50			
1610+00		66			1879+00	54			
1619+00	56				1883+00	54			
1623+00	50				1887+00	56			
1628+25		60			1891+00	56			
1633+00	50				1900+00		56		
1639+00	50				1909+00		56		
1643+00	50				1913+00	54			
1647+00	50				1916+00	54			
1650+00	52				1924+00	54			
1657+00			70		1930+00	54			
1660+00	52				1934+00	54			
1664+00	52				1938+00	54			
1669+00	52				1942+00	54			
1674+00		56			1946+00	54			
1677+50			96		1950+00	54			
1680+25			100		1954+00	54			
1683+00	54				1958+00	54			
1691+00	54				1962+00	54			
1695+00	60				1966+50		56		
1699+00	54				1971+00	54			
1703+00			54		1975+00	54			
1707+00	60				1979+00	54			
1711+00	54				1987+00	50			
1715+00	54				1991+00	50			
1719+00		60			1995+00	52			
1723+00	52				2000+00	50			
1727+00	52				2005+00	50			
1731+00	52				2008+00	50			
1735+00	60				2011+00	50			
1744+00	54				2019+00	50			
1746+00		64			2022+00	50			
1751+00		56			2028+00		56		
1754+50		56			2035+61			70	
1756+00		56			2048+00		56		
1773+00		52			2052+00	56			
1776+00		72			2055+00	52			
1790+00	54				2057+00		54		
1794+00	56				2059+00		54		
1798+00	56				2064+00		54		
1802+00	54				2068+50			54	
1809+00	54				2073+00	52			
1813+00	54				2077+00	52			
1818+00	56				2081+00	52			
1826+00				108	2087+00		52		
1830+00	52				2093+00	54			
1834+00	52				2097+00	54			
1838+00	52				2102+00				56

* NOTE: EACH CULVERT LISTING GIVES LENGTH IN FEET.

MORE BEDDING AND FOOTPRINT INFORMATION WILL BE PROVIDED FOLLOWING FUTURE GEOTECHNICAL AND OTHER SURVEYS.

CULVERT SUMMARY

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2
AT: JUNEAU, ALASKA
LOCATED IN:

DETAIL PLAN SHEETS
DATE: JULY 2014

CULVERT SUMMARY

STATION	CULVERT DIAMETER				STATION	CULVERT DIAMETER			
	24"	36"	48"	72"		24"	36"	48"	72"
2105+00	54				2369+33			56	
2109+00	54				2374+00	50			
2113+00	54				2383+00	50			
2117+00				56	2389+50			56	
2121+00	54				2394+00	50			
2124+00	54				2398+00	52			
2128+00	50				2402+00	52			
2132+00	50				2416+00		56		
2134+00	50				2423+00	52			
2138+00	54				2427+00	56			
2142+00			54		2435+00	56			
2146+00	52				2439+00	50			
2150+00	50				2443+00	56			
2155+00	50				2453+00		56		
2159+00	52				2463+00		56		
2163+00	52				2468+00	52			
2167+00	54				2473+00	52			
2171+00	52				2478+00		56		
2175+00	52				2483+00	50			
2180+00	52				2487+00	52			
2184+00	50				2496+00		54		
2194+00	54				2500+50	52			
2198+00	54				2507+00	52			
2204+50			56		2512+00	50			
2206+25		56			2516+00	50			
2213+00	50				2519+00	56			
2216+00	50				2526+50		56		
2220+00	52				2532+00	52			
2224+00	54				2536+00	50			
2228+00	52				2546+00	52			
2232+00	52				2551+00		56		
2236+00	52				2562+00		56		
2238+00			54		2568+00	52			
2242+00	56				2572+00	52			
2252+00			56		2576+00		56		
2256+00	52				2587+00	56			
2261+00		54			2598+00	50			
2267+00	50				2601+00	50			
2281+00			56		2613+00	56			
2285+00			56		2621+00	56			
2289+00	56				2654+00				110
2295+00			56		2662+00				130
2299+00	52				2681+00			118	
2303+00	52				2686+50			120	
2313+00	52				2695+50			120	
2317+00	50				2711+00				120
2327+00	50				2717+00			120	
2331+00	56				2725+00			110	
2334+00	52				2729+00		110		
2342+00	52				2733+00	56			
2347+00	50				2737+00		110		
2350+00	50				2741+00		86		
2355+00	50				2745+00	56			
2359+00	50				2749+00		100		
2364+00	52				2753+00		130		
					2757+00	96			

* NOTE: EACH CULVERT LISTING GIVES LENGTH IN FEET.

MORE BEDDING AND FOOTPRINT INFORMATION WILL BE PROVIDED FOLLOWING FUTURE GEOTECHNICAL AND OTHER SURVEYS.

CULVERT SUMMARY

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2
AT: JUNEAU, ALASKA
LOCATED IN:

DETAIL PLAN SHEETS
DATE: JULY 2014

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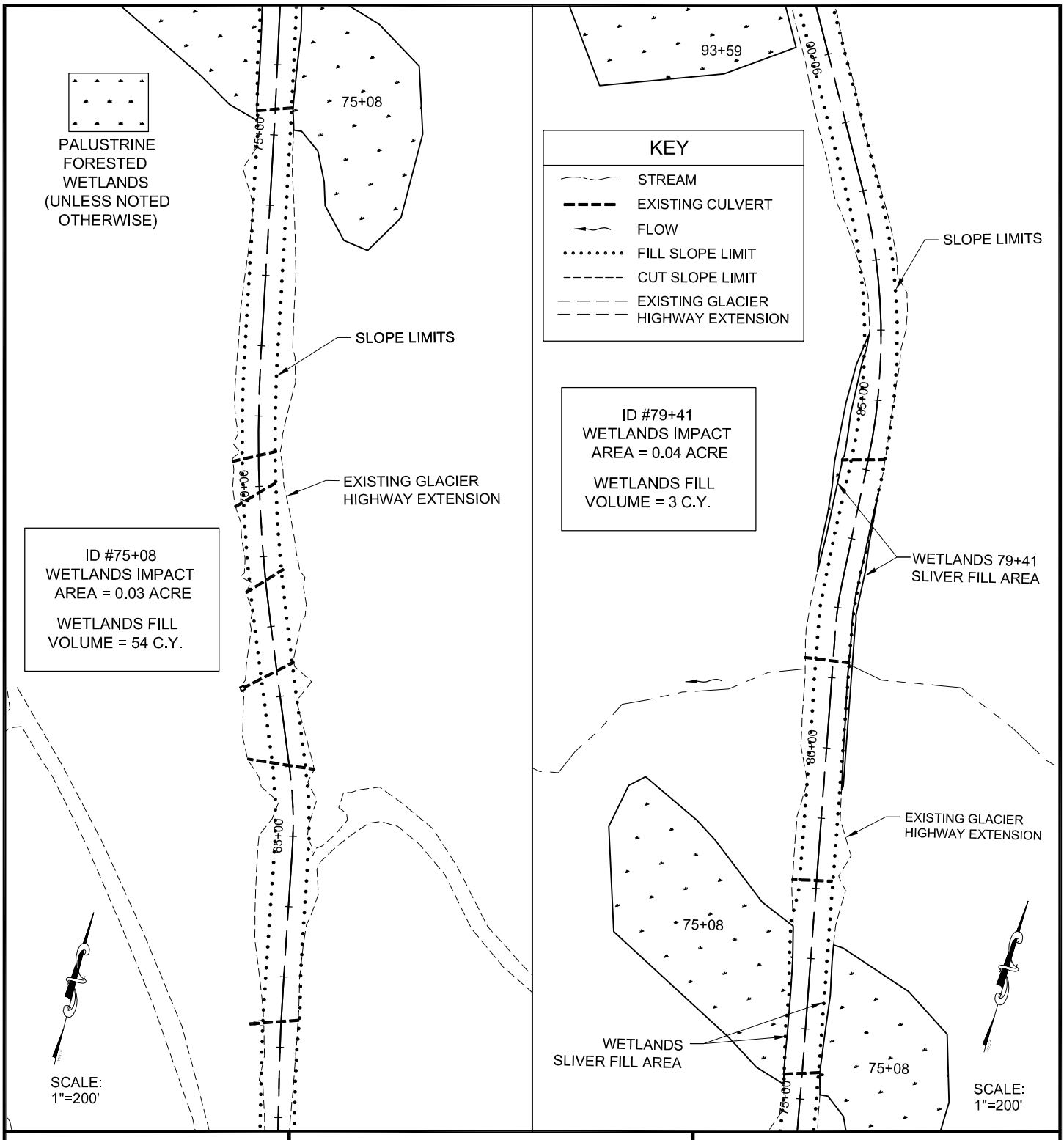

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. GOLDBELT, INC.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 37 S., R. 64 E.,
SECTIONS 7 & 18, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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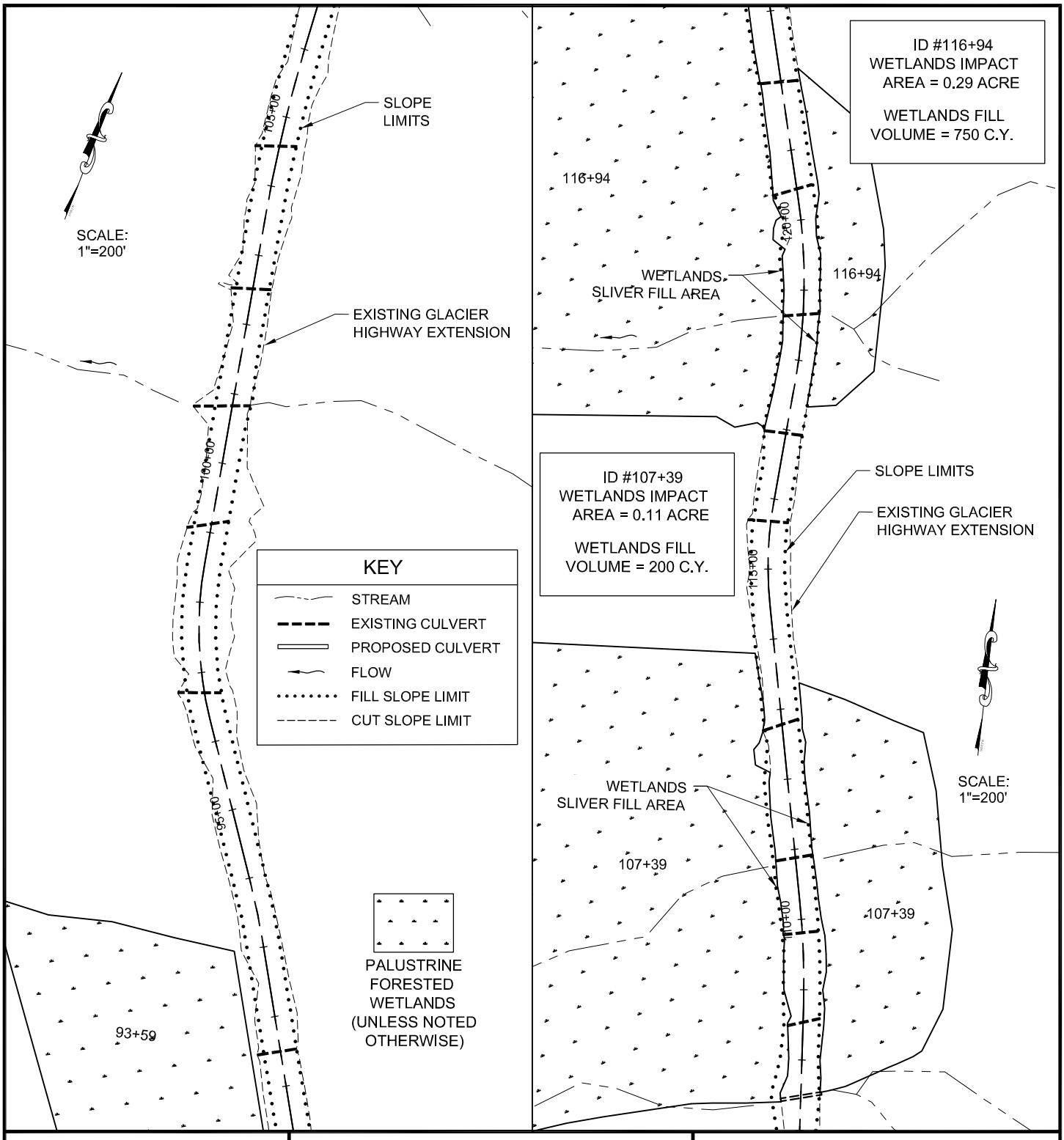

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. GOLDBELT, INC.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 37 S., R. 64 E.,
SECTIONS 7 & 18, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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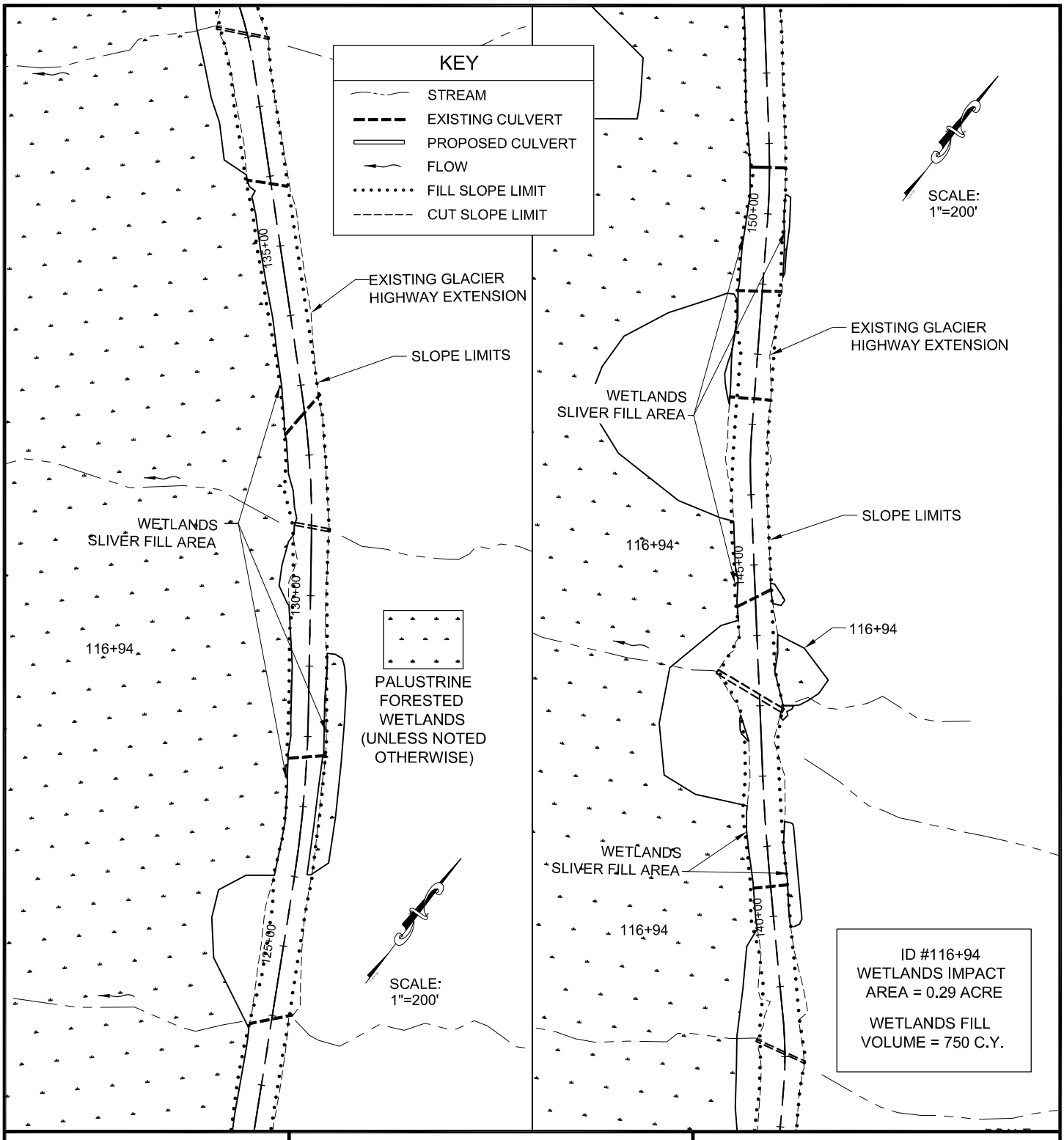

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. GOLDBELT, INC.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 37 S., R. 64 E.,
SECTIONS 6 & 7, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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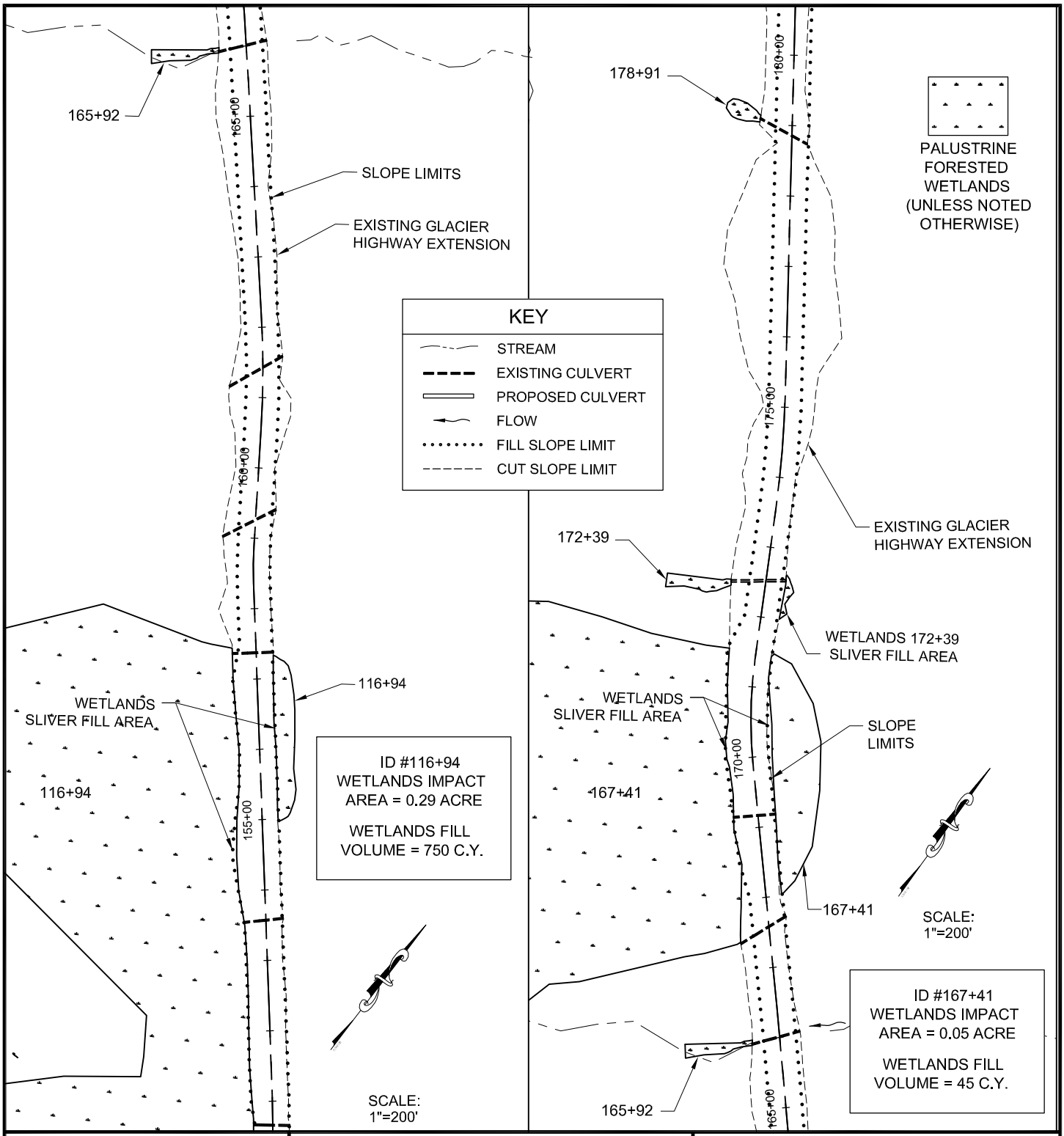

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. GOLDBELT, INC.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 37 S., R. 64 E.,
SECTIONS 6 & 7, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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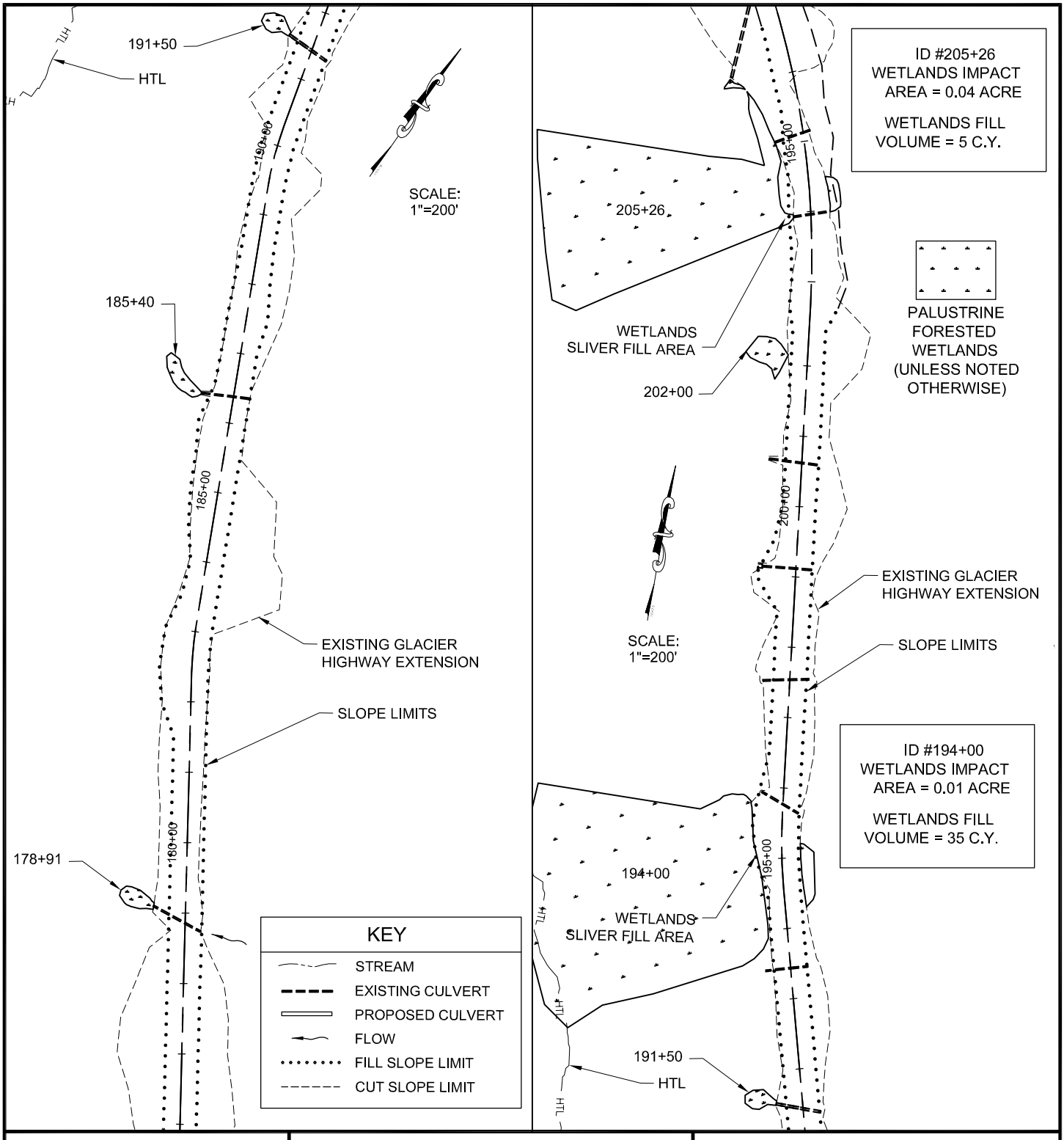

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. GOLDBELT, INC.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 37 S., R. 63 E., SECT. 1, C.R.M.
T. 37 S., R. 64 E., SECT. 6, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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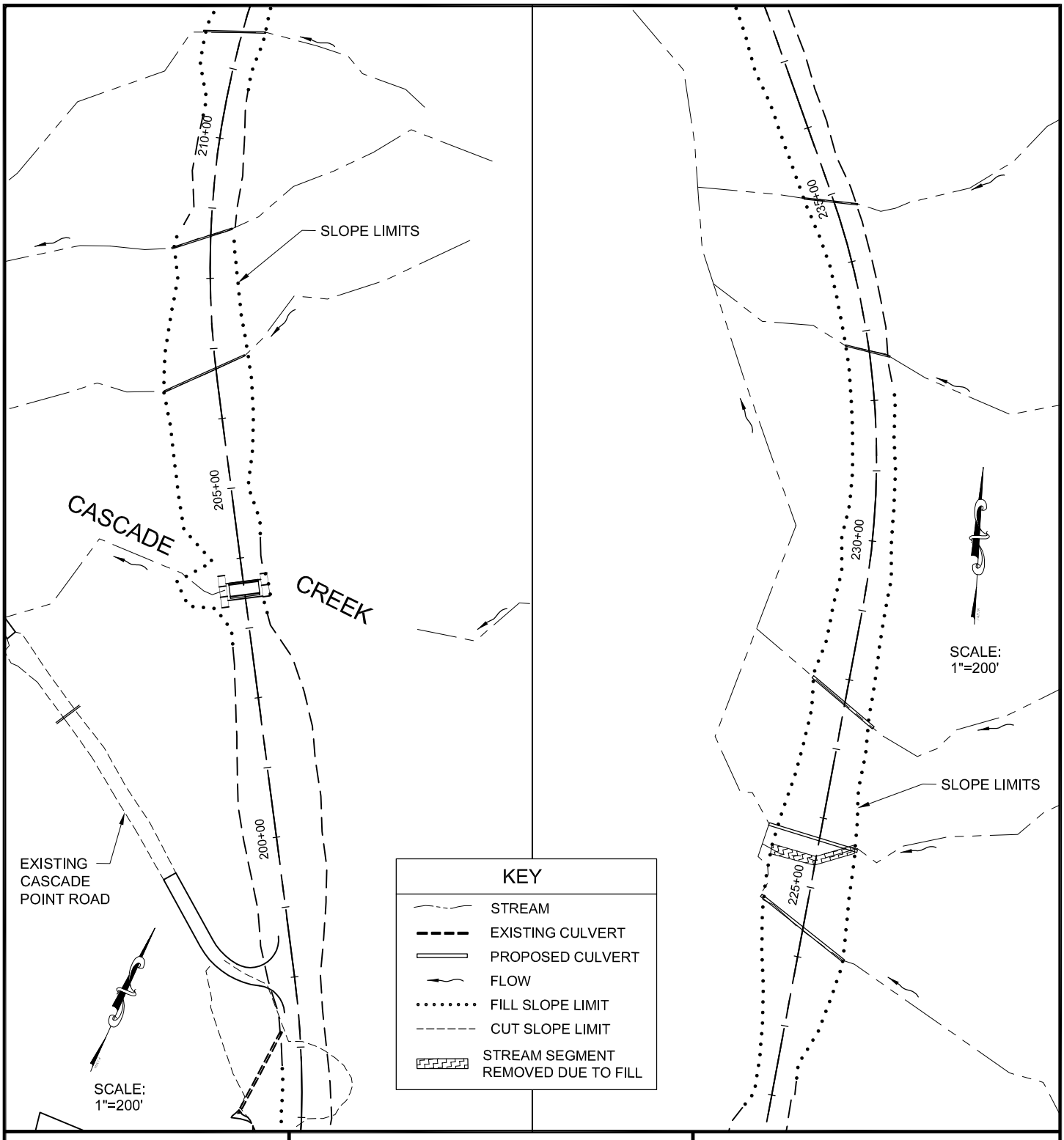

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. GOLDBELT, INC.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 37 S., R. 63 E., SECT. 1, C.R.M.
T. 36 S., R. 63 E., SECT. 32, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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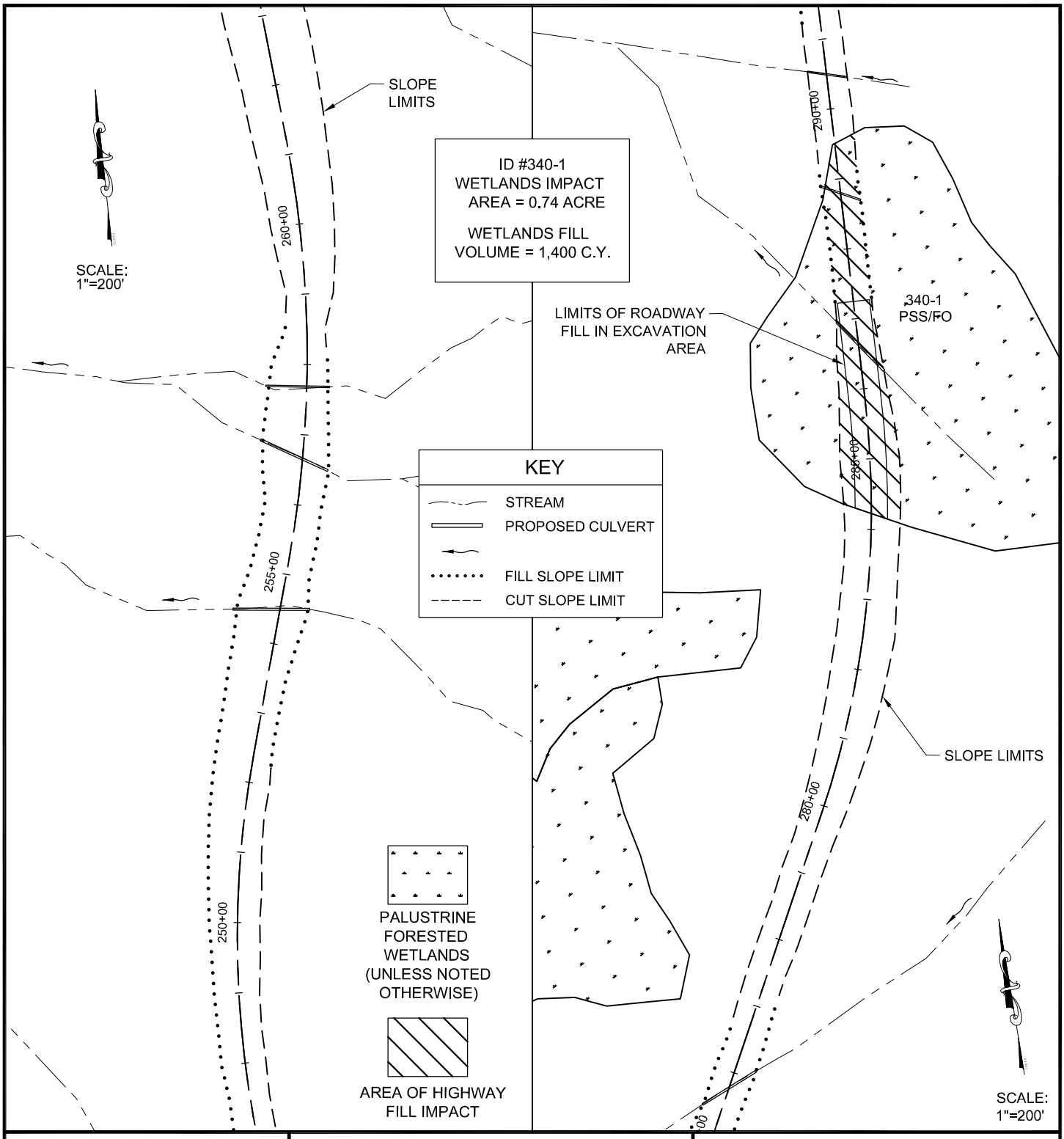

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 36 S., R. 63 E.,
SECTIONS 29 & 32, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 37 OF 93

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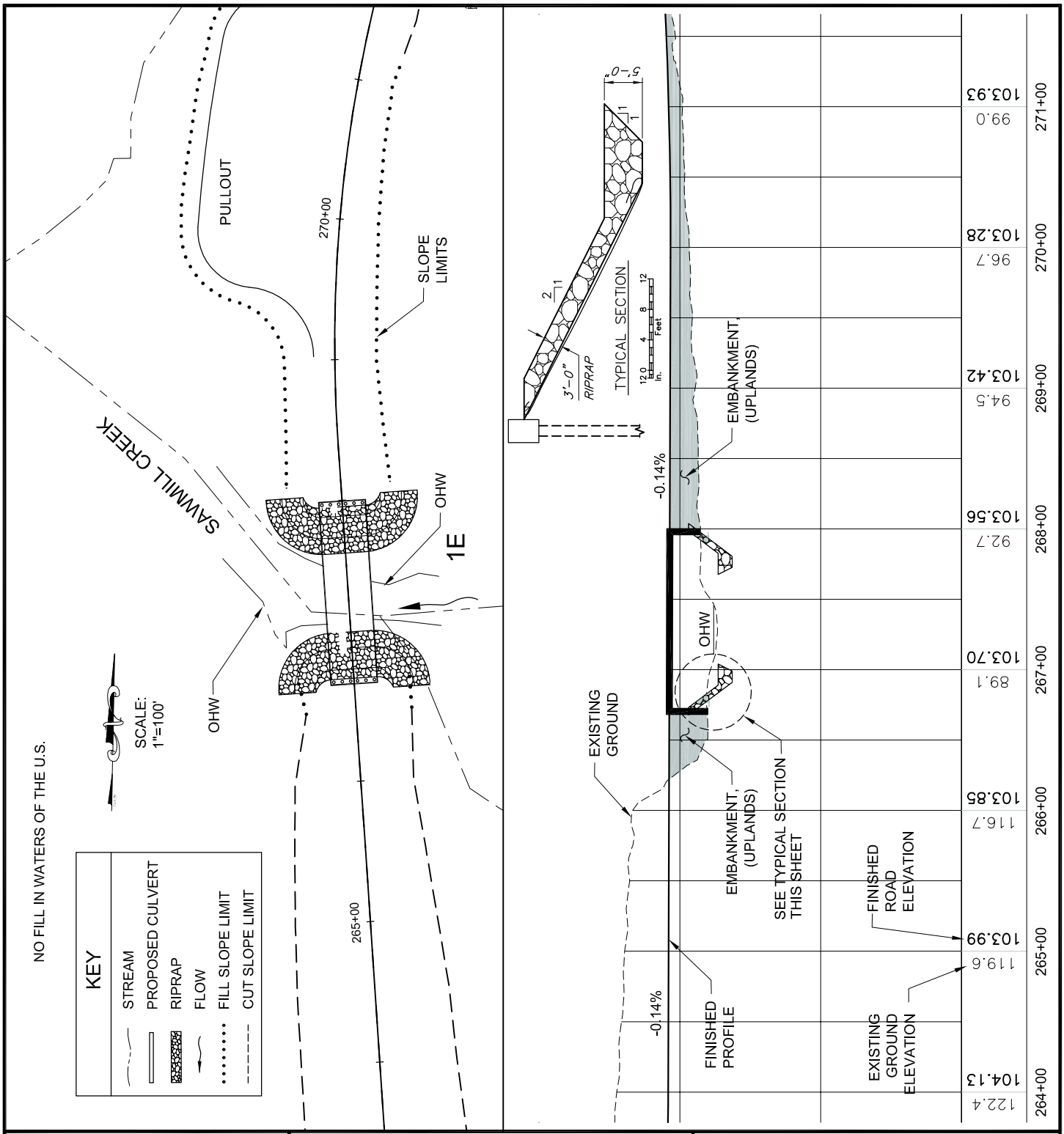

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Sawmill Creek Bridge
Bridge No. 1E

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 36 S., R. 63 E., SECT. 29, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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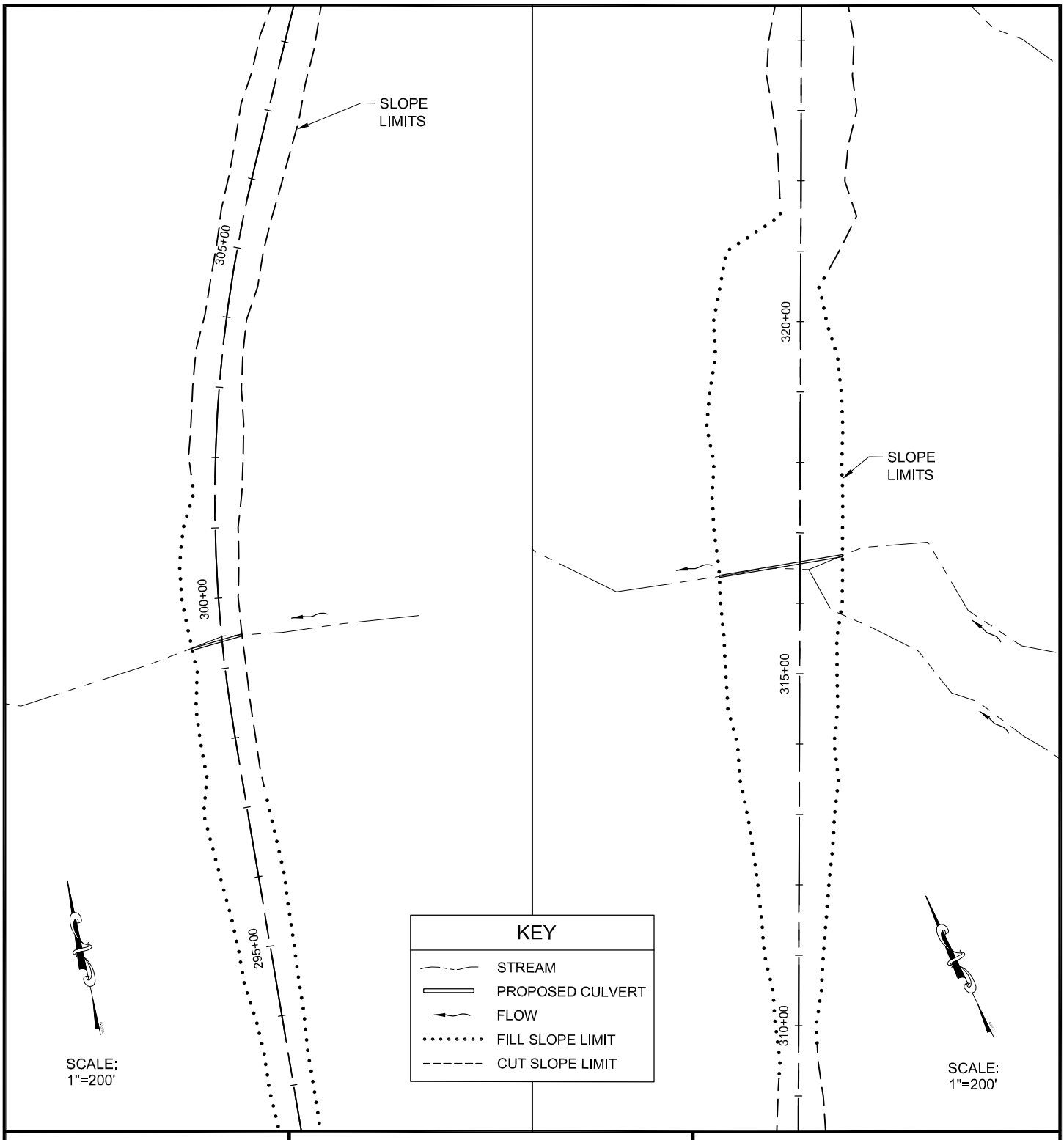

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 36 S., R. 63 E.,
SECTIONS 20 ,21 ,28 & 29, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 39 OF 93

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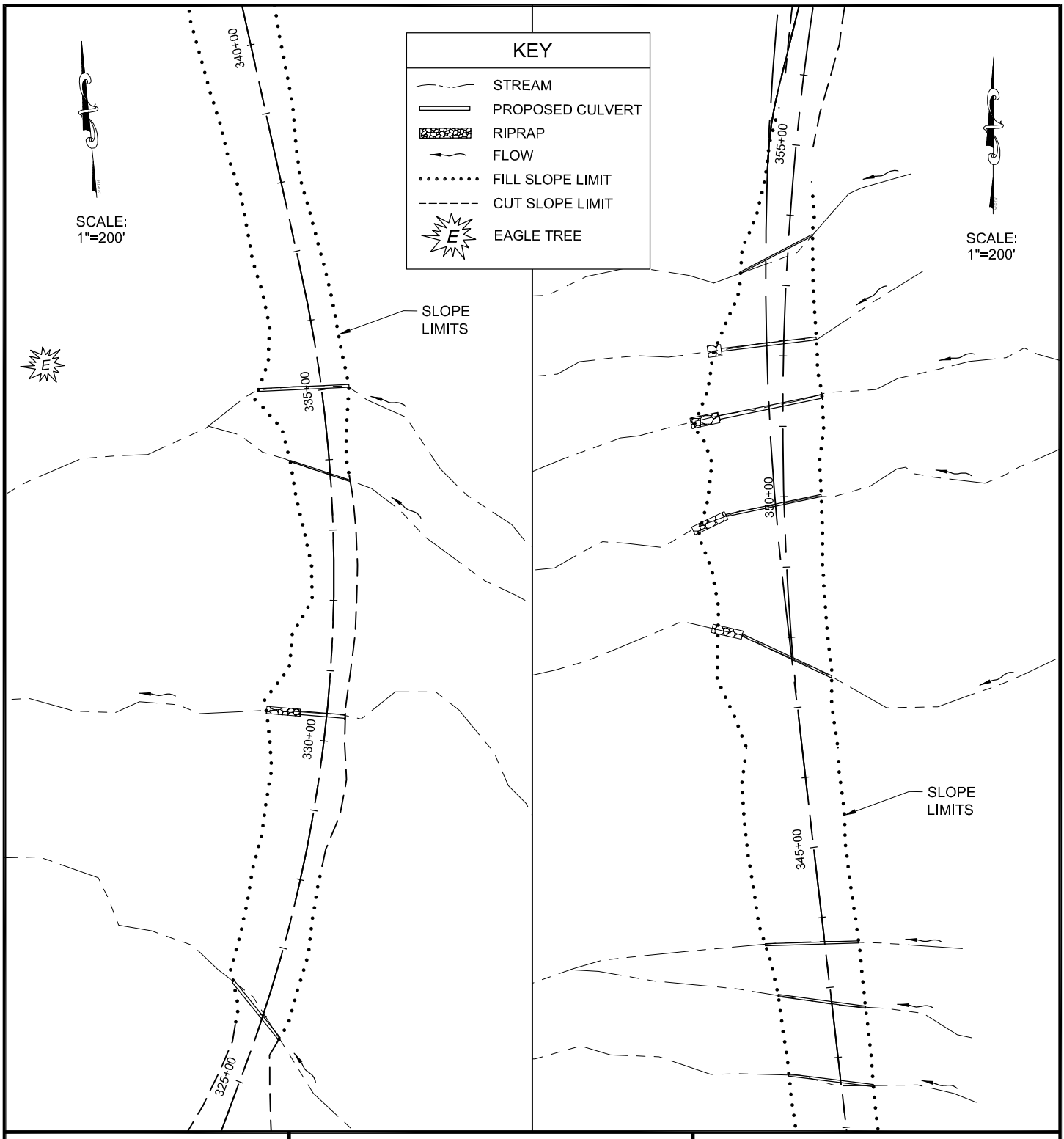

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. SEALASKA CORP.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 36 S., R. 63 E., SECT. 21, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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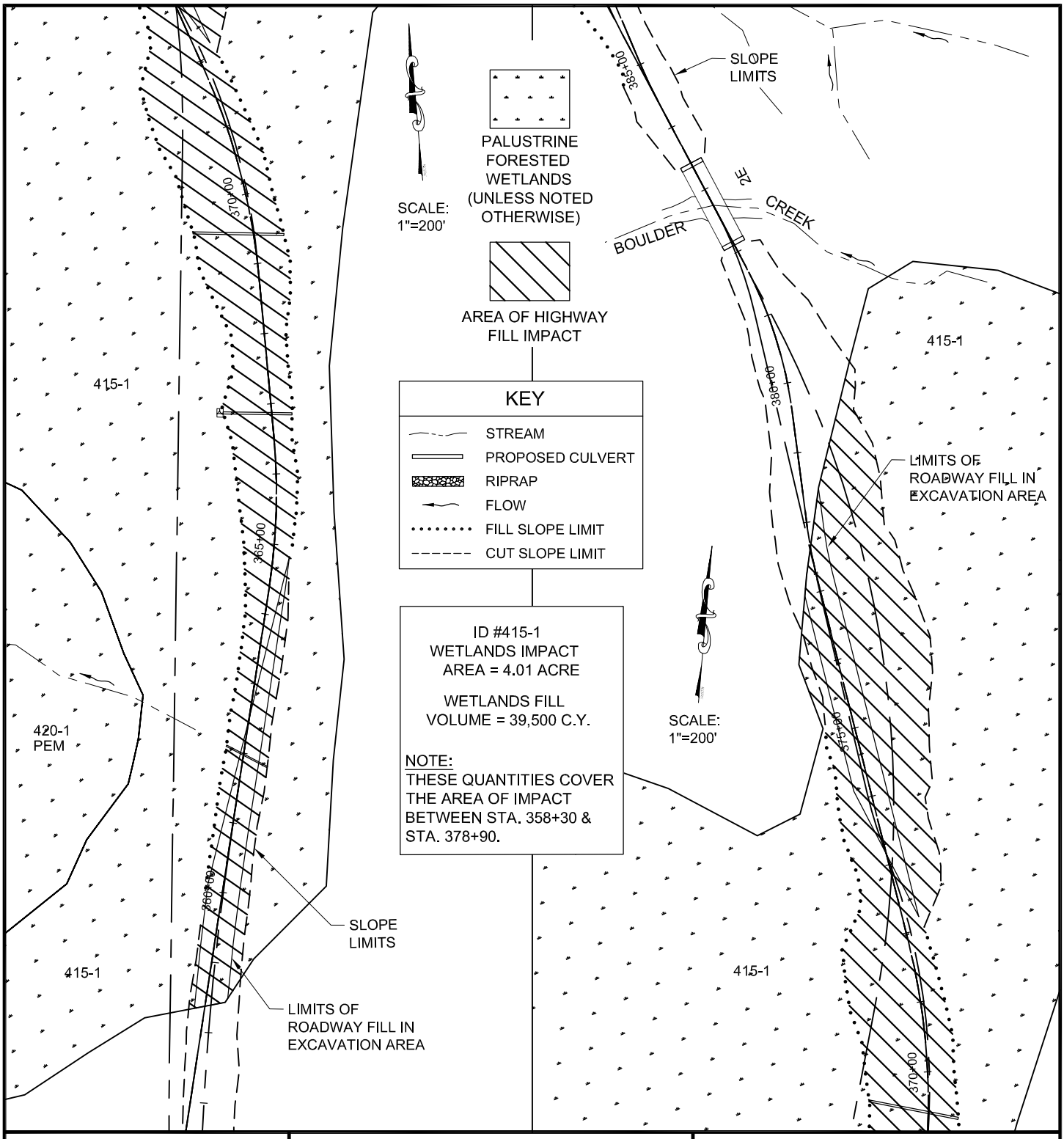

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 36 S., R. 63 E.,
SECTIONS 16 & 29, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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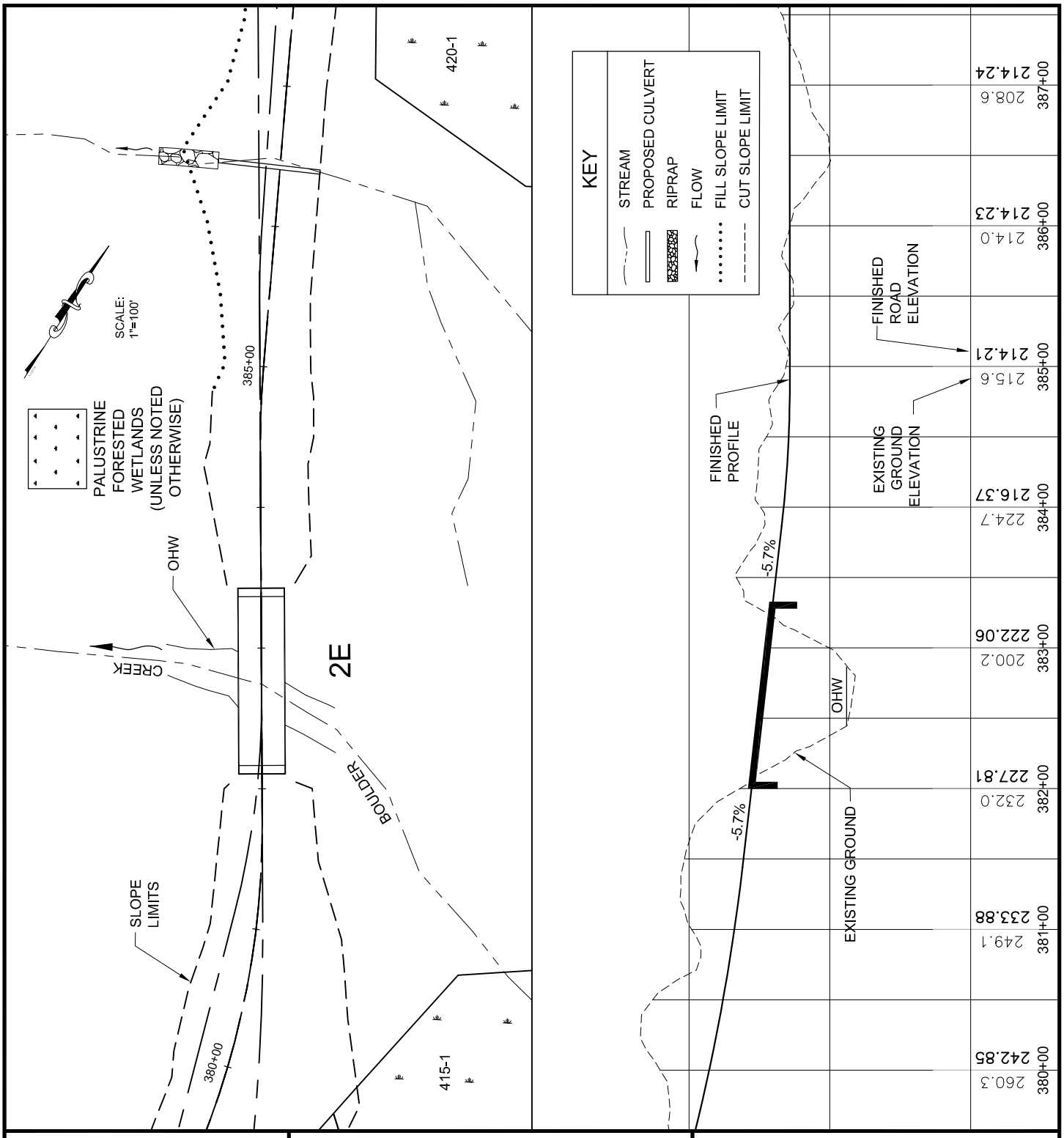

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. GAIL OLDS, ET AL.
3. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Boulder Creek Bridge
Bridge No. 2E

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 36 S., R. 63 E., SECT. 16, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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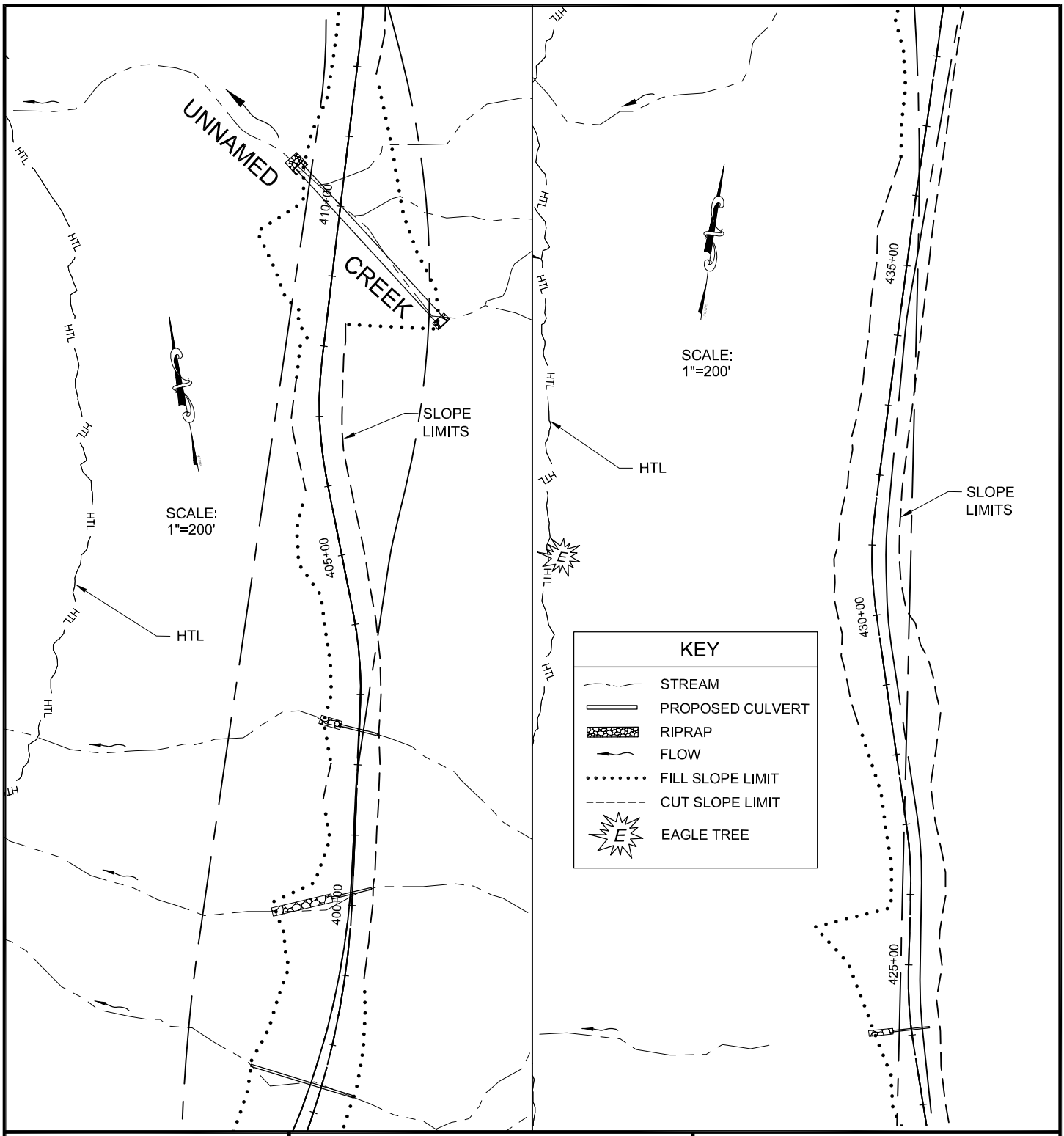

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 36 S., R. 63 E.,
SECTIONS 8, 9, 16 & 17, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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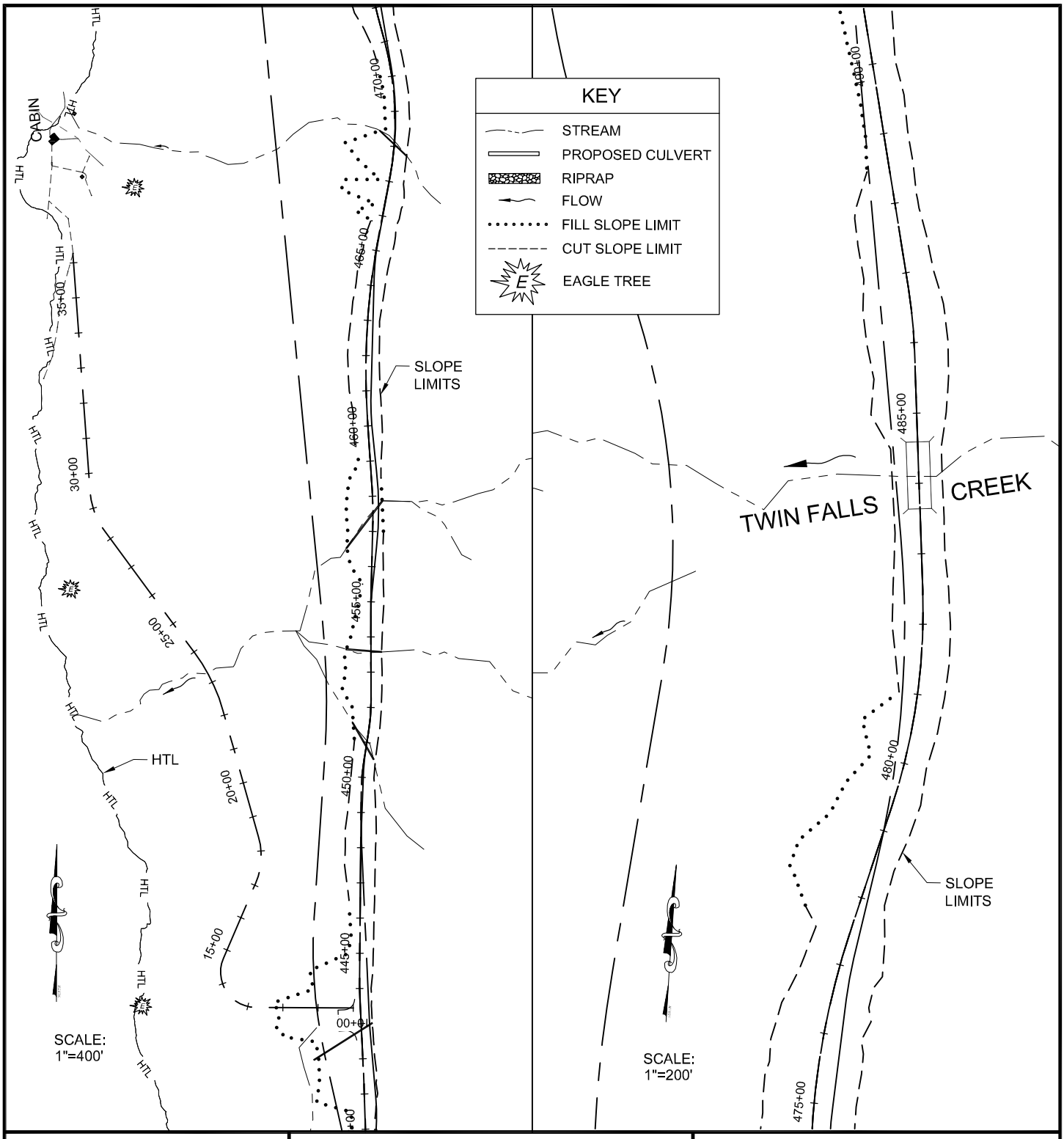

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 36 S., R. 63 E.,
SECTIONS 4, 5, 8 & 9, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 44 OF 93

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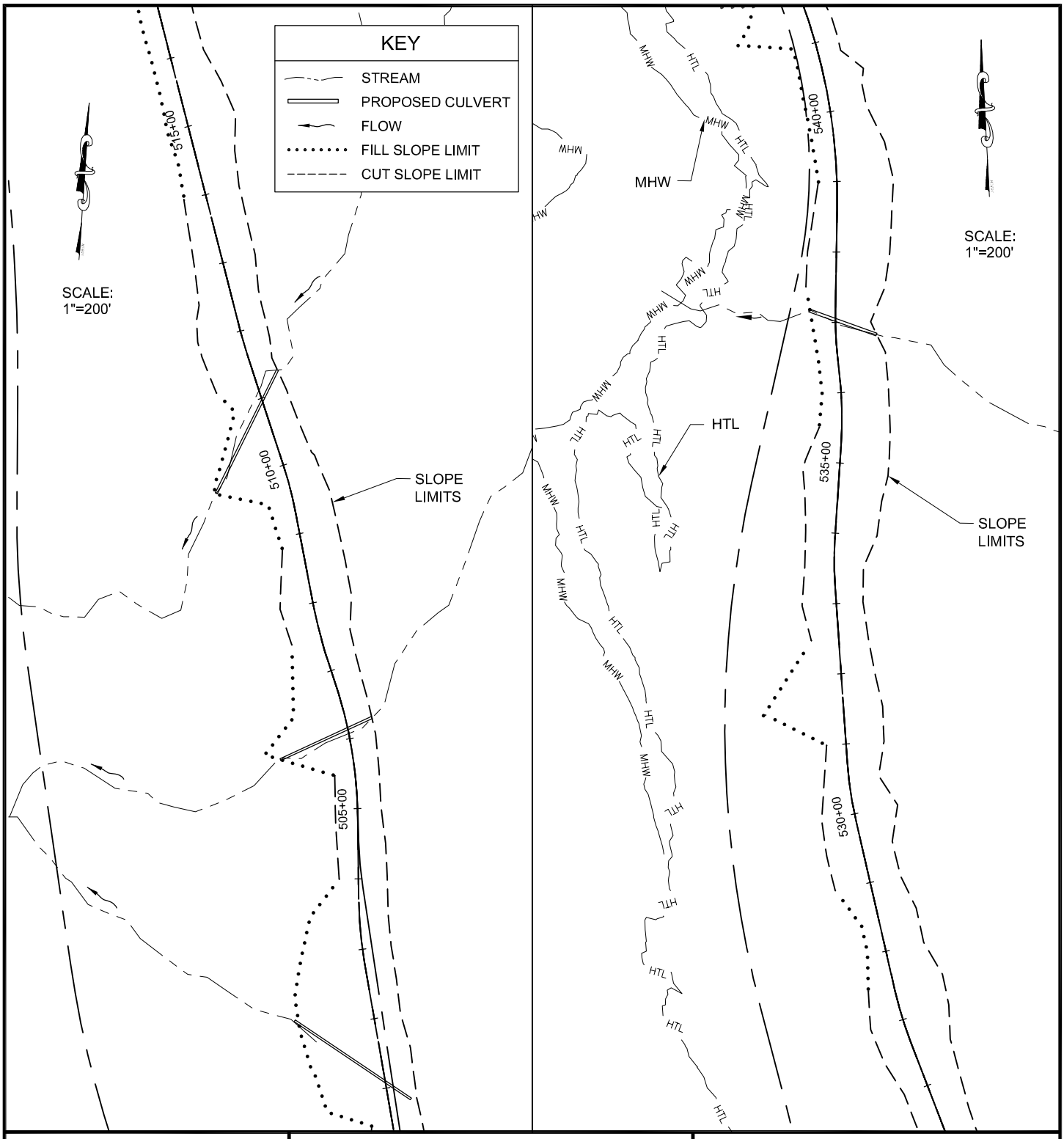

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 63 E., SECT. 32, C.R.M.
T. 36 S., R. 63 E., SECT. 5, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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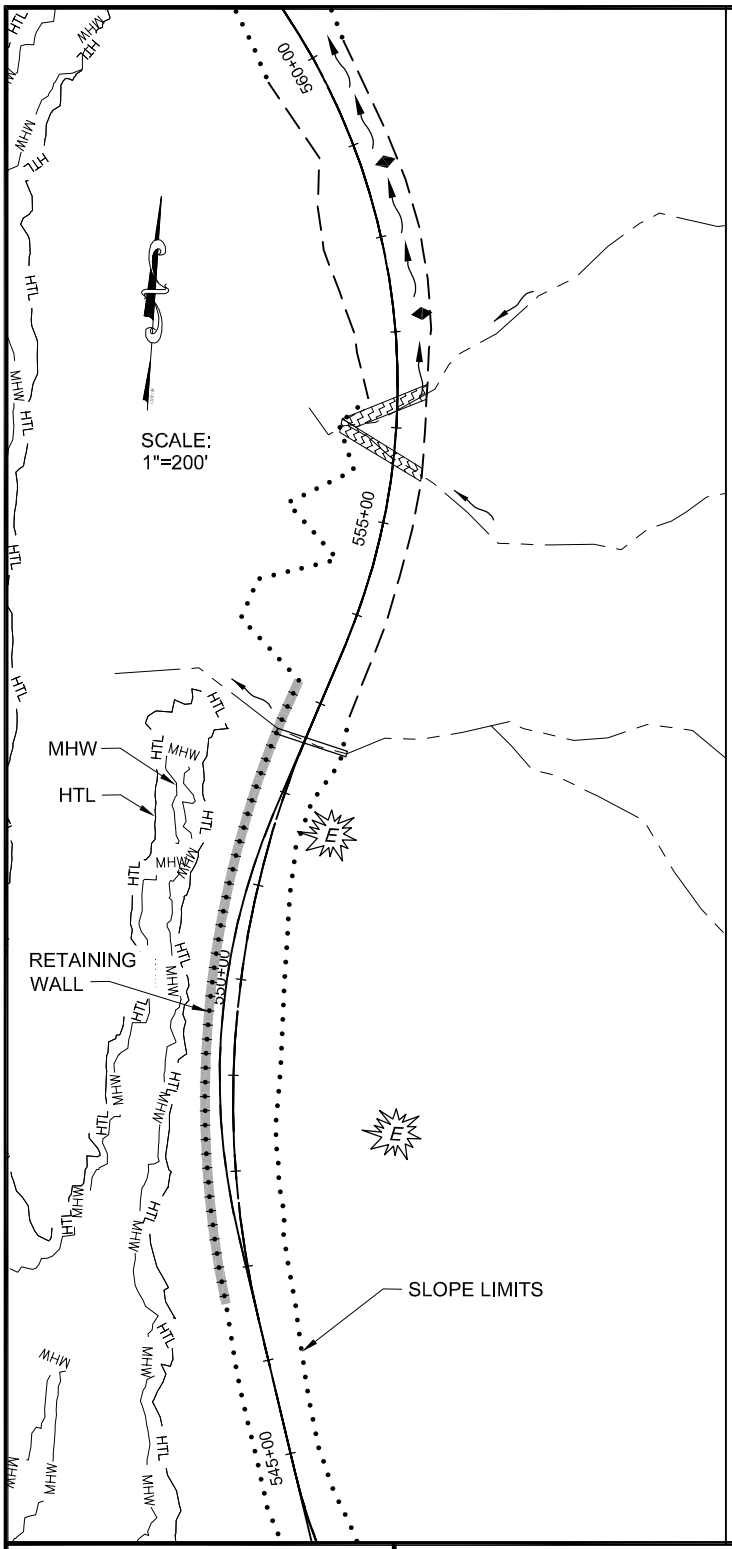

KEY

- STREAM
- PROPOSED CULVERT
- STREAM SEGMENT REMOVED BY THRU-CUT EXCAVATION
- RIPRAP
- FLOW
- FILL SLOPE LIMIT
- CUT SLOPE LIMIT
- EAGLE TREE
- DITCH BLOCK

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ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 63 E., SECT. 32, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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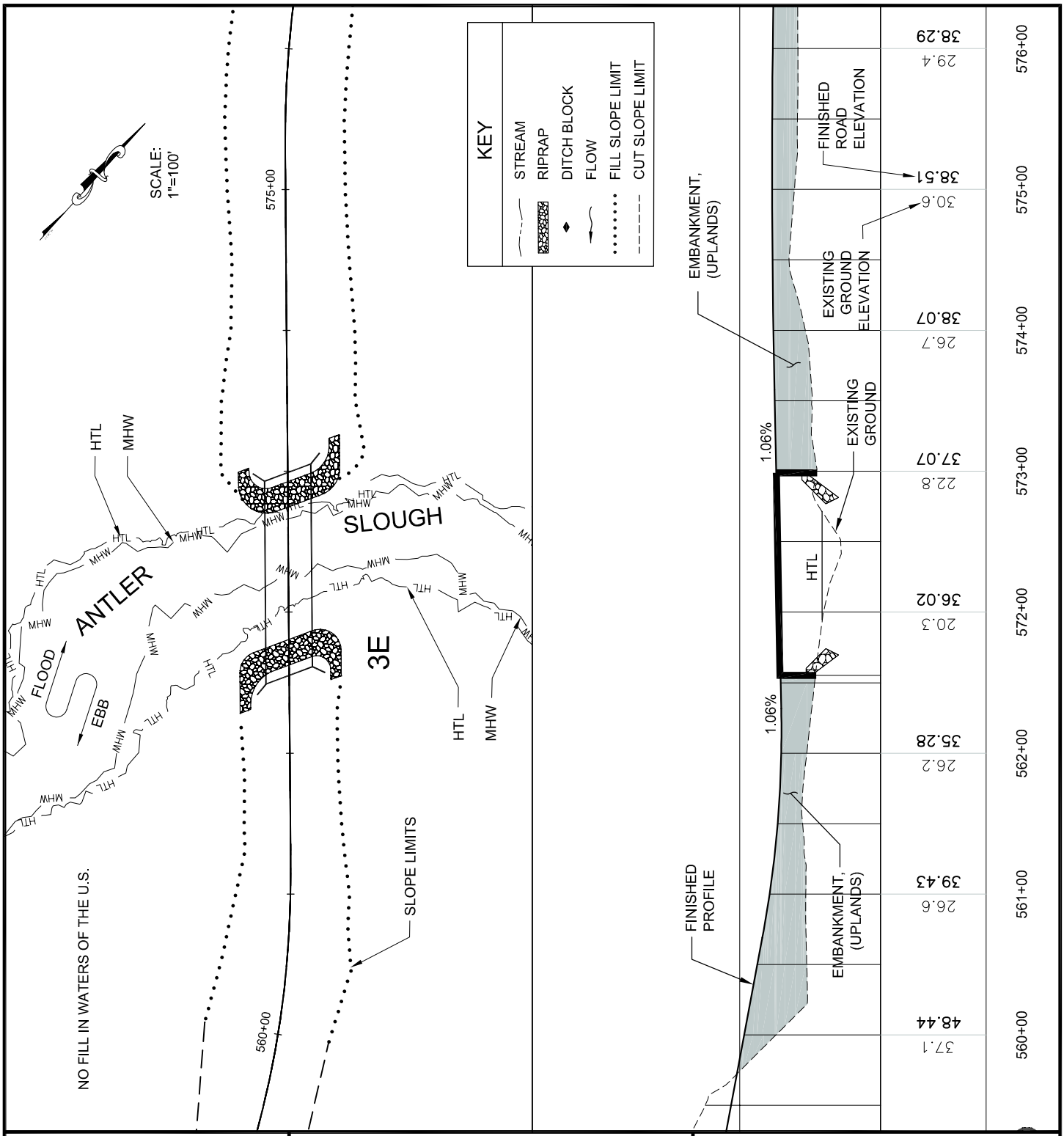

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Antler Slough Bridge
Bridge No. 3E

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 63 E., SECT. 32, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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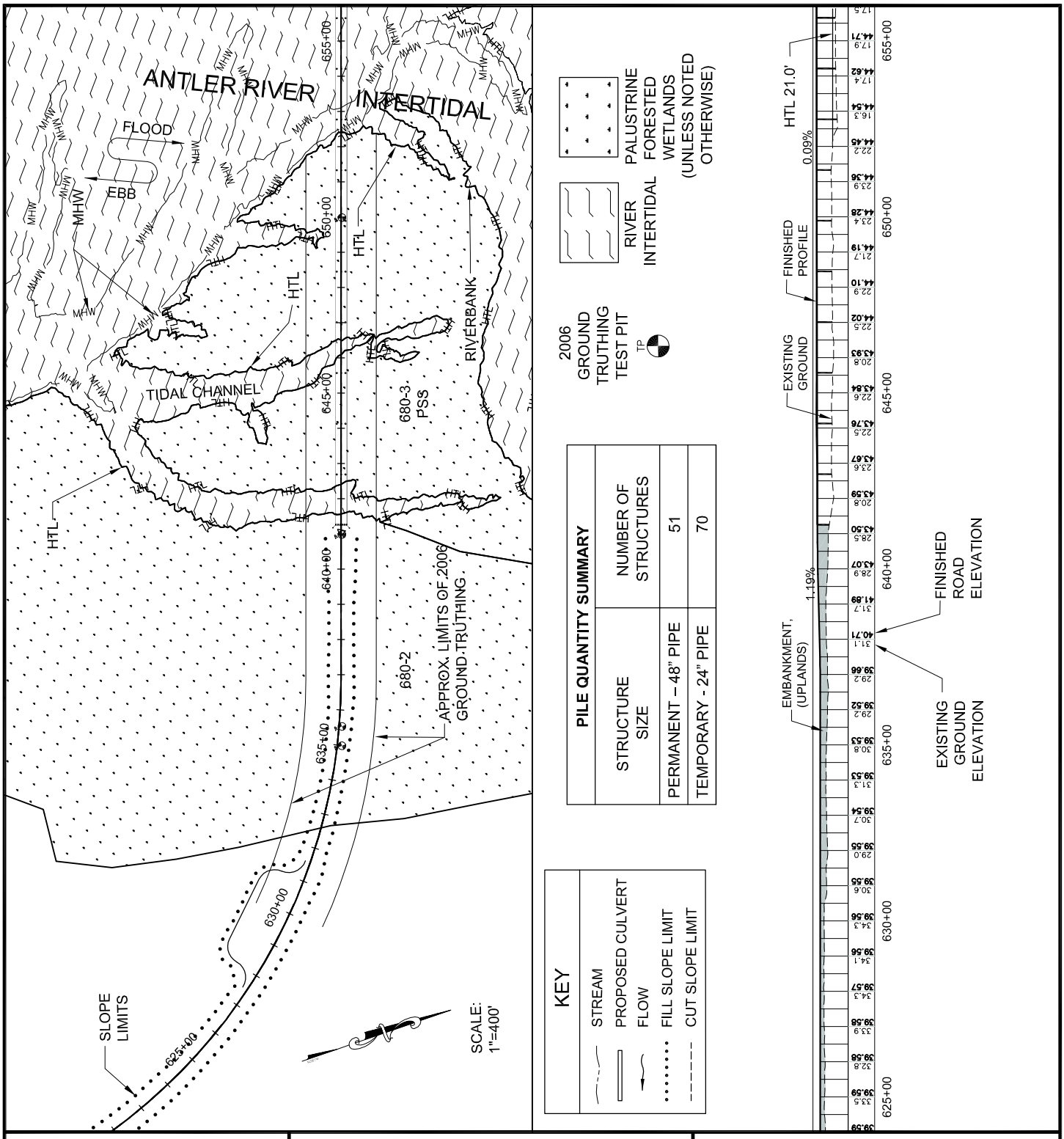

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas Antler River Bridge Bridge No. 4Ea

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 63 E., SECT. 29, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 48 OF 93

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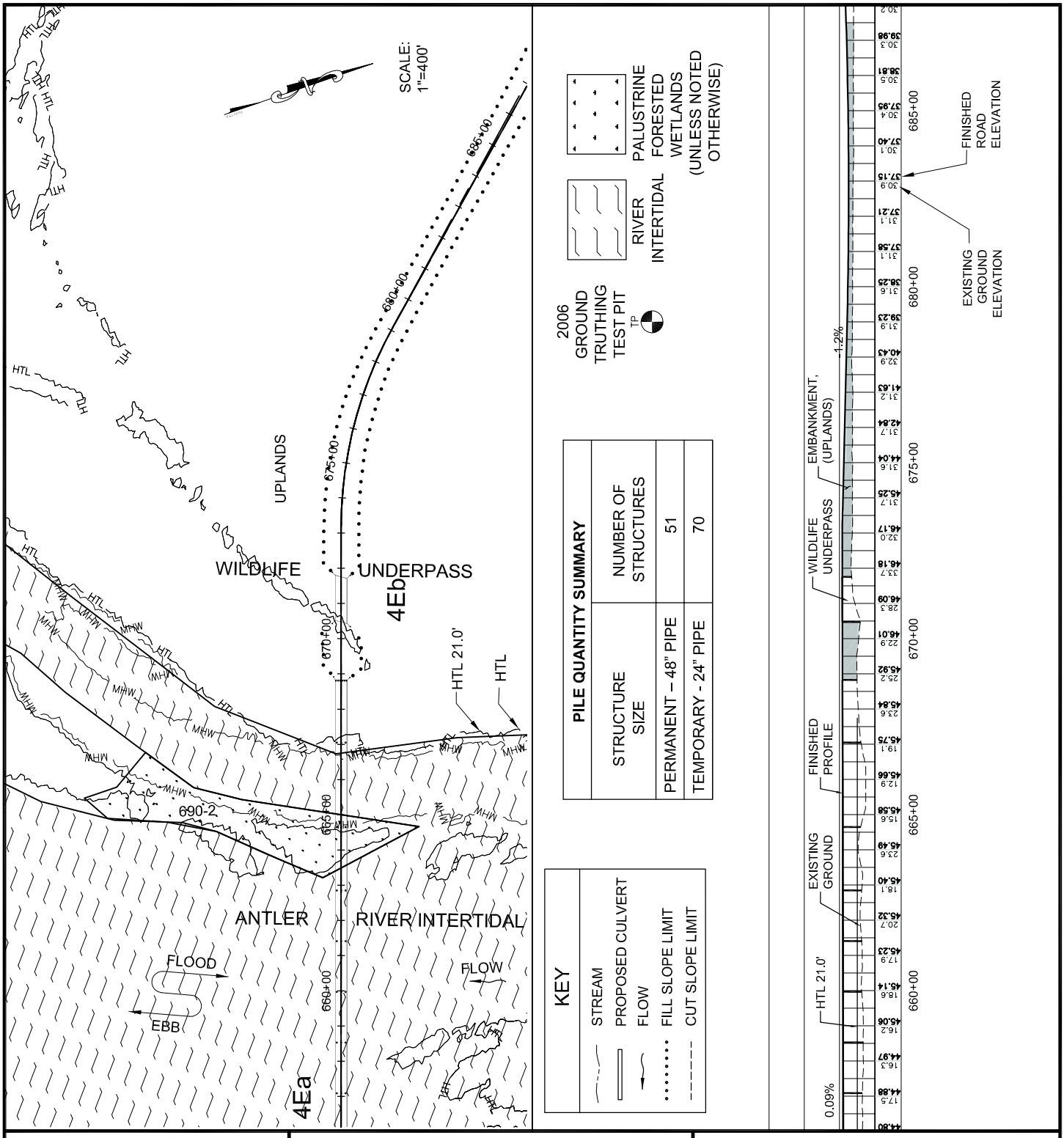

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas Antler River Bridge Bridge No. 4Ea

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 63 E., SECT. 29, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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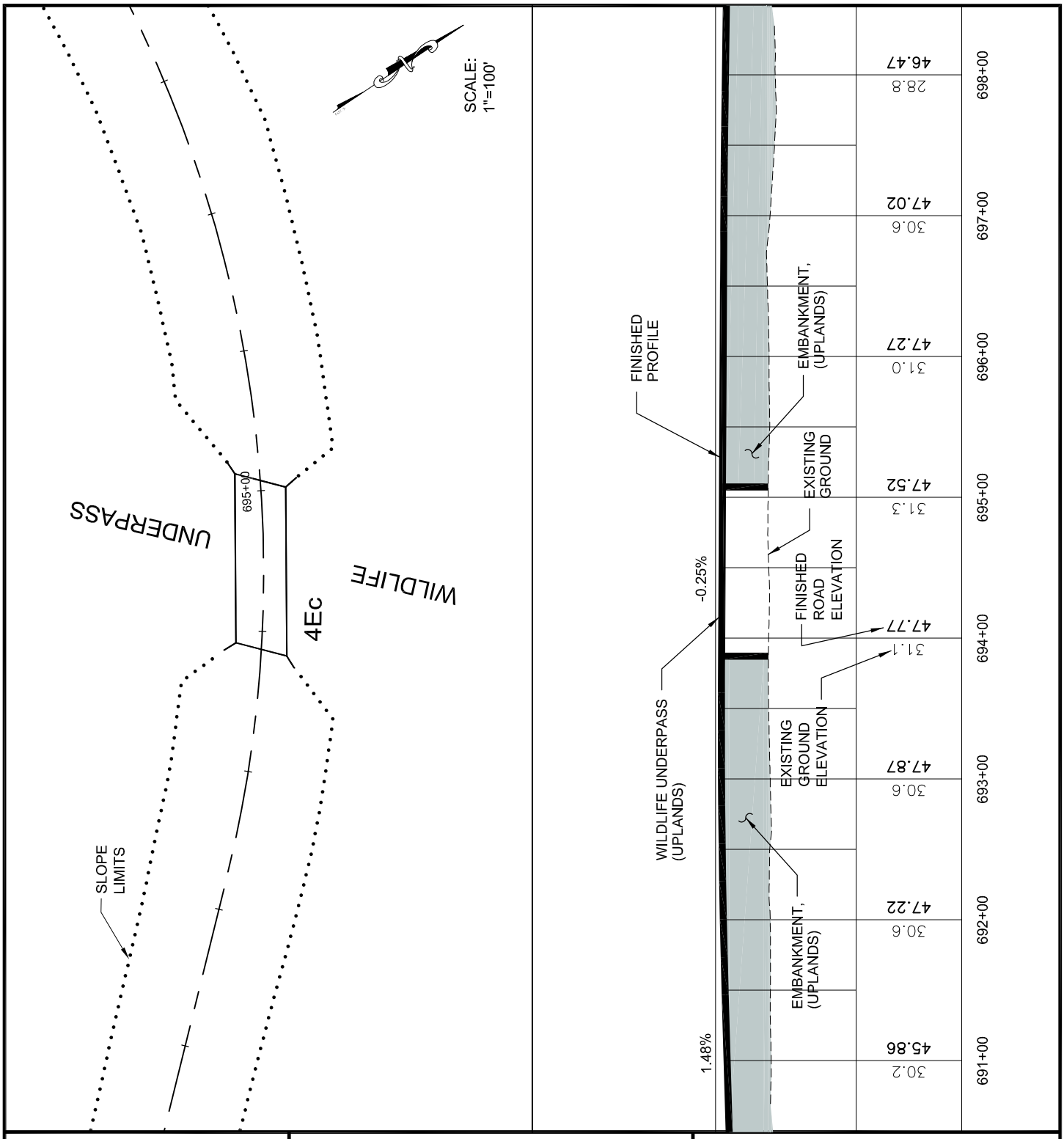

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Wildlife Underpass Bridge
Bridge No. 4Ec

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 63 E., SECT. 19, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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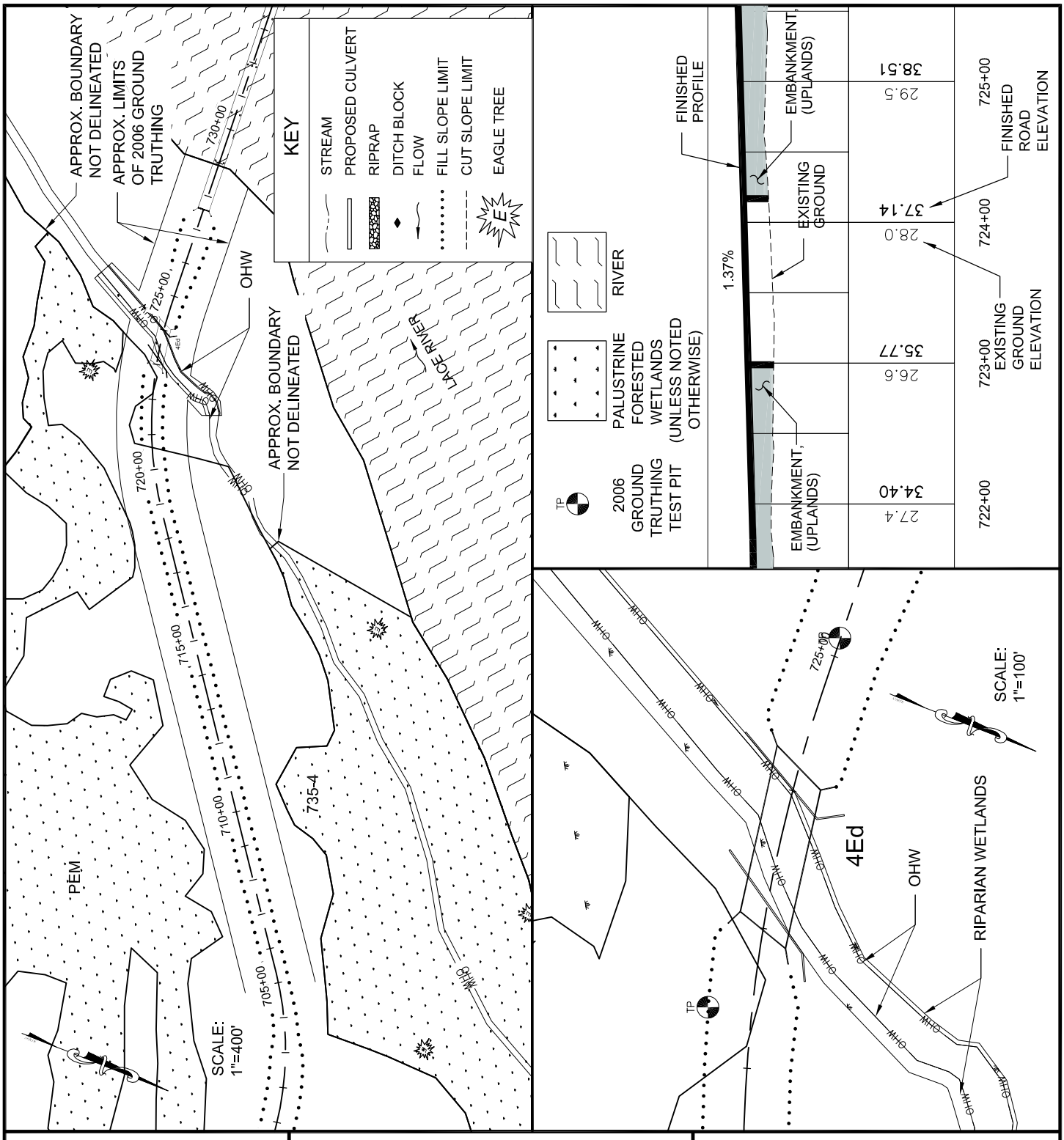

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E., SECT. 19, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 51 OF 93

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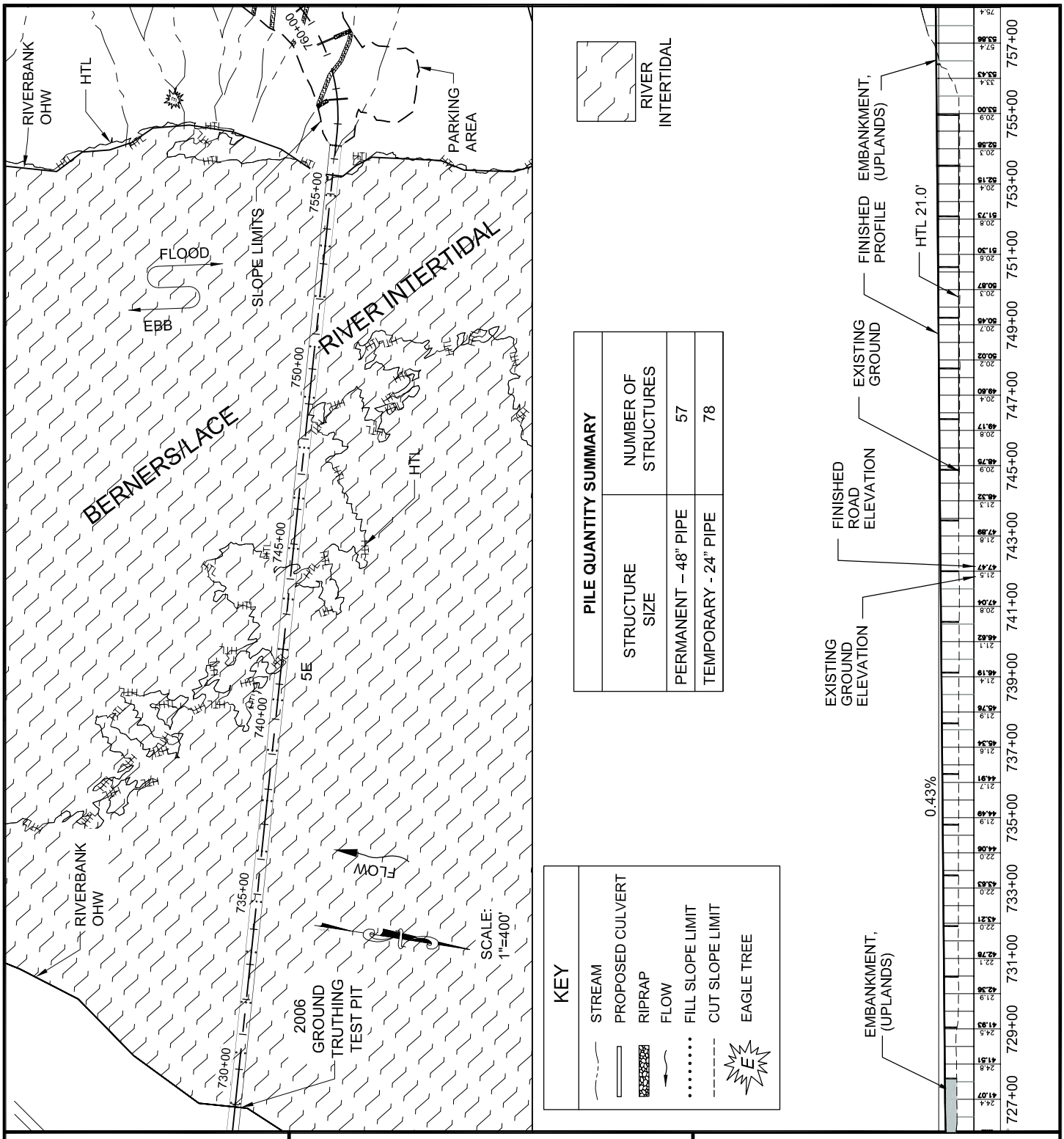

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Lace River Bridge
Bridge No. 5E

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E., SECT. 25, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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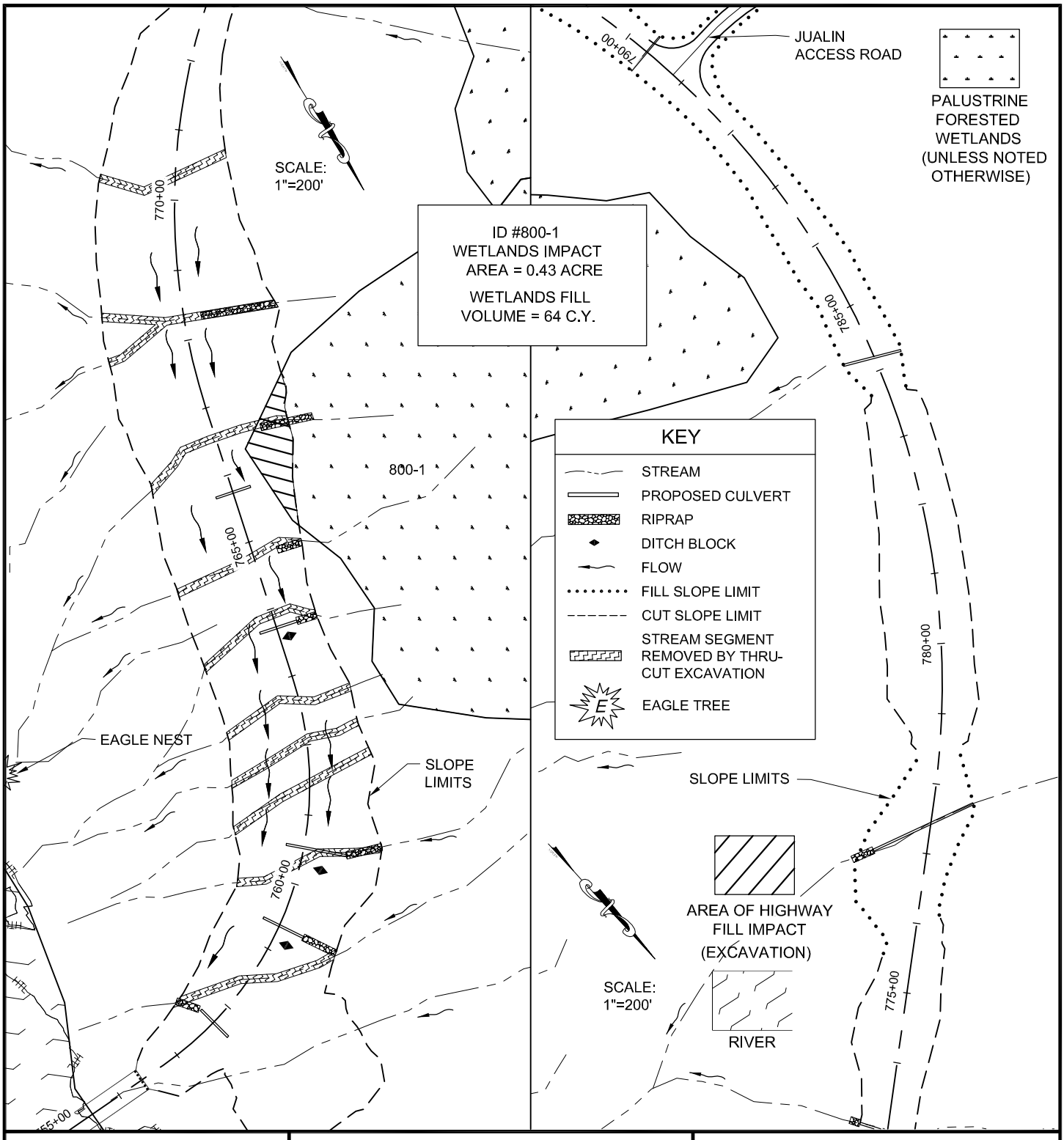

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 24 & 25, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 53 OF 93

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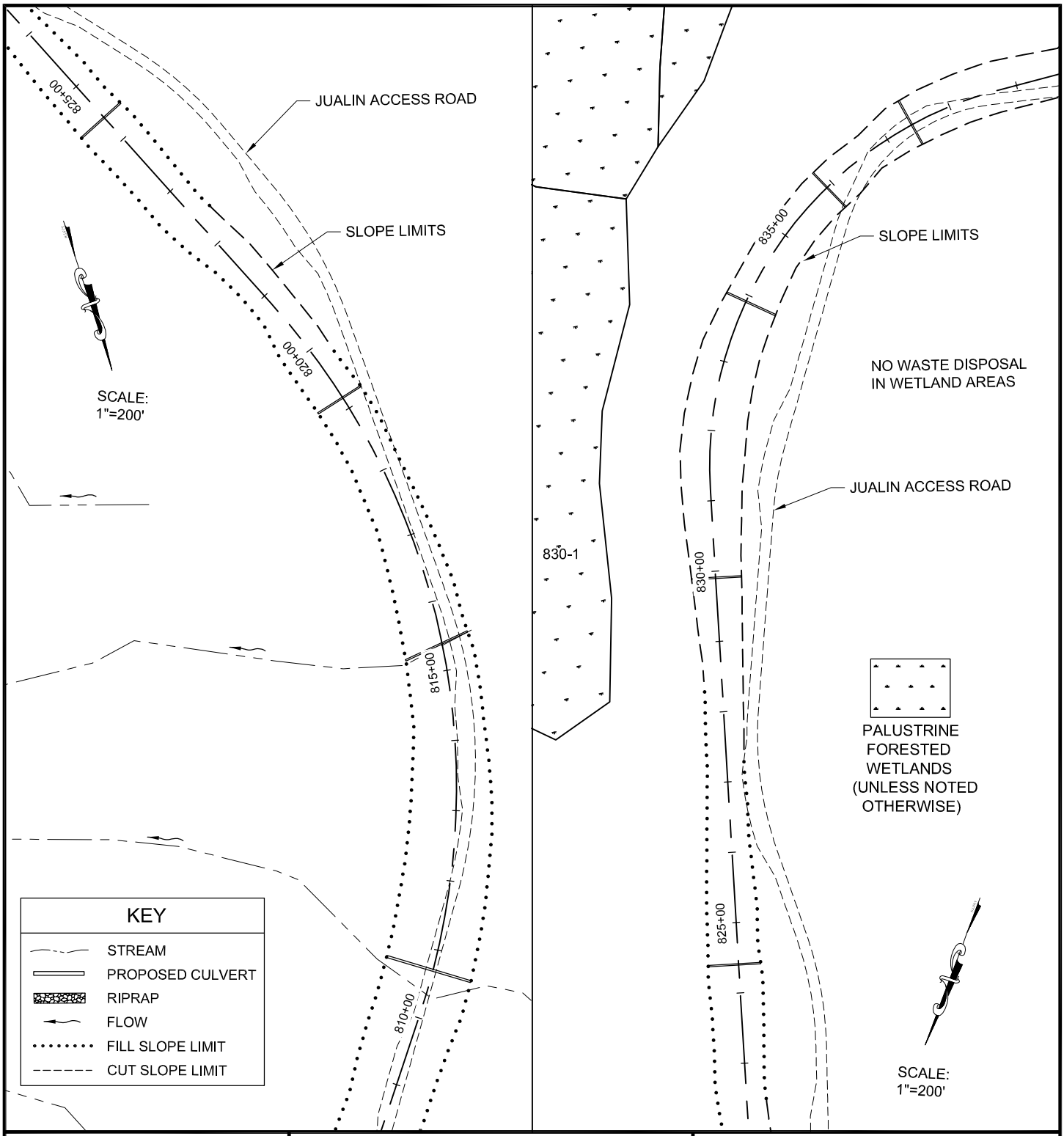

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 25 & 36, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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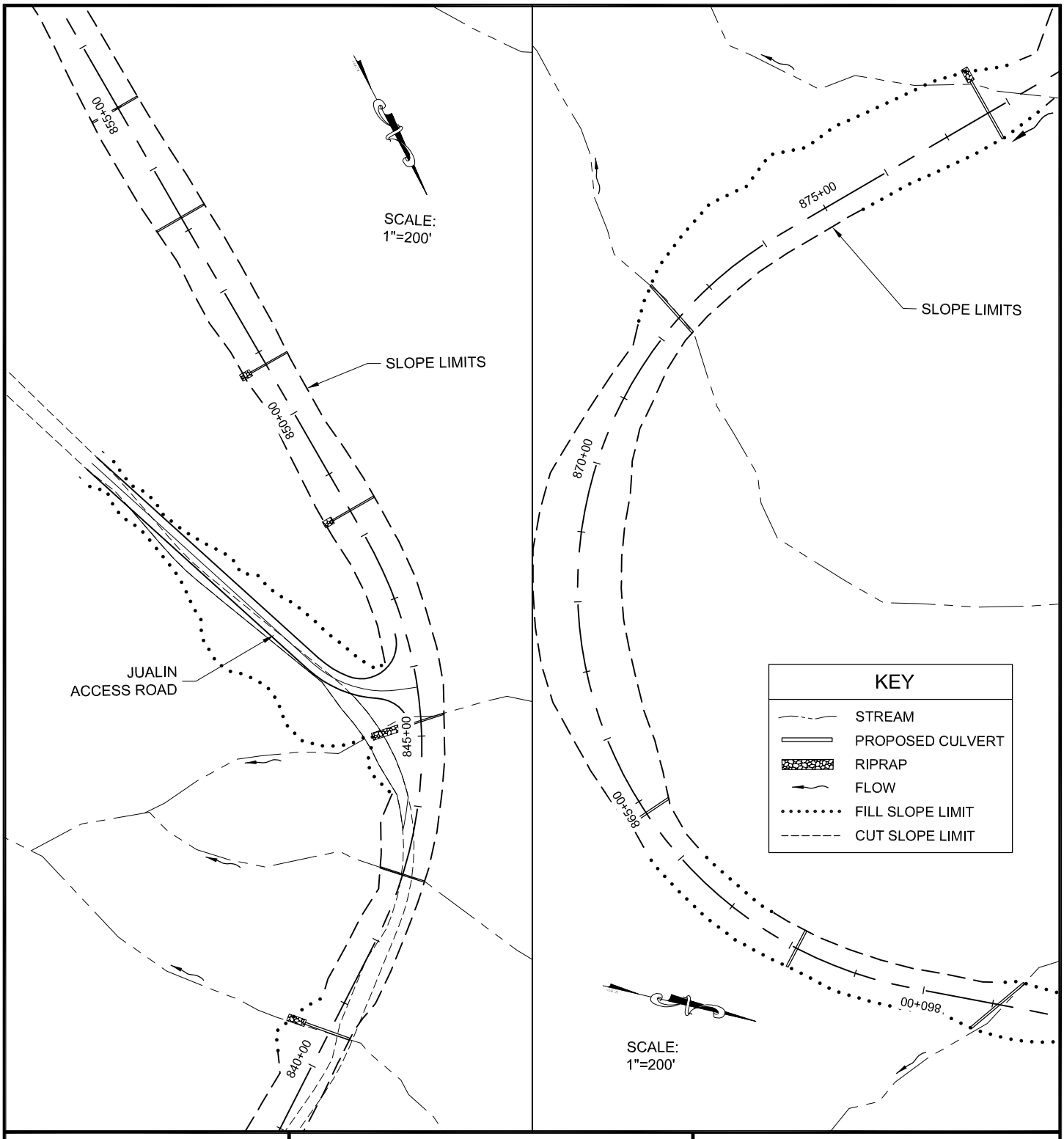

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 35 & 36, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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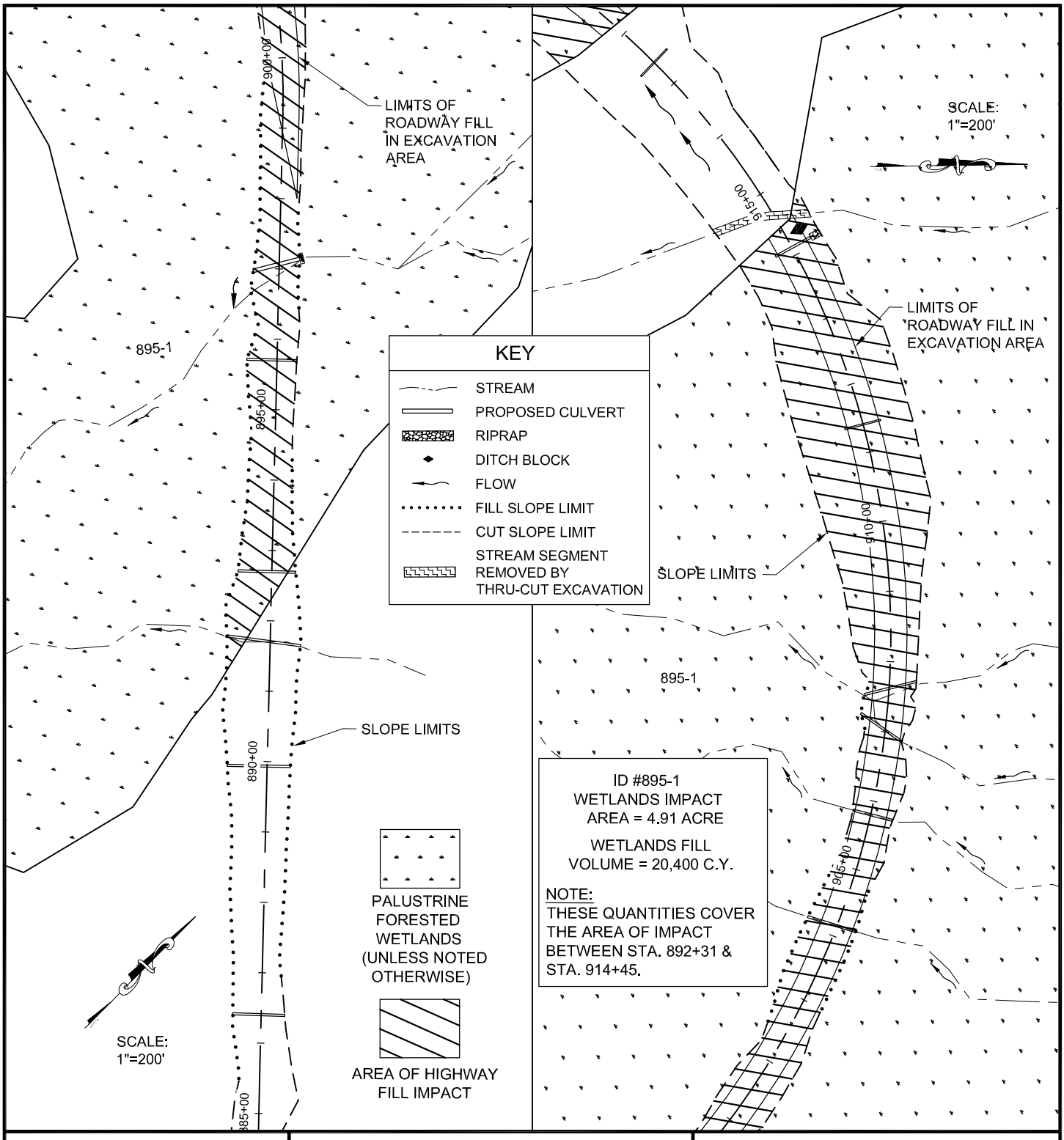

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E., SECT. 35, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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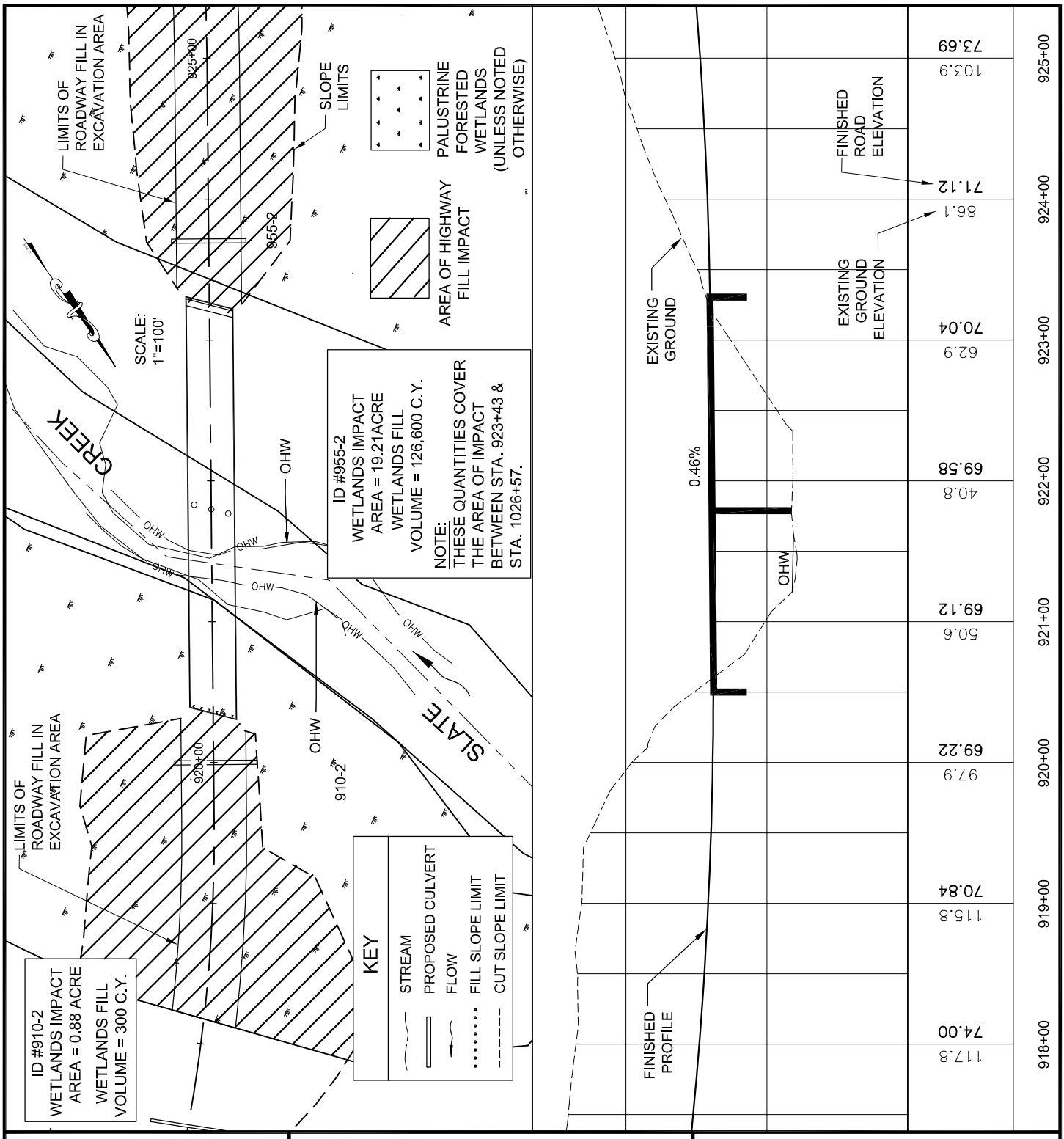

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Slate Ck. Bridge with Palustrine Wetlands Areas

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E., SECT. 35, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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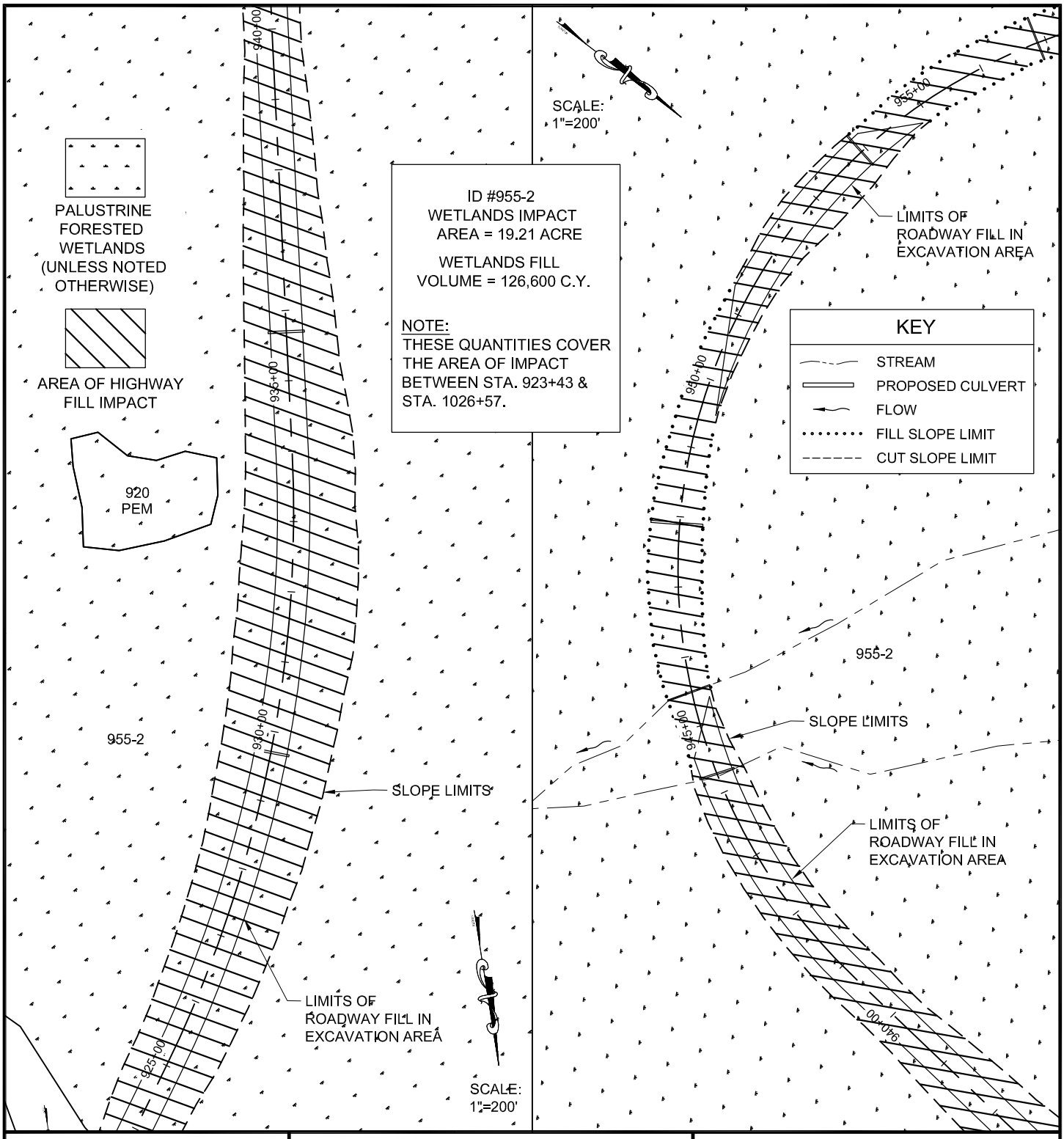

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 34 & 35, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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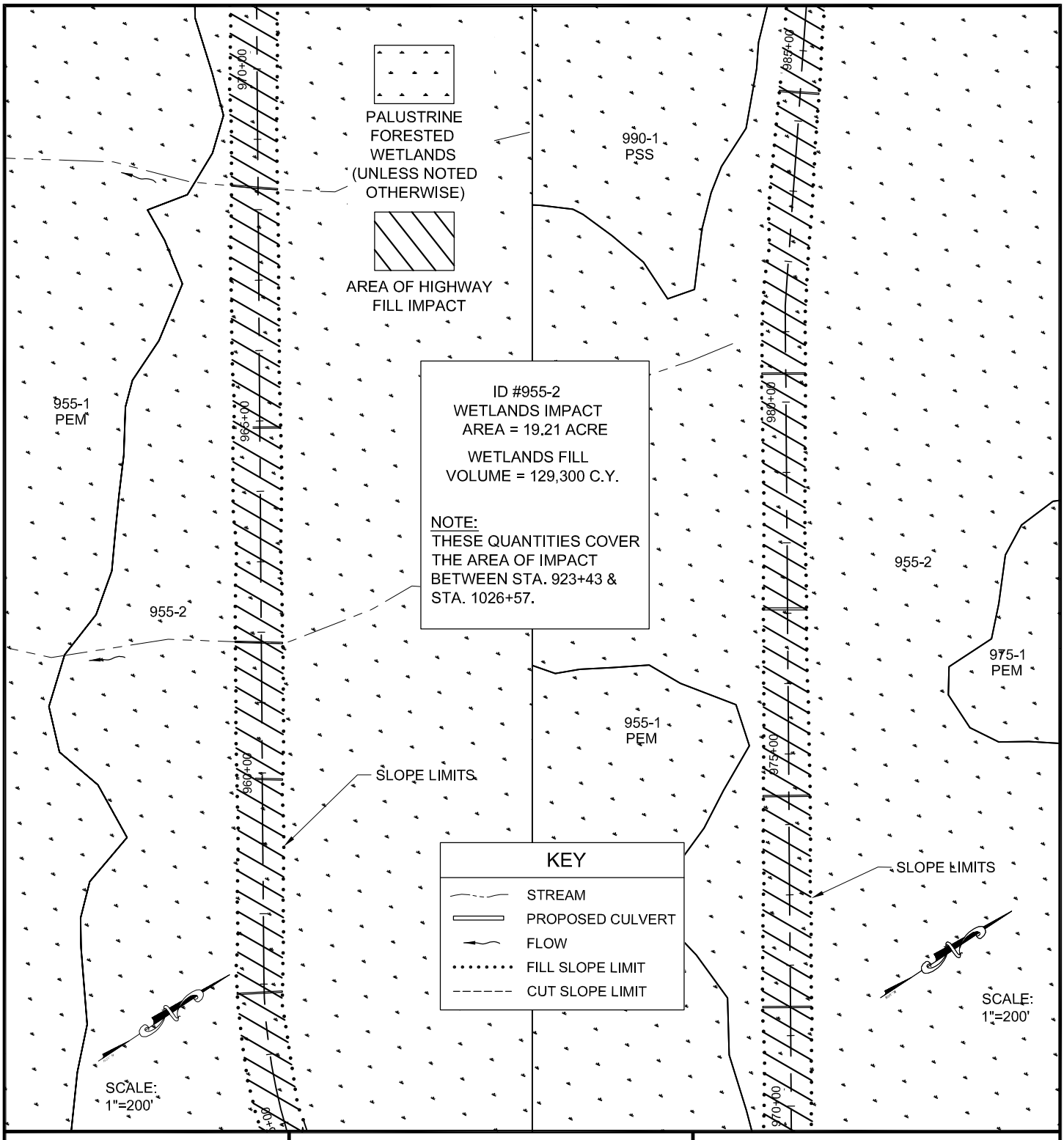

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E., SECT. 34, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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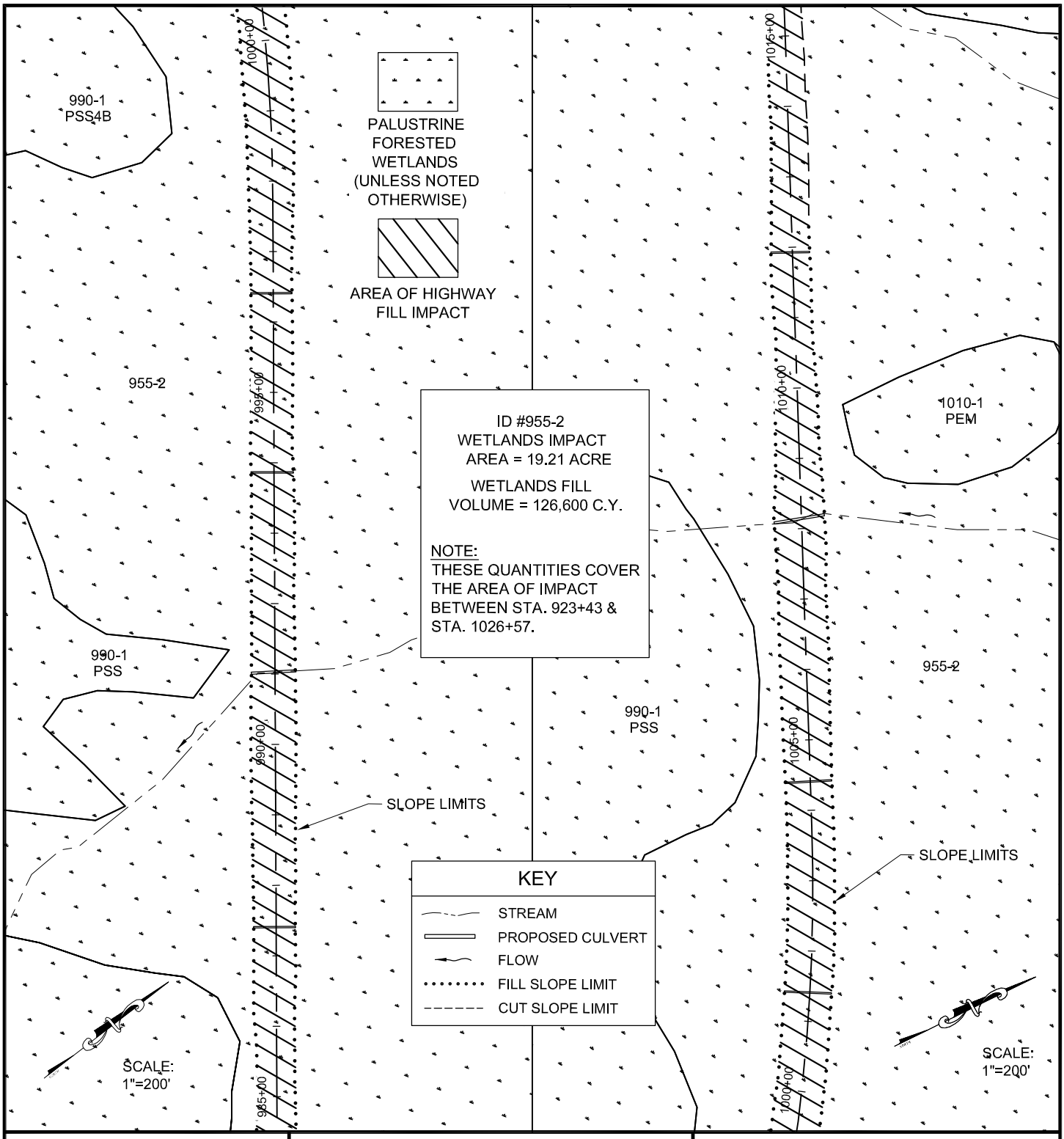

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 34 & 35, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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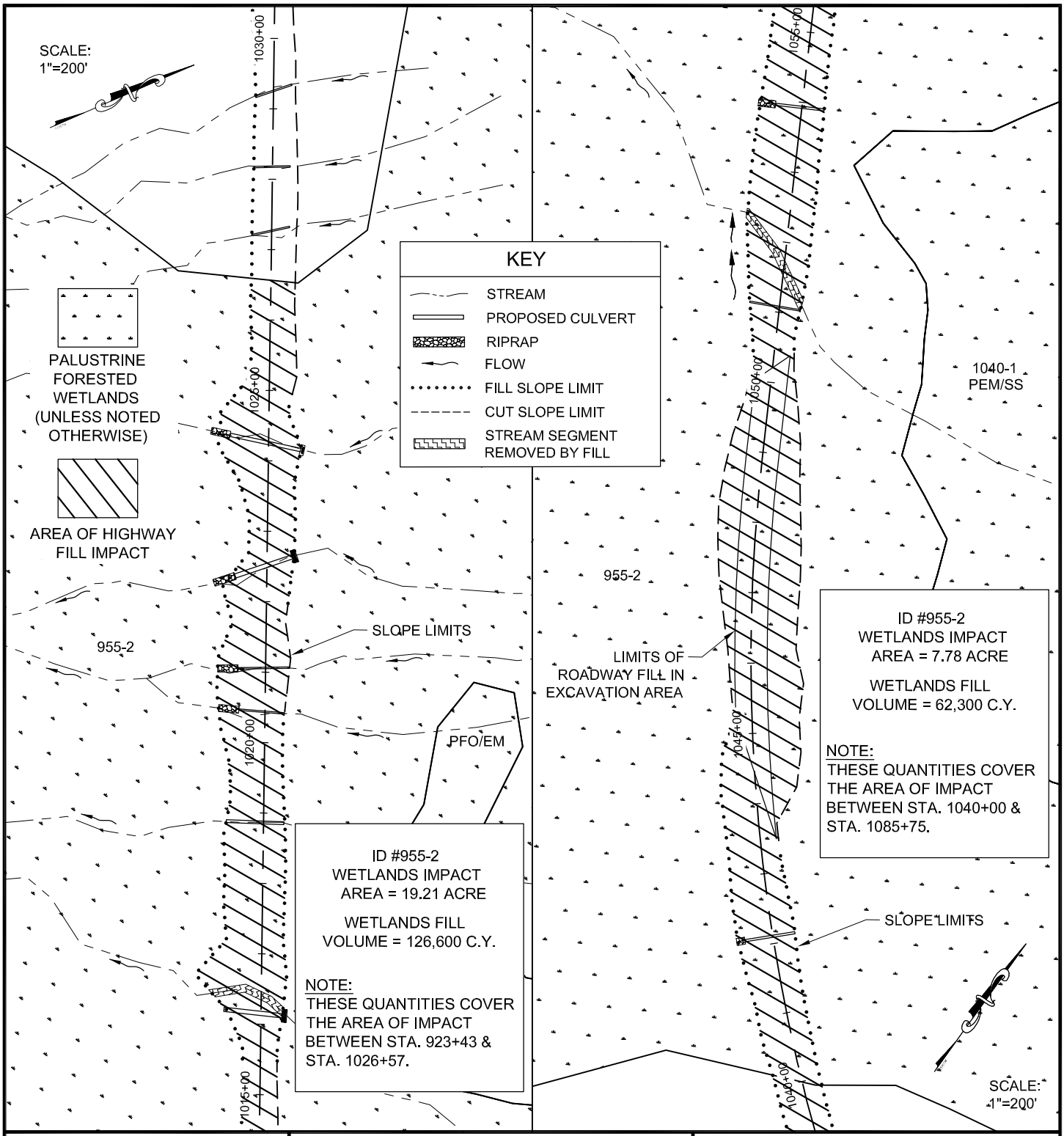

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 28 & 33, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 61 OF 93

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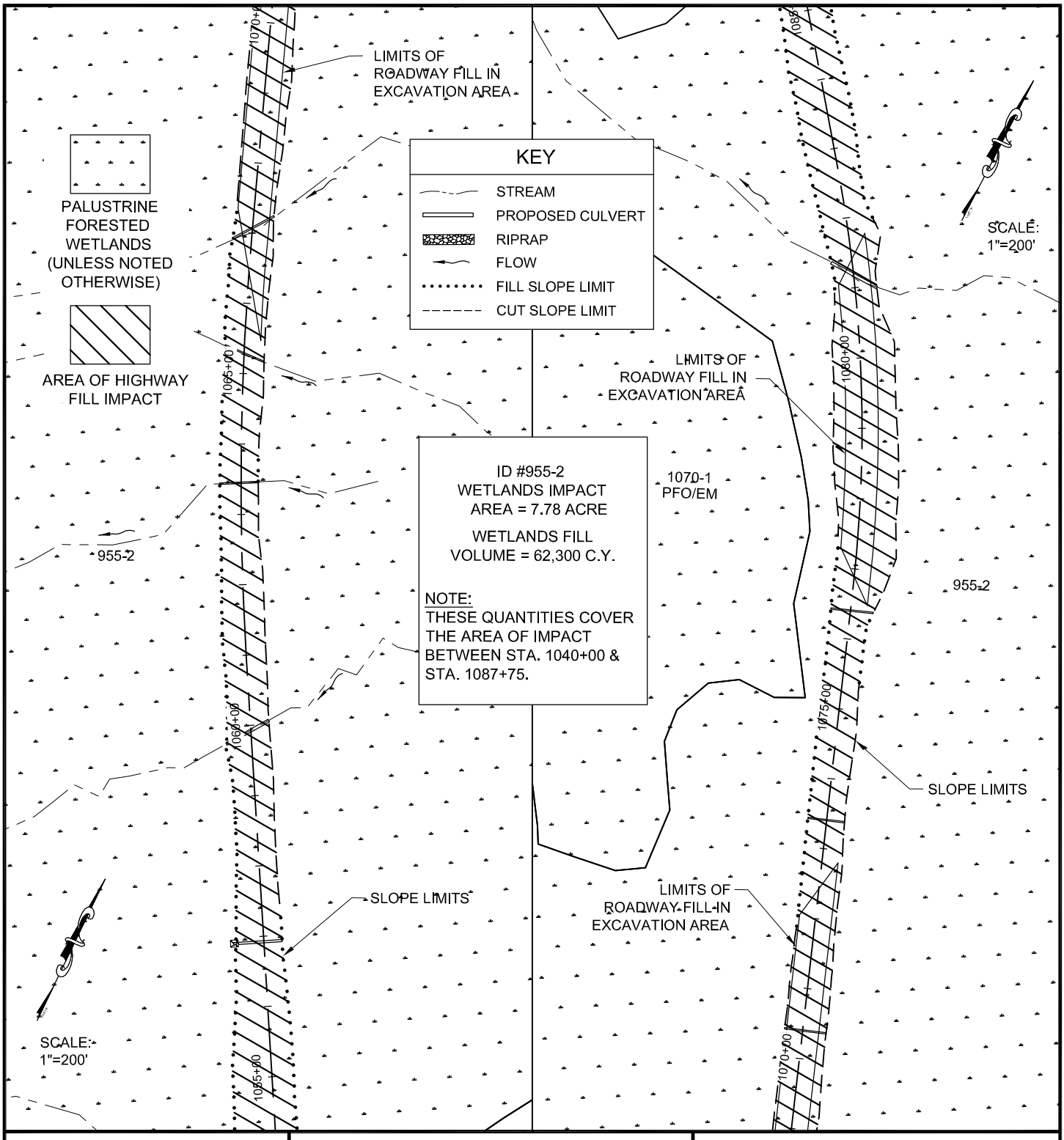

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E., SECT. 28, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 62 OF 93

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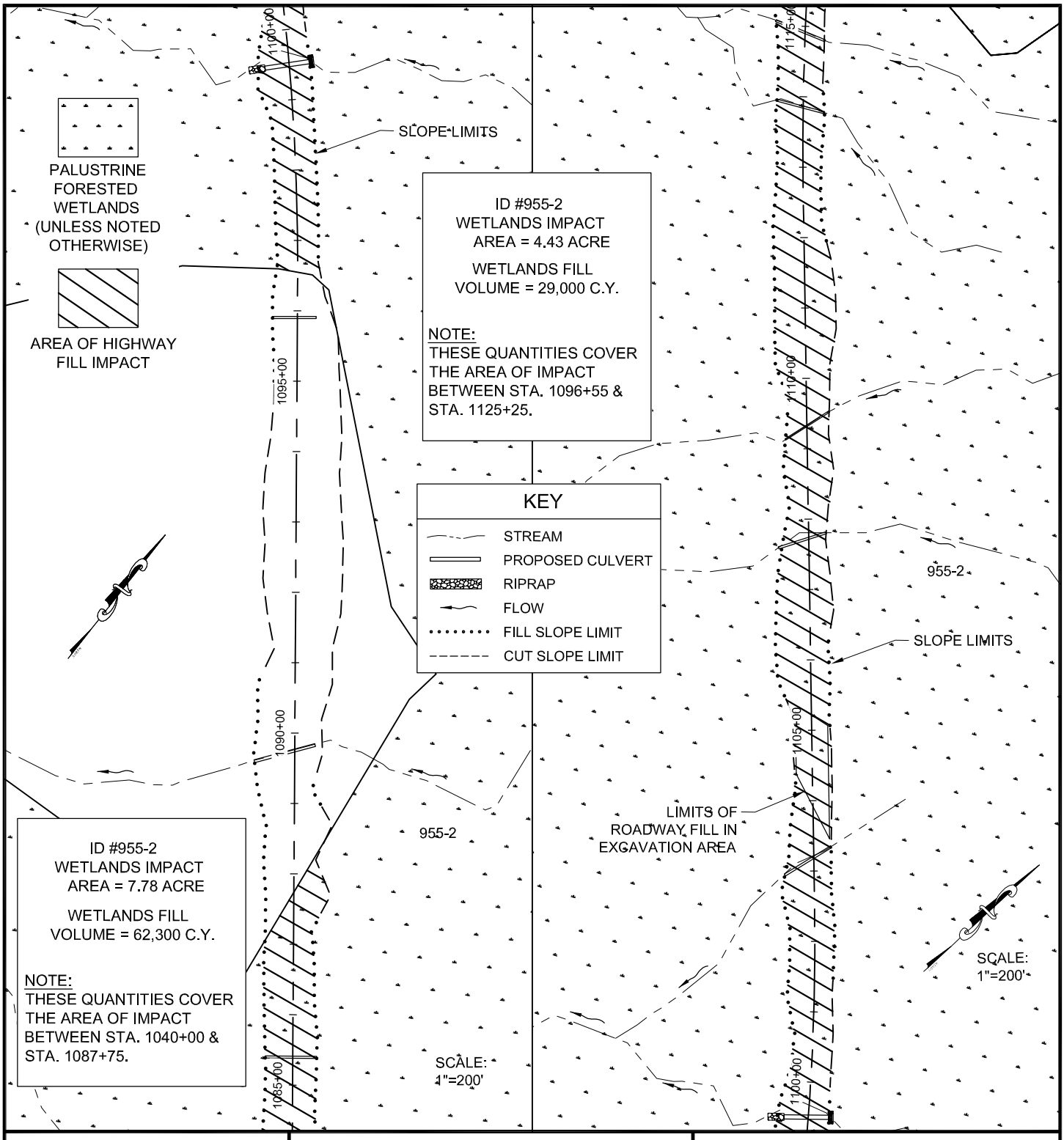

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 20, 28, & 29, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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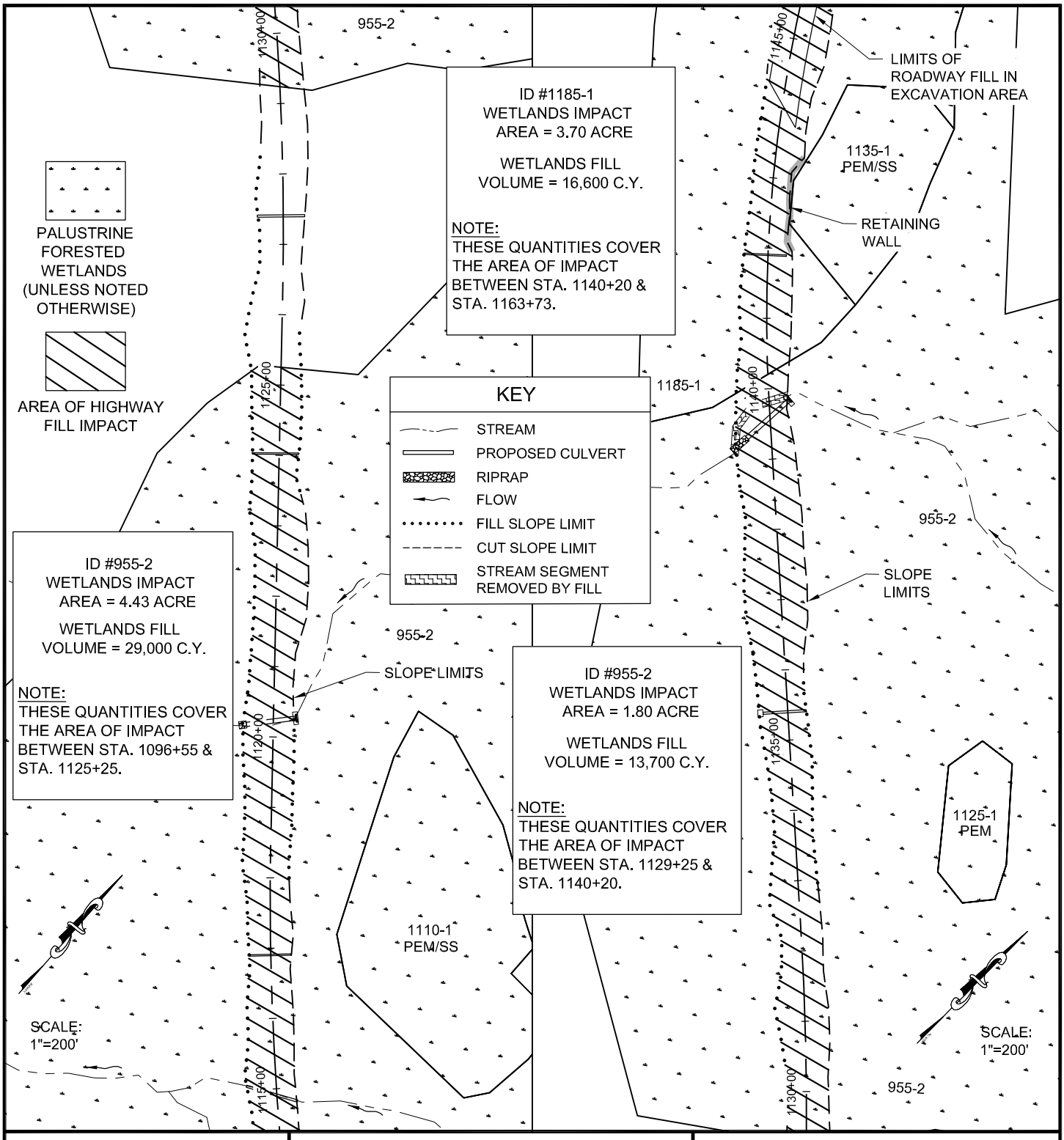

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E., SECT. 20, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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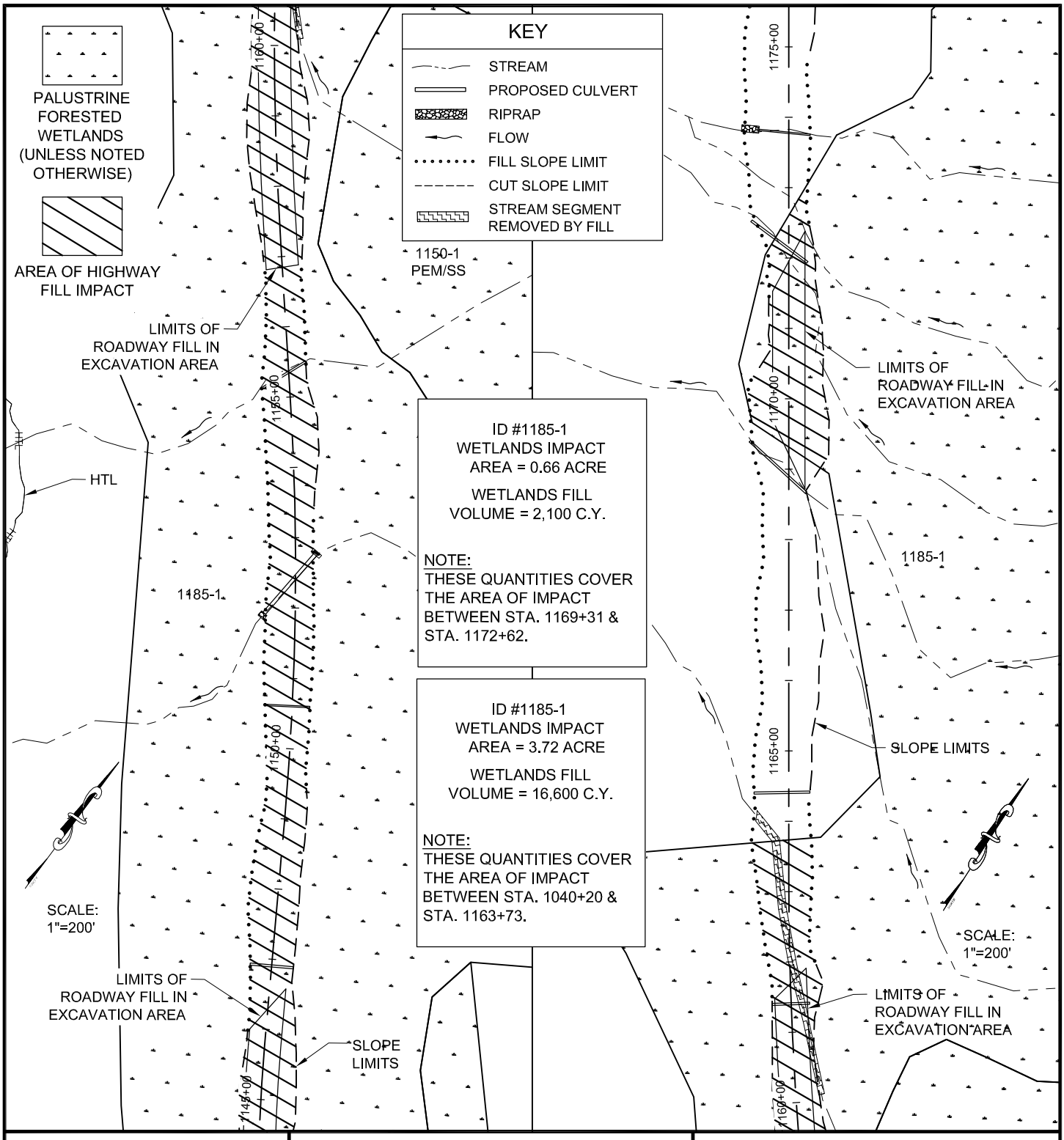

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 19 & 20, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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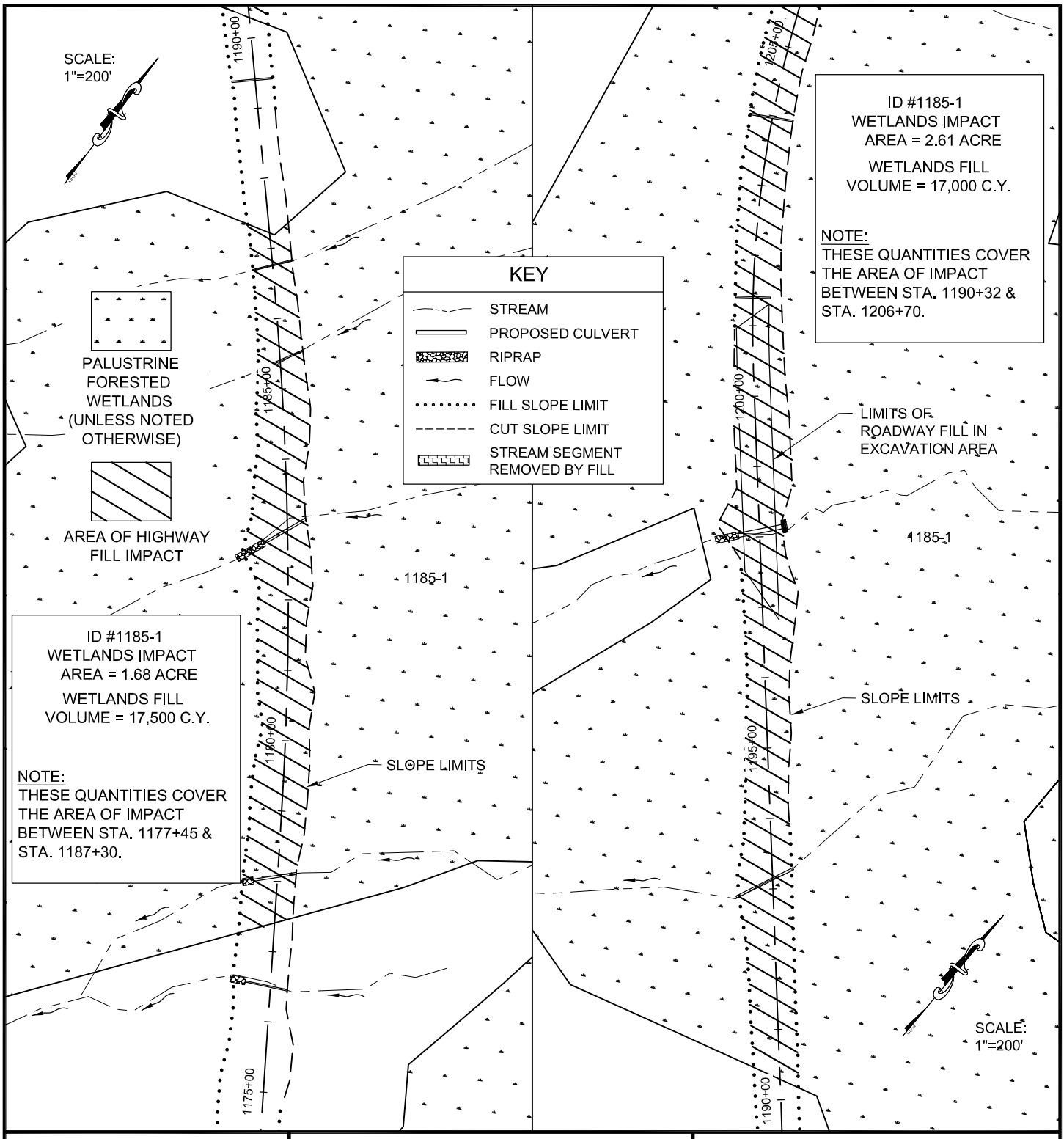

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 18, 19 & 20, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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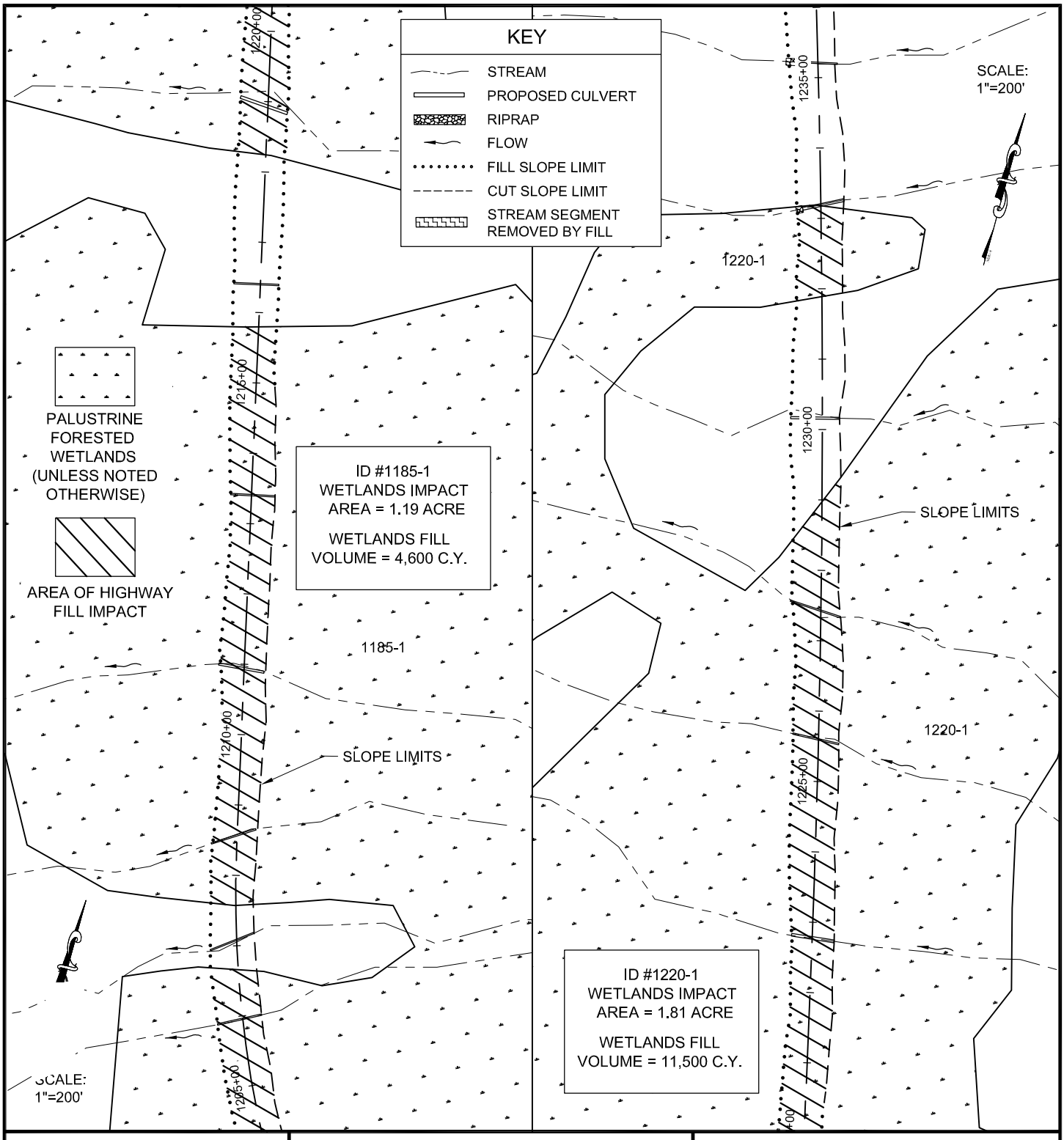

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S. R. 62 E., SECT. 18, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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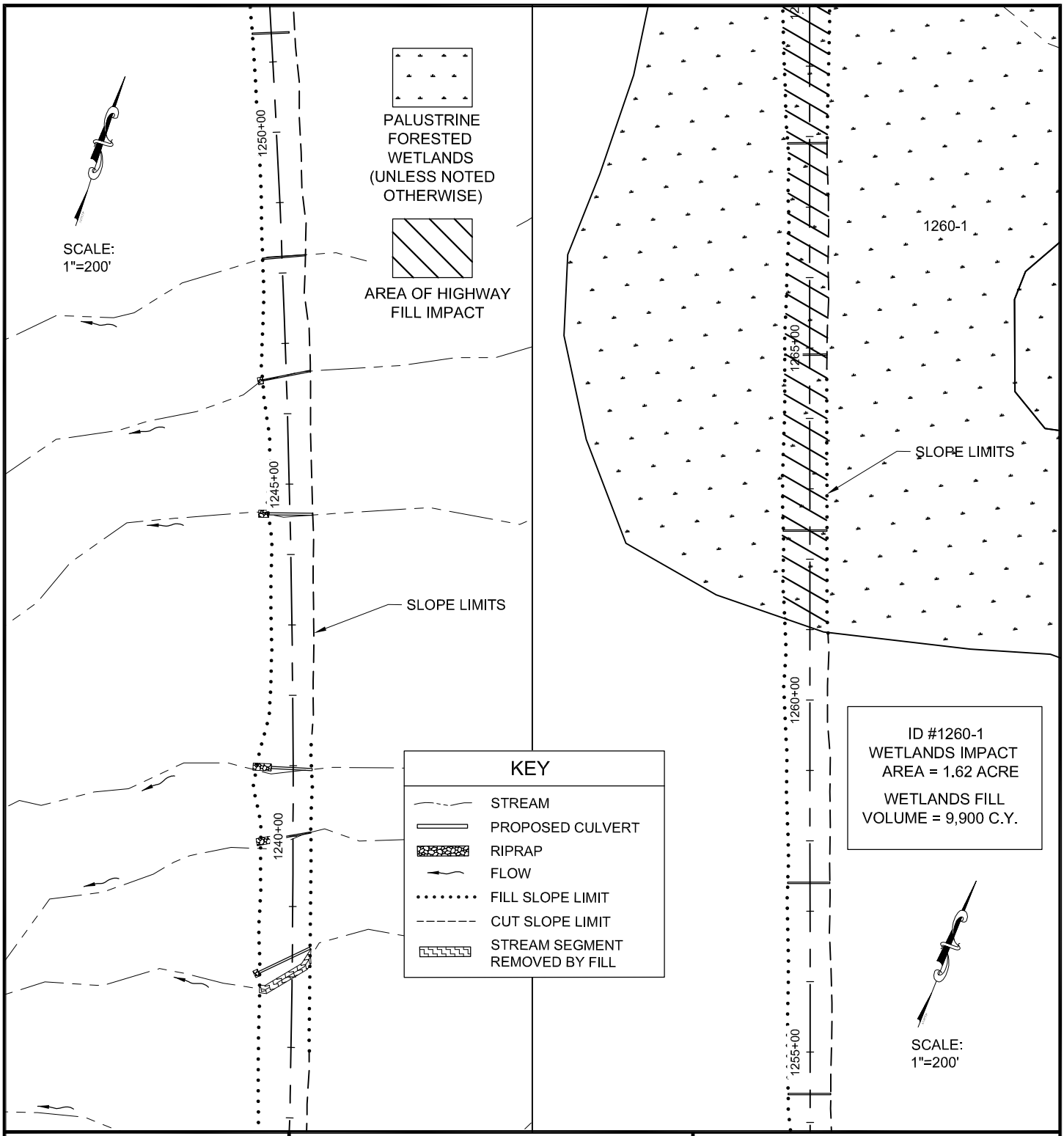

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 7 & 18, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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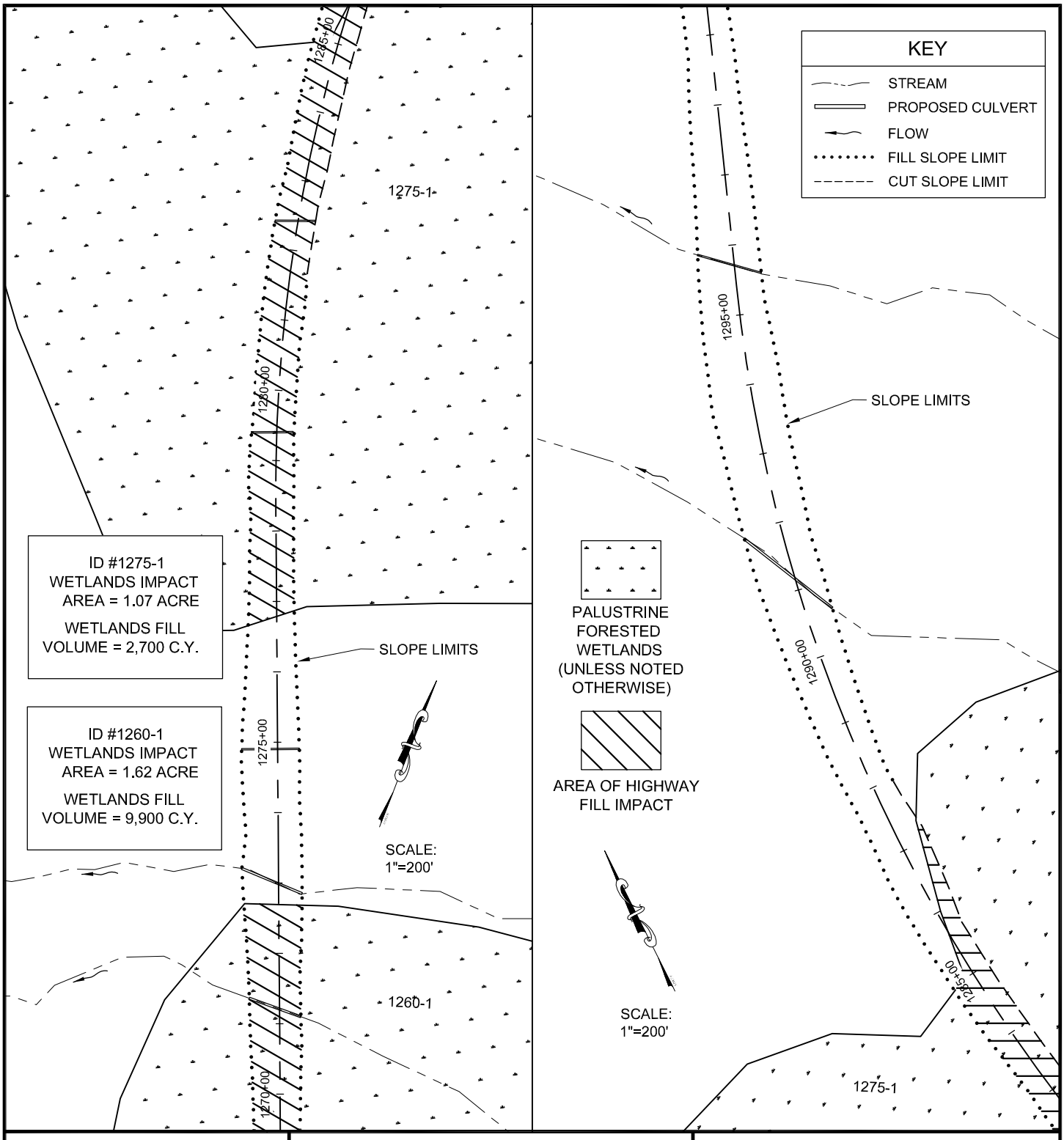

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E.,
SECTIONS 6 & 7, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 69 OF 93

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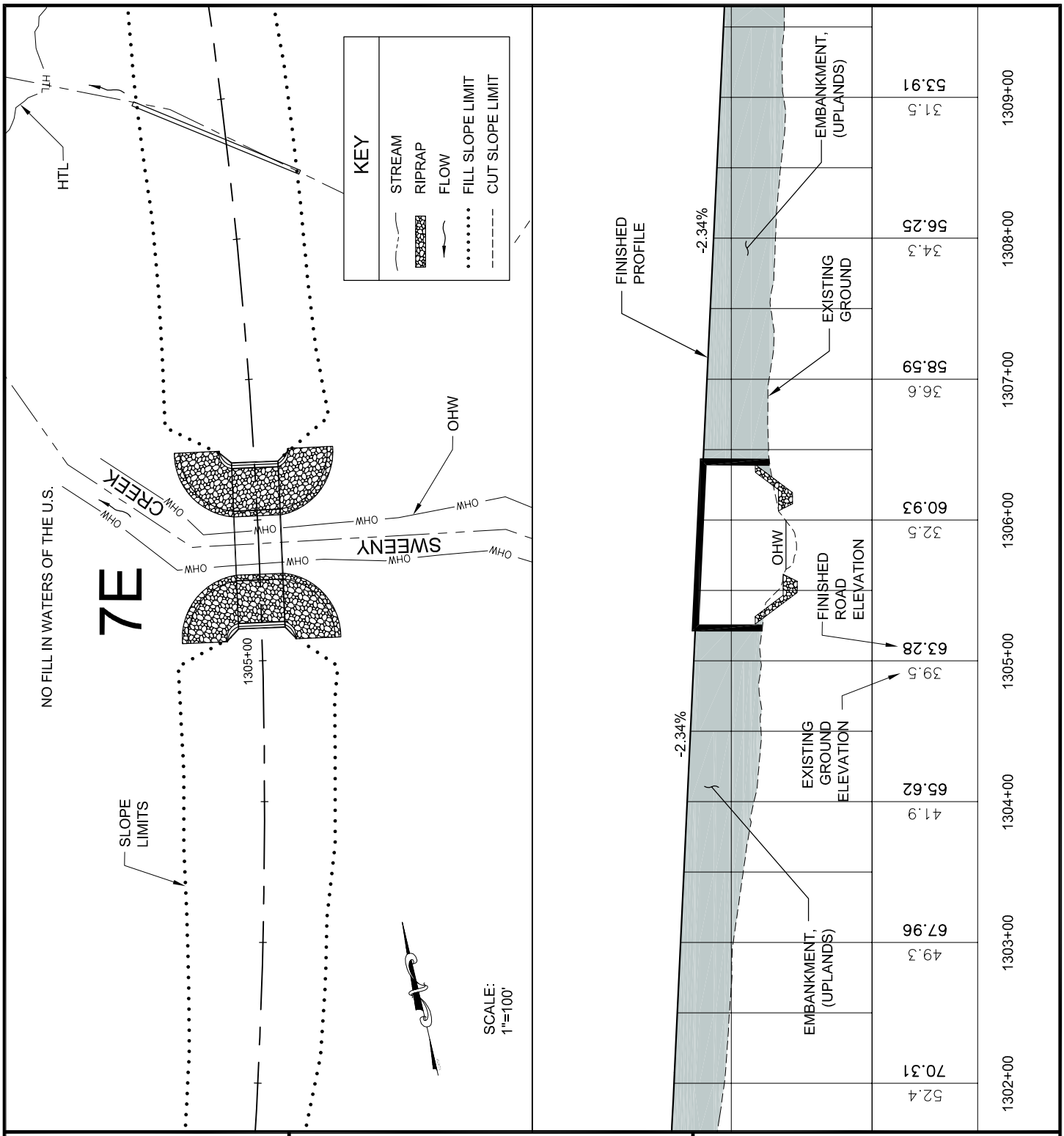

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Sweeny Creek Bridge
Bridge No. 7E

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E., SECT. 6, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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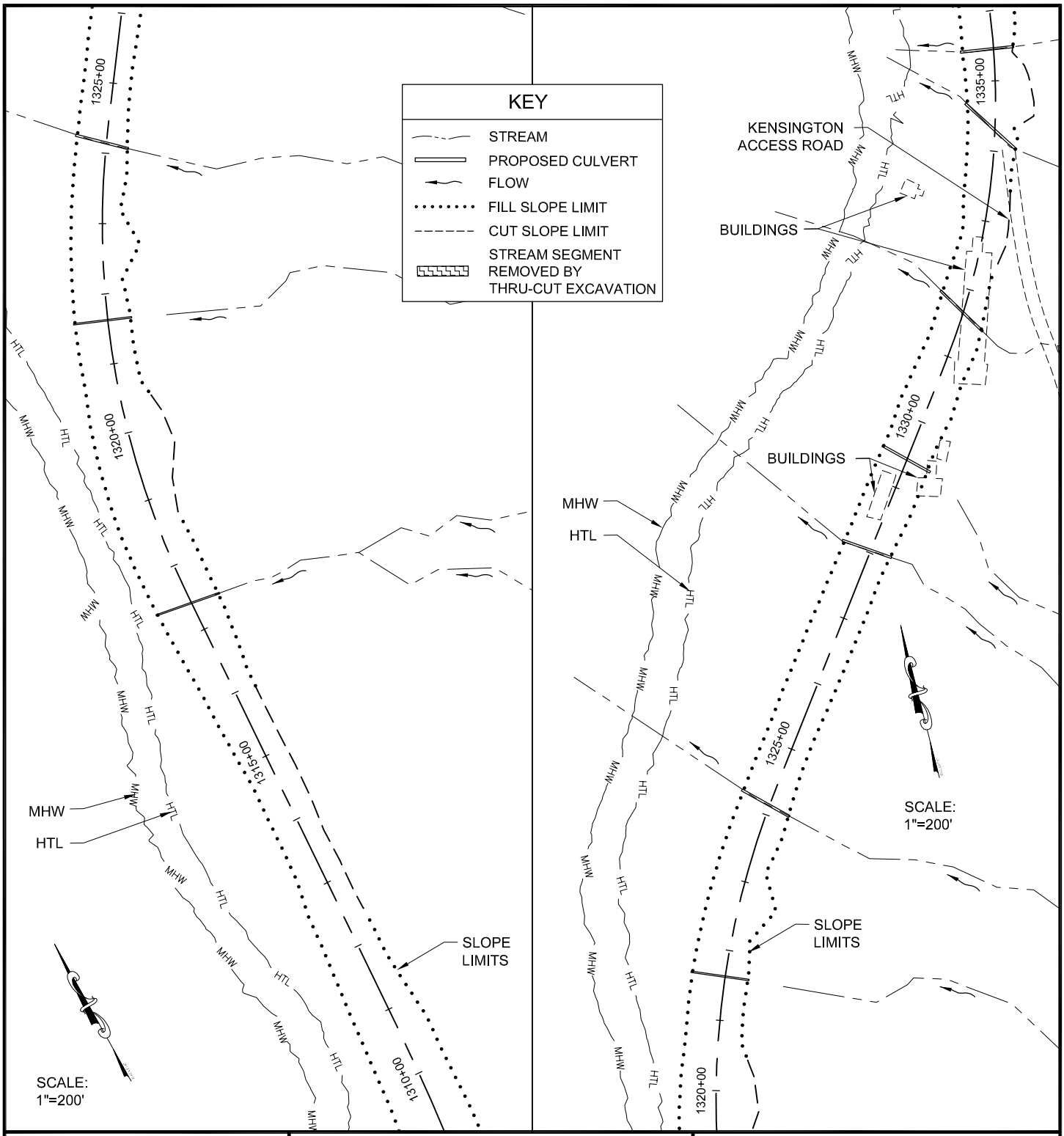

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. COEUR ALASKA, INC.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E., SECTIONS 3 & 6, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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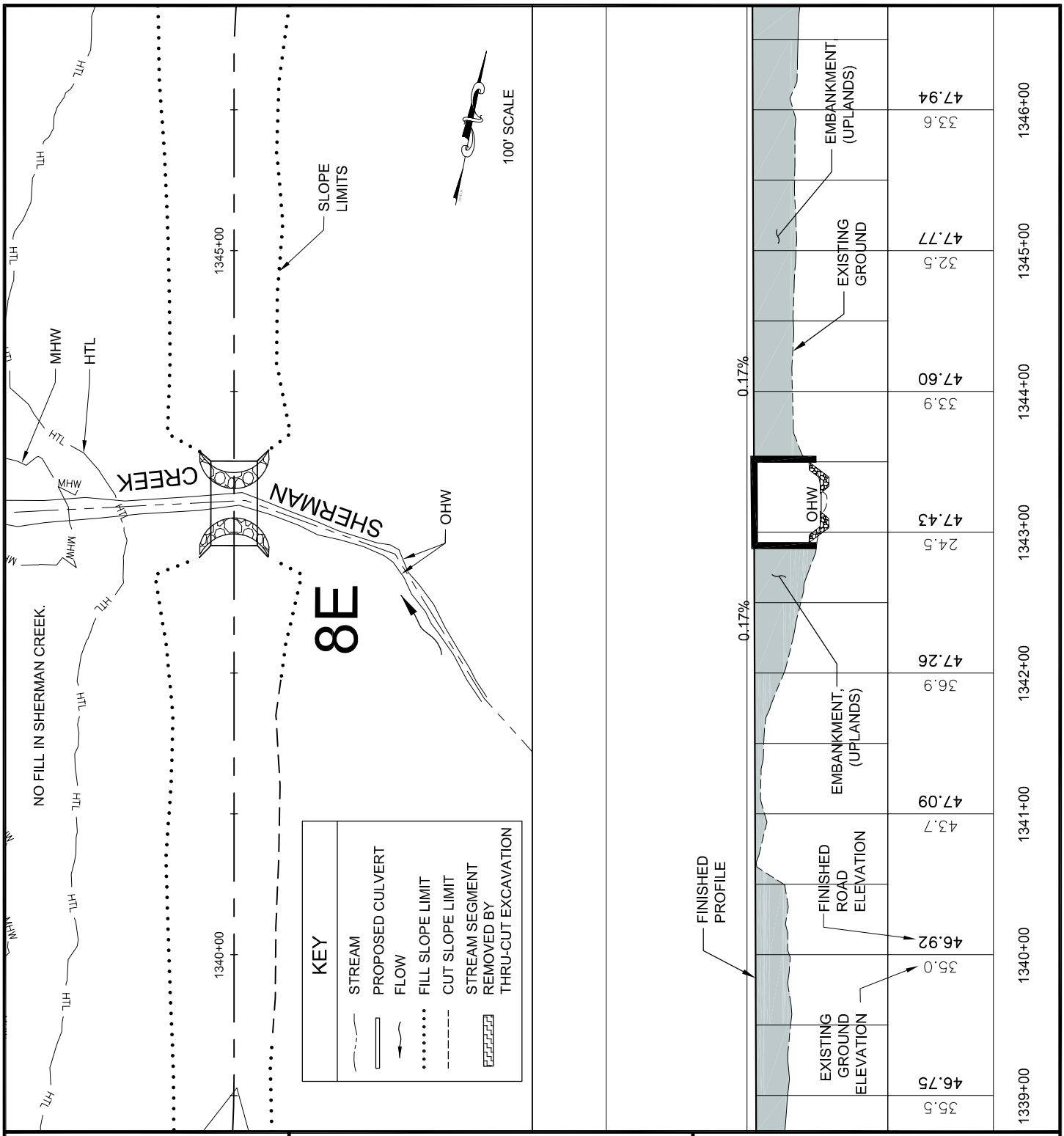

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. COEUR ALASKA, INC.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Sherman Creek Bridge
Bridge No. 8E

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 35 S., R. 62 E., SECT. 6, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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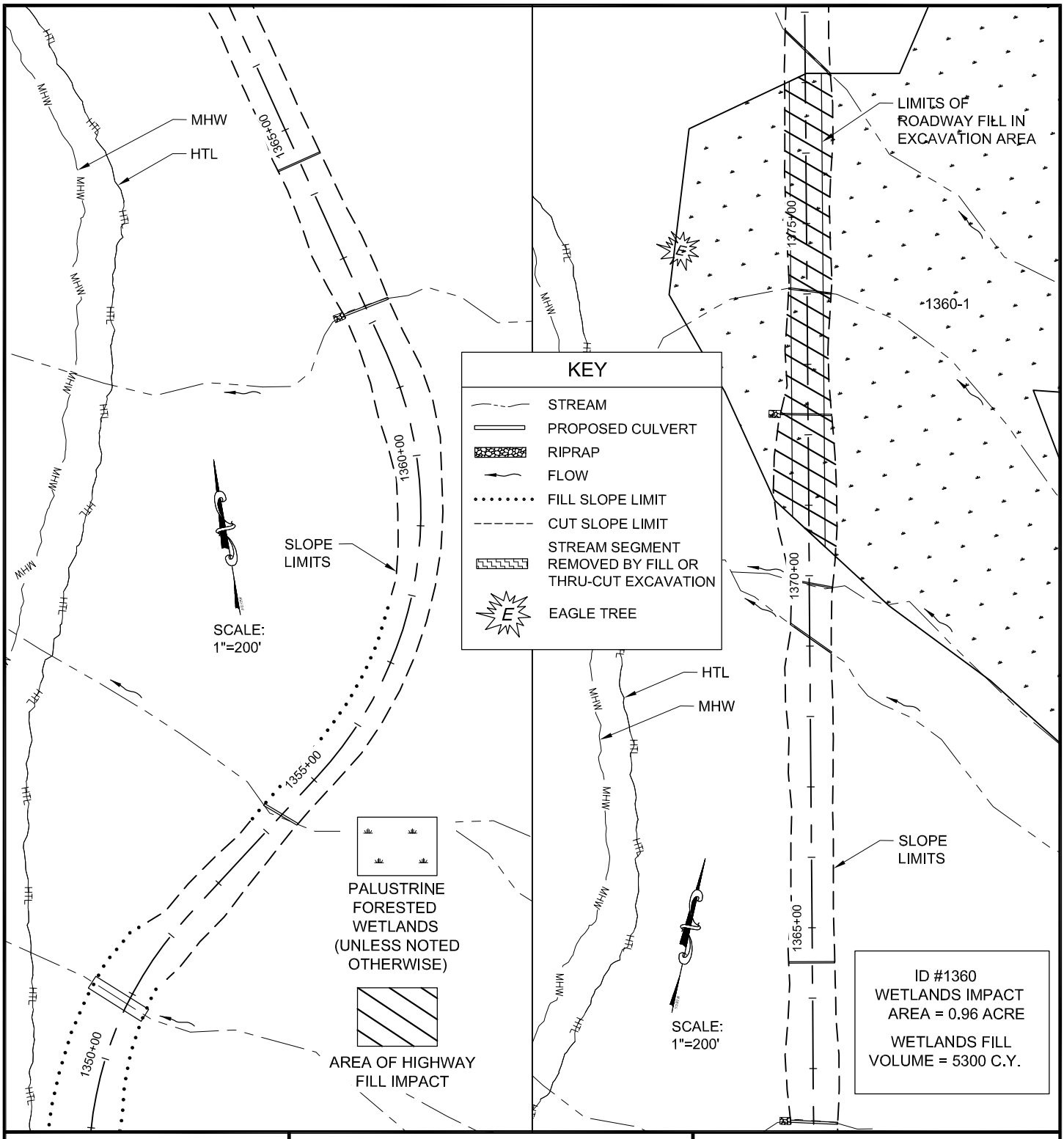

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 34 S., R. 62 E., SECT. 31, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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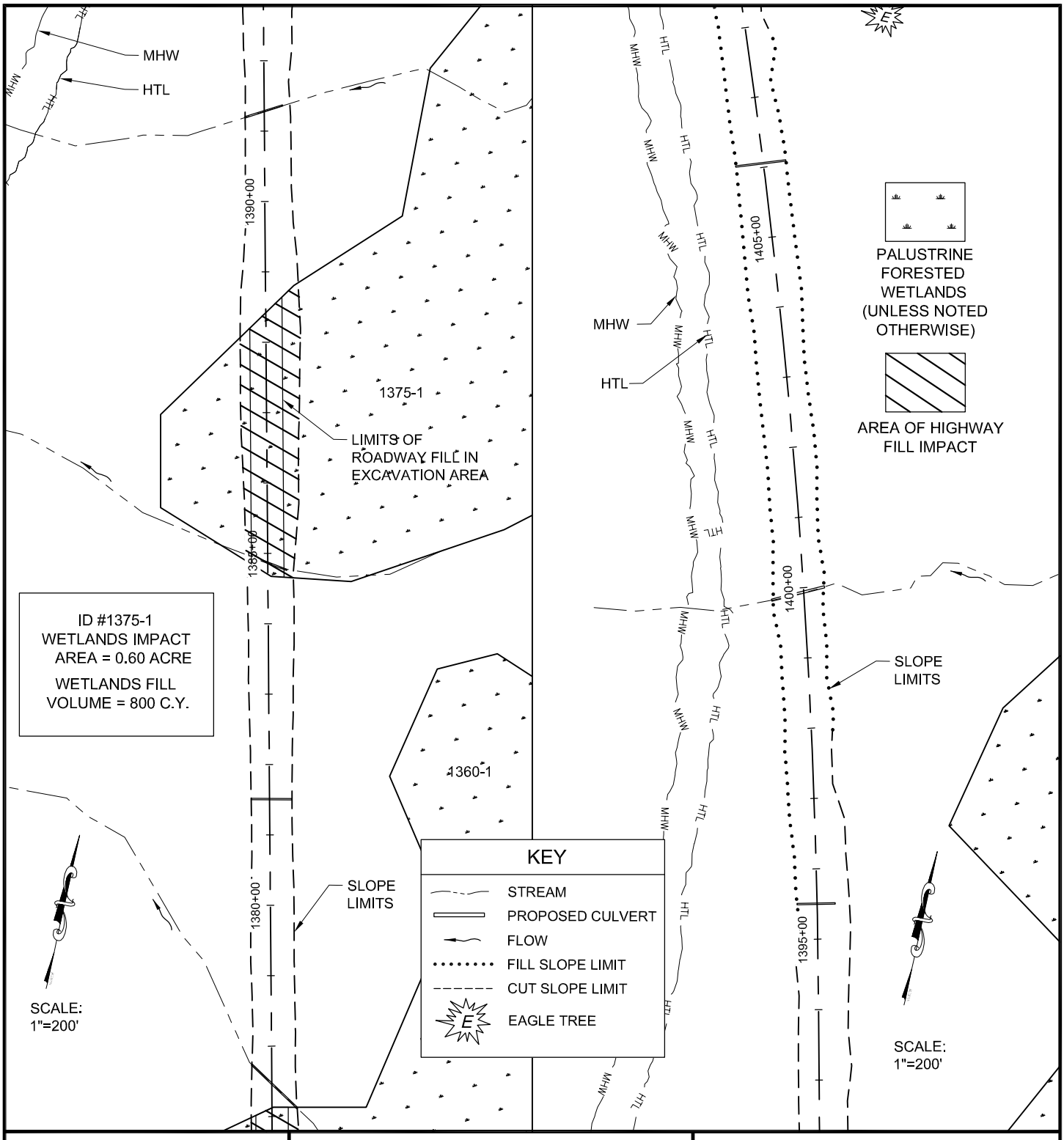

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 34 S., R. 62 E., SECTIONS 30 & 31, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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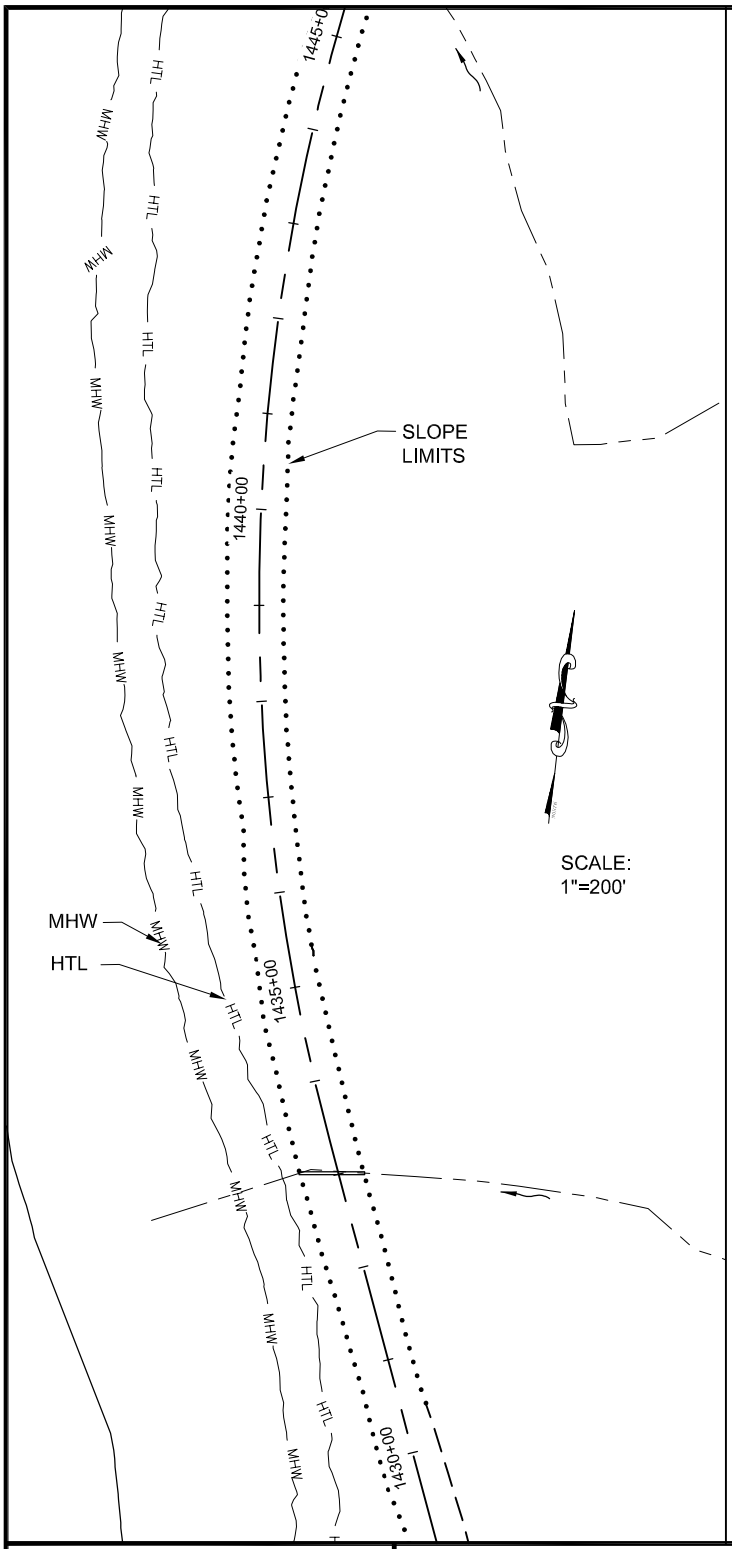

KEY	
	STREAM
	PROPOSED CULVERT
	FLOW
	FILL SLOPE LIMIT
	CUT SLOPE LIMIT

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ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Palustrine Wetlands Areas and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 34 S., R. 62 E., SECTIONS 30 & 31, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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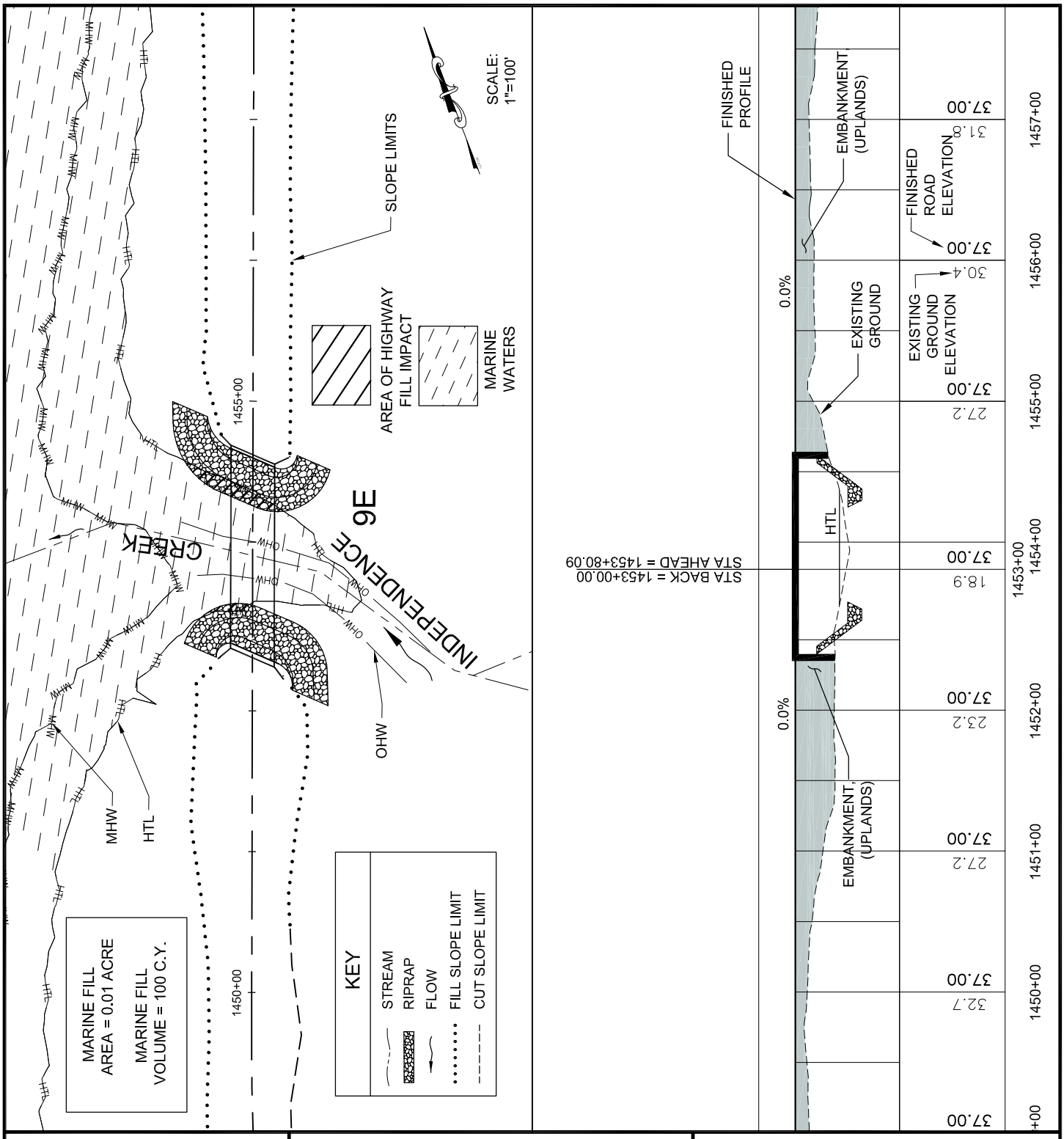

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Marine Water Fill at Independence Creek Bridge
Bridge No. 9E

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 34 S., R. 62 E., SECT. 30, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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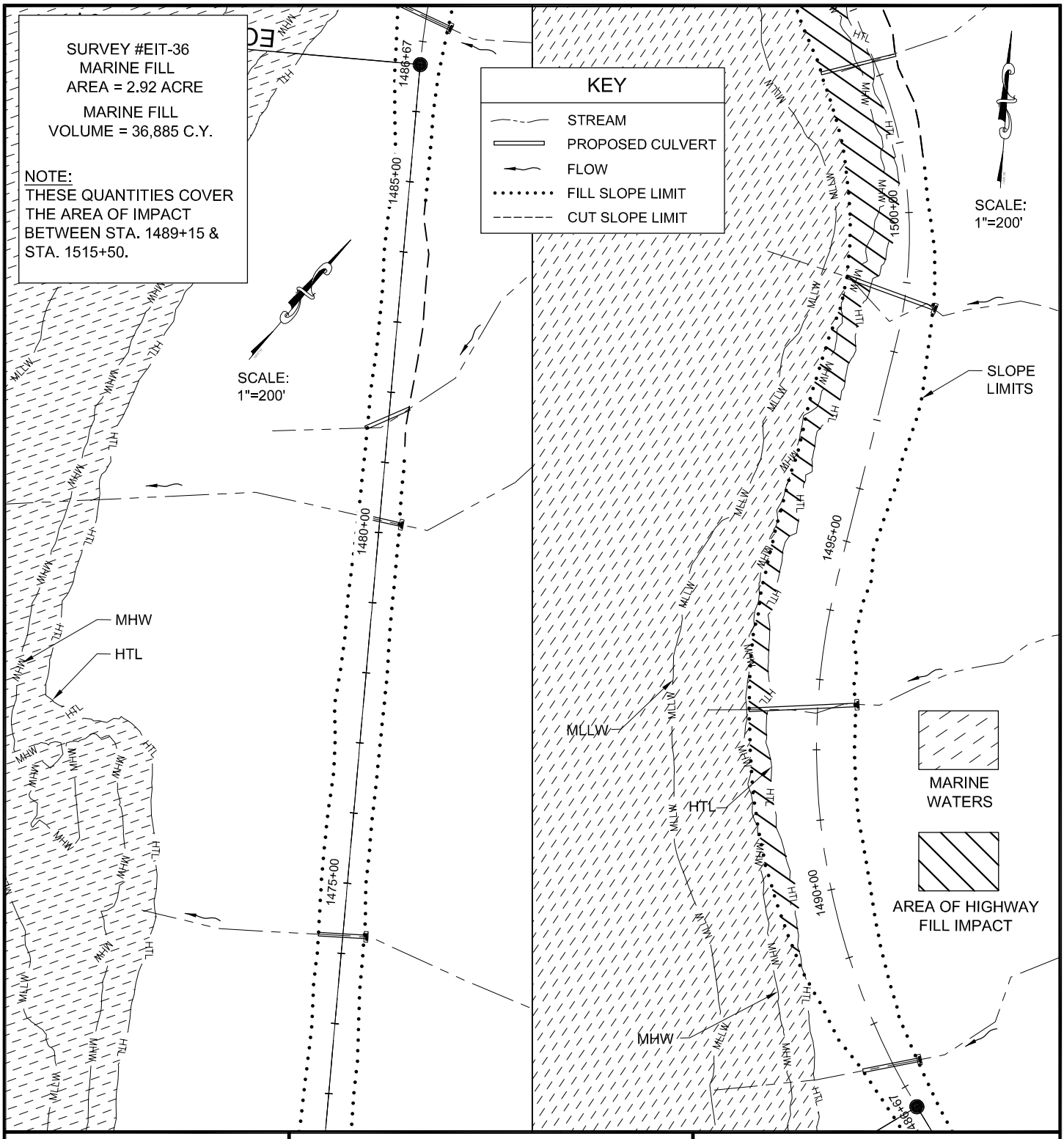

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Marine Water Fills and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 34 S., R. 61 E., SECT. 24,
T. 34 S., R. 62 E., SECT. 19, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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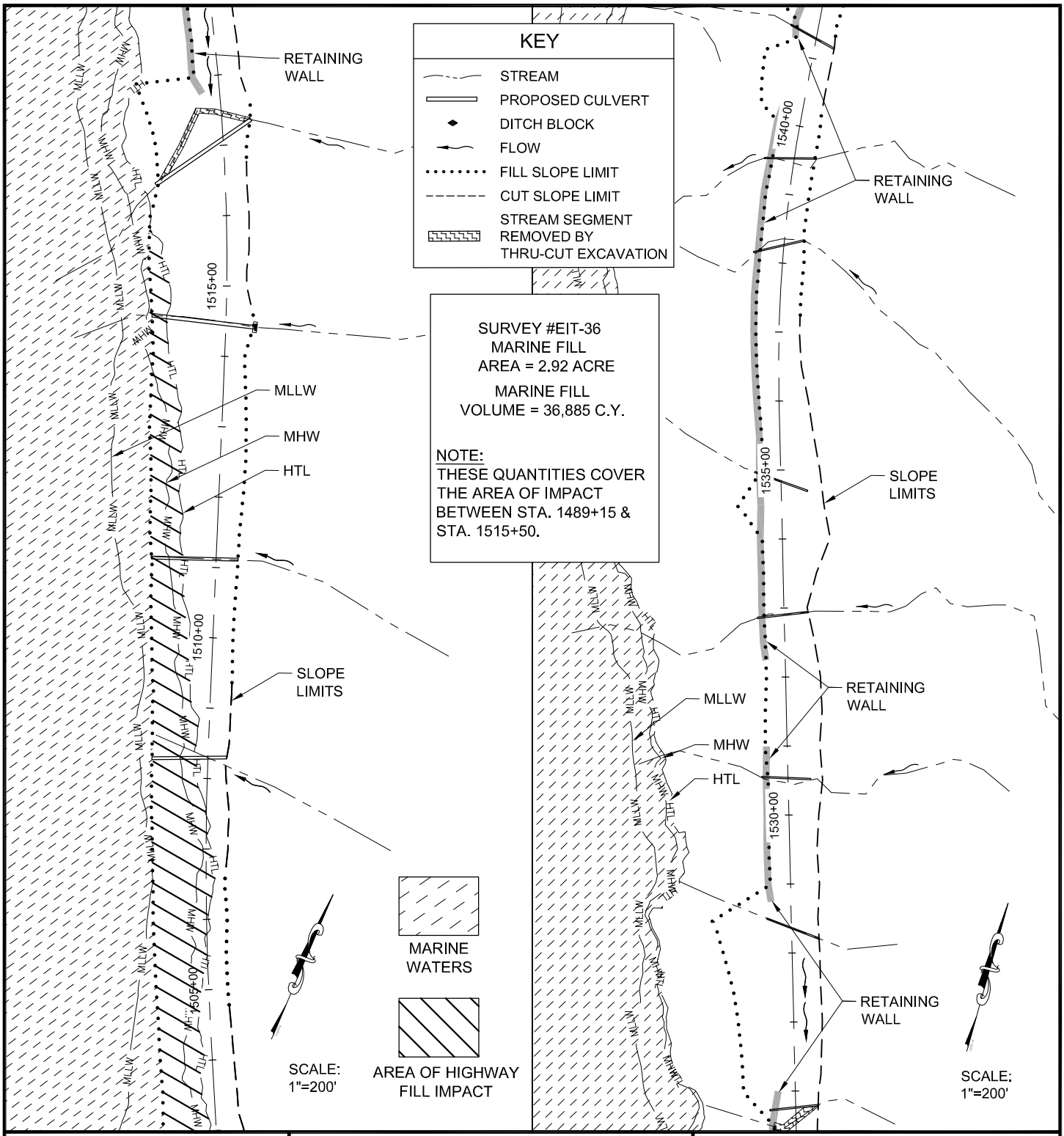

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Marine Water Fills and Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 34 S., R. 61 E.,
SECTIONS 13 & 24, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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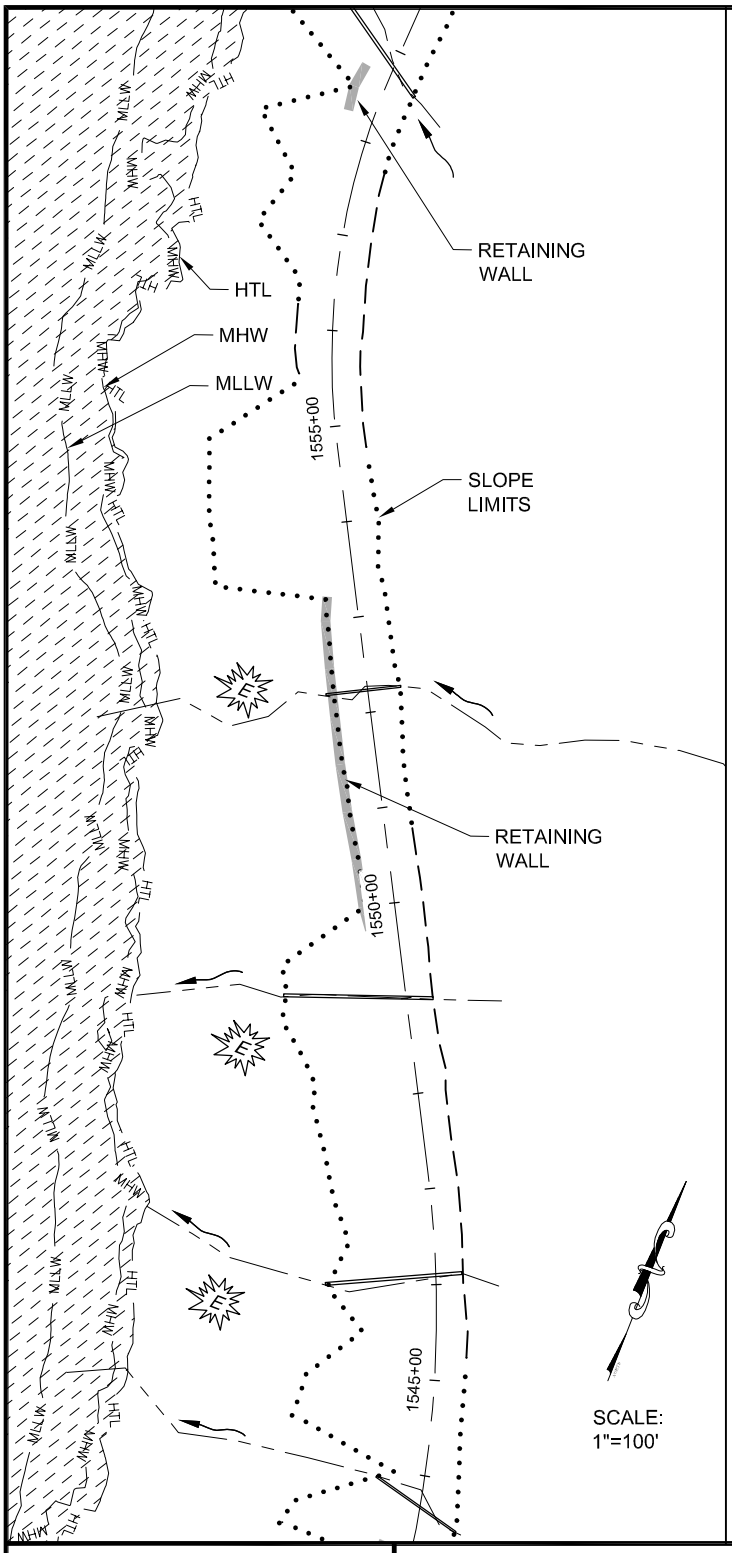

SCALE:
1"=100'

KEY

- STREAM
- PROPOSED CULVERT
- DITCH BLOCK
- FLOW
- FILL SLOPE LIMIT
- CUT SLOPE LIMIT
- STREAM SEGMENT REMOVED BY THRU-CUT EXCAVATION
- EAGLE TREE

MARINE WATERS

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ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:
LYNN CANAL AND BERNERS BAY

Stream Crossings

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2
AT: JUNEAU, ALASKA
LOCATED IN: T. 34 S., R. 61 E., SECT. 13, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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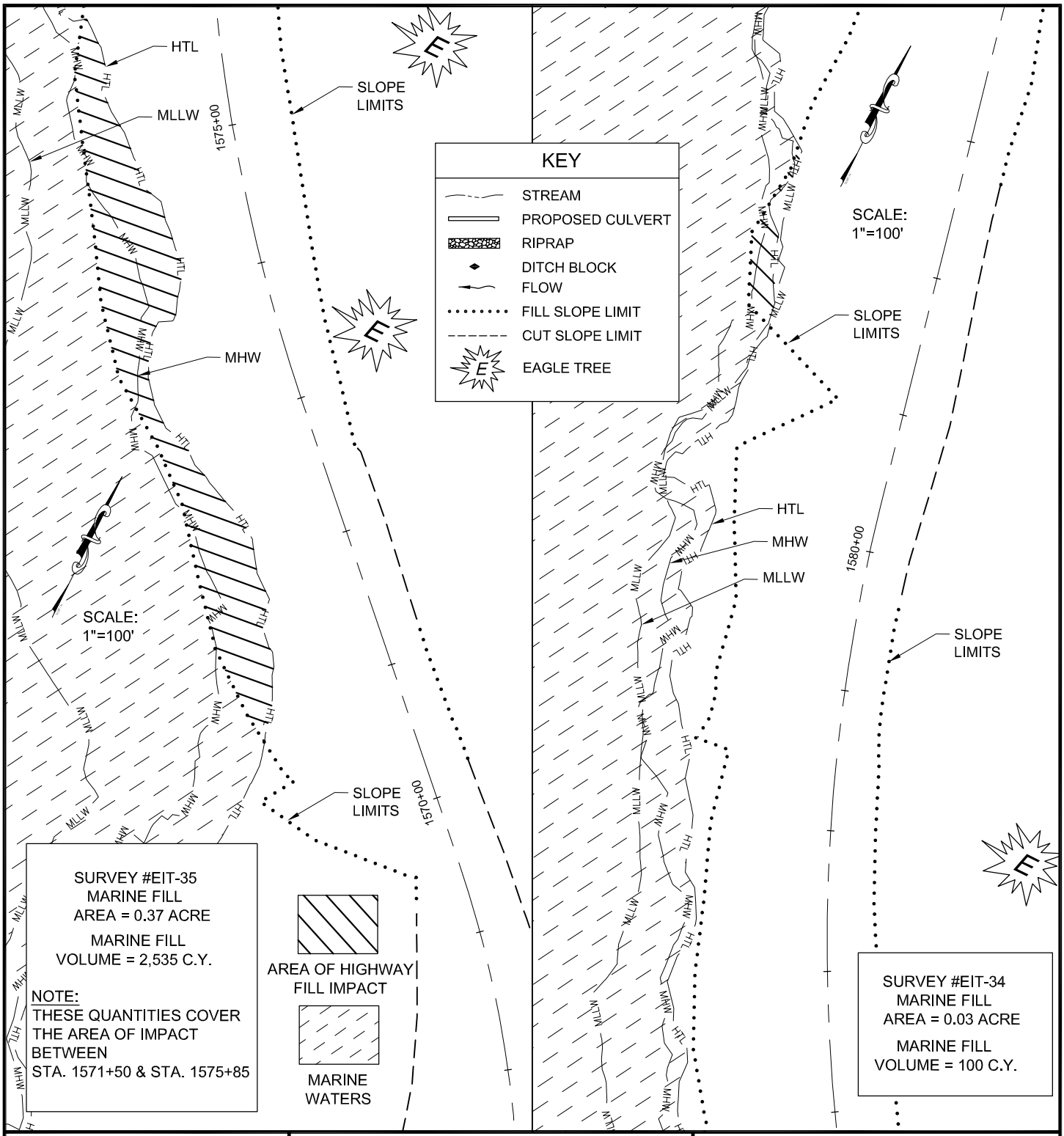

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:
LYNN CANAL AND BERNERS BAY

Marine Waters Fill

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 34 S., R. 61 E.,
SECTIONS 7 & 13, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 80 OF 93

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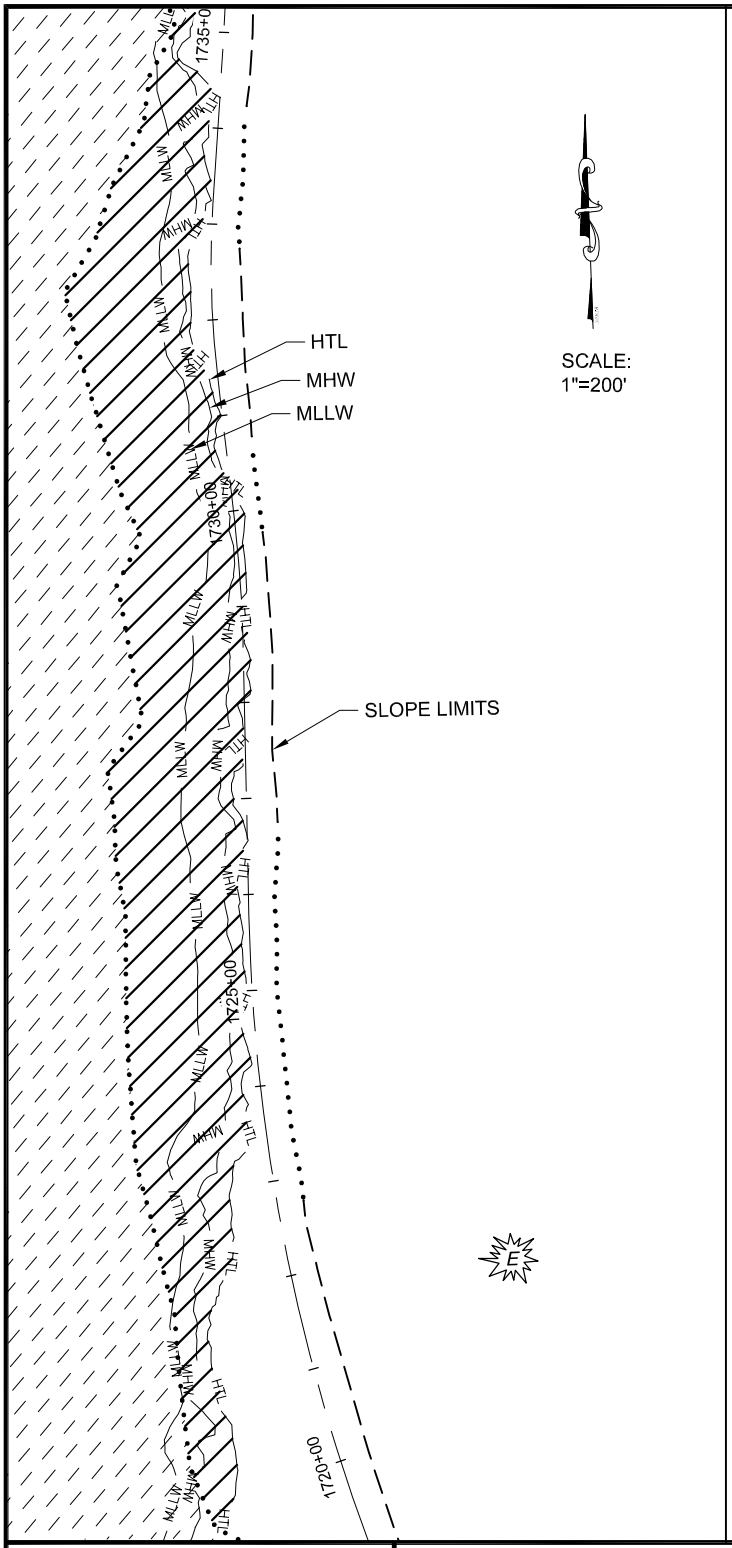

SCALE:
1"=200'

SURVEY #EIT-24 & STN-3
MARINE FILL
AREA = 3.48 ACRE

MARINE FILL
VOLUME = 14,445 C.Y.

NOTE:
THESE QUANTITIES COVER THE AREA OF IMPACT BETWEEN STA. 1719+70 & STA. 1735+58.

KEY

- STREAM
- PROPOSED CULVERT
- RIPRAP
- DITCH BLOCK
- FLOW
- FILL SLOPE LIMIT
- CUT SLOPE LIMIT
- EAGLE TREE

MARINE WATERS

AREA OF HIGHWAY FILL IMPACT

(THIS SHEET LEFT BLANK.)

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:
LYNN CANAL AND BERNERS BAY

Marine Water Fills and Sidecast Area

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 33 S., R. 61 E.,
SECTION 36, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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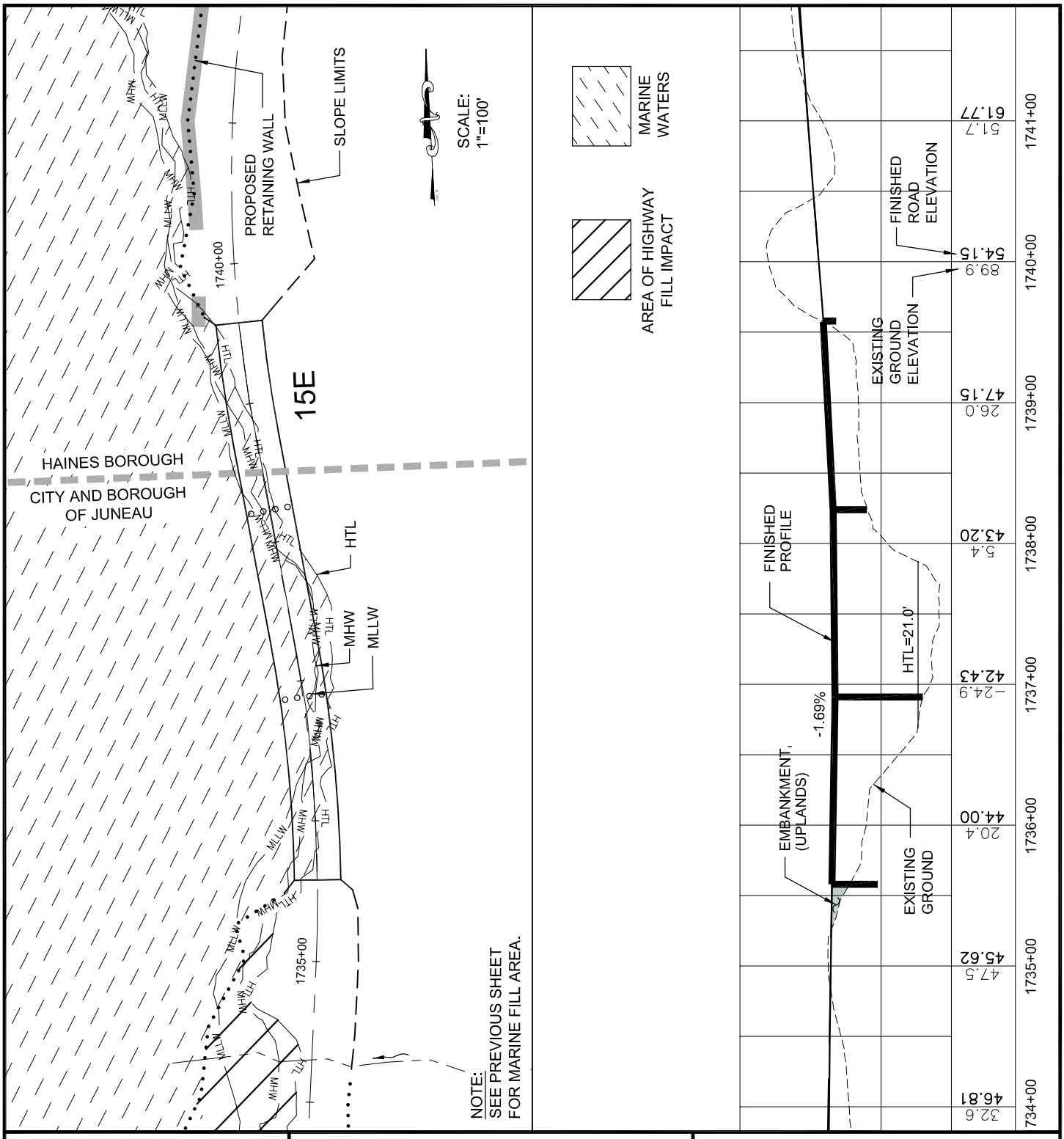


ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Unnamed Creek Bridge
Bridge No. 15E

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

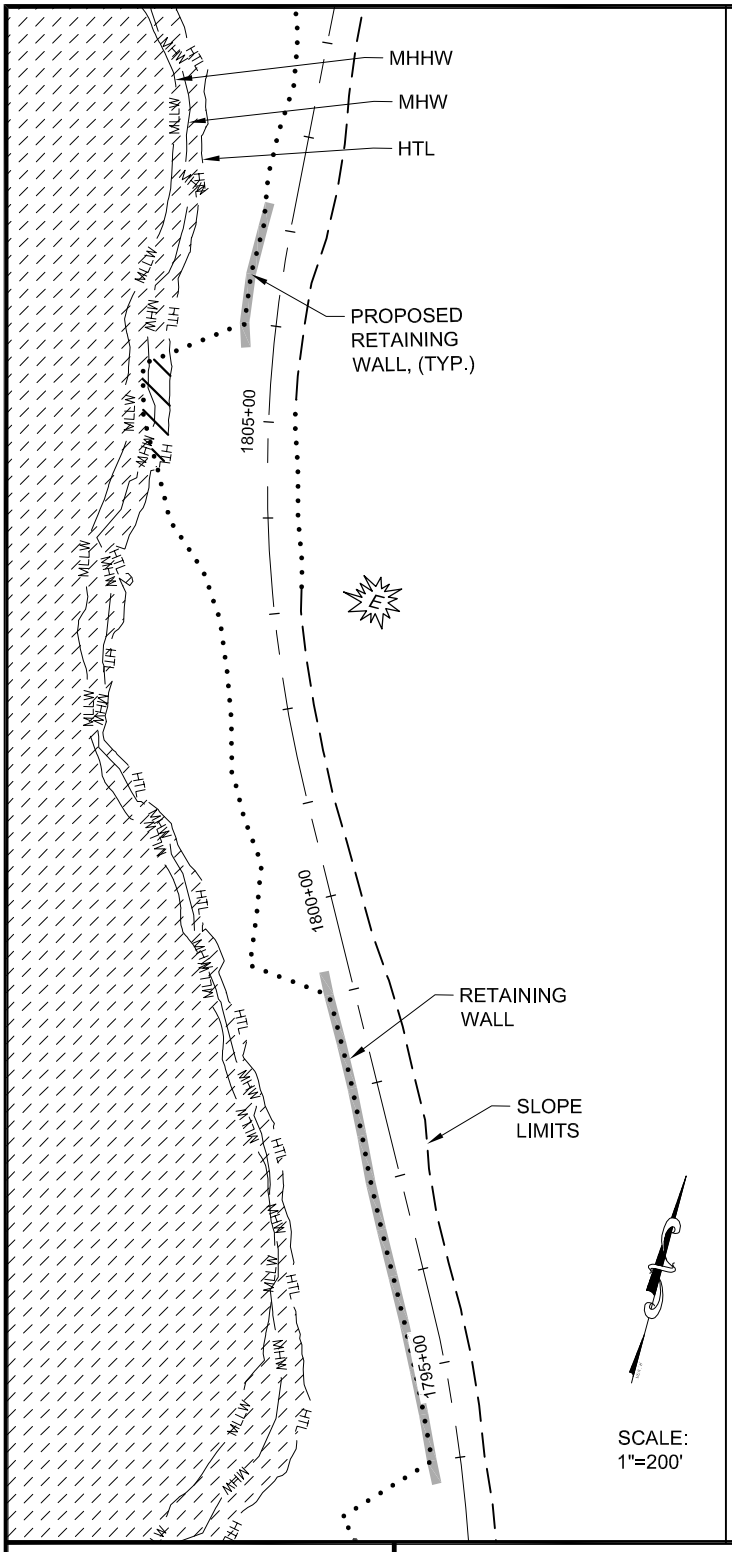
JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 33 S., R. 61 E.,
SECTIONS 25 & 36, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

Q:\JNU\71100\RE\C3D ZONES_1_2_3_2013\CORPS 2013\71100_CORP_77-93_PLAN.DWG



SCALE:
1"=200'

KEY

- STREAM
- PROPOSED CULVERT
- RIPRAP
- DITCH BLOCK
- FLOW
- FILL SLOPE LIMIT
- CUT SLOPE LIMIT
- EAGLE TREE

SURVEY #EIT-22
MARINE FILL
AREA = 0.02 ACRE

MARINE FILL
VOLUME = 65 C.Y.

NOTE:
THESE QUANTITIES COVER THE AREA OF IMPACT BETWEEN STA. 1804+50 & STA. 1805+75.

MARINE WATERS

AREA OF HIGHWAY FILL IMPACT

(THIS SHEET LEFT BLANK.)

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:
LYNN CANAL AND BERNERS BAY

Marine Waters Fill

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 33 S., R. 61 E.,
SECTIONS 24 & 25, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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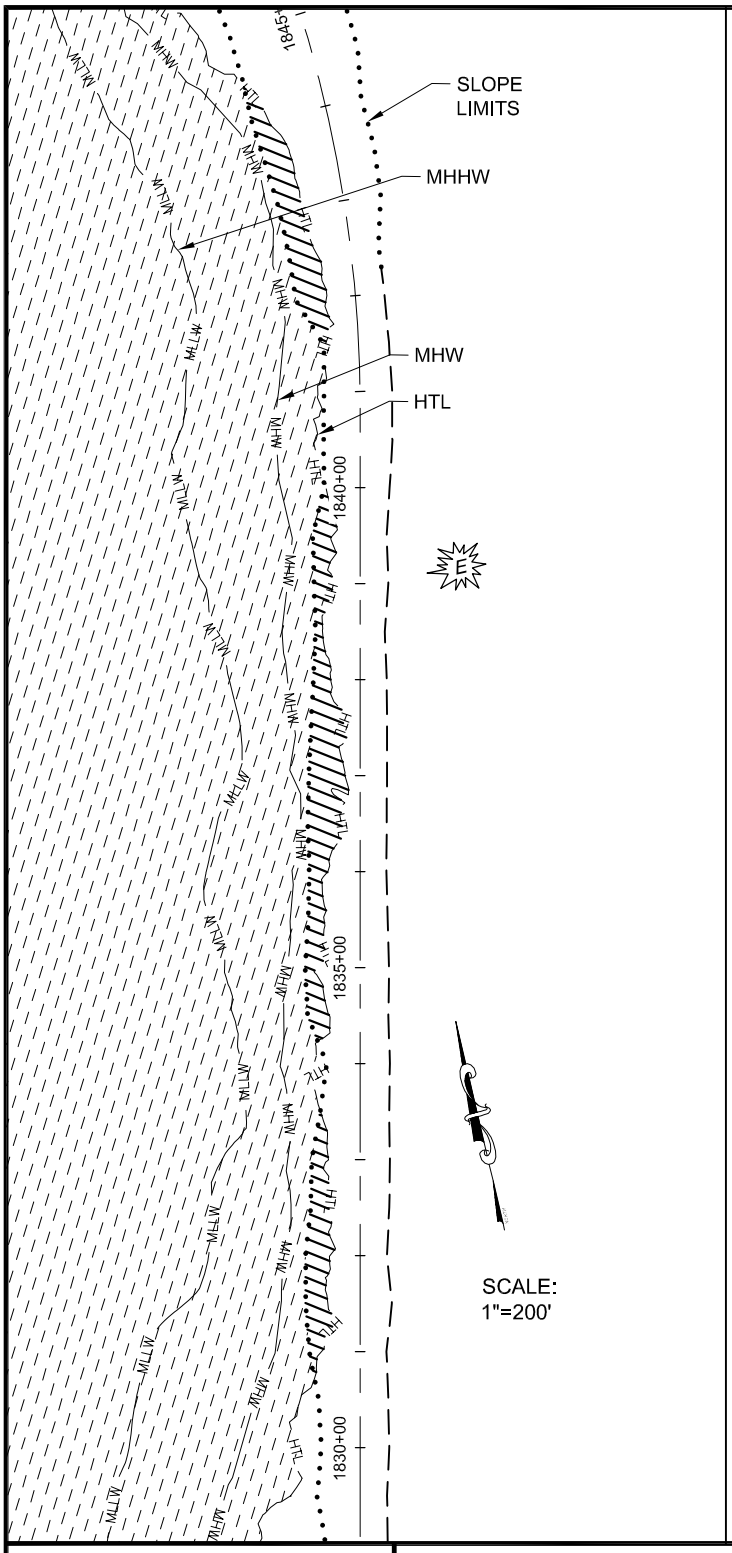

SCALE:
1"=200'

KEY

- STREAM
- PROPOSED CULVERT
- RIPRAP
- DITCH BLOCK
- FLOW
- FILL SLOPE LIMIT
- CUT SLOPE LIMIT
- EAGLE TREE

SURVEY #EIT-21
MARINE FILL
AREA = 0.52 ACRE

MARINE FILL
VOLUME = 1920 C.Y.

NOTE:
THESE QUANTITIES COVER THE AREA OF IMPACT BETWEEN STA. 1831+00 & STA. 1844+00.

MARINE WATERS

AREA OF HIGHWAY FILL IMPACT

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ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:
LYNN CANAL AND BERNERS BAY

Marine Waters Fill

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 33 S., R. 61 E., SECT. 11, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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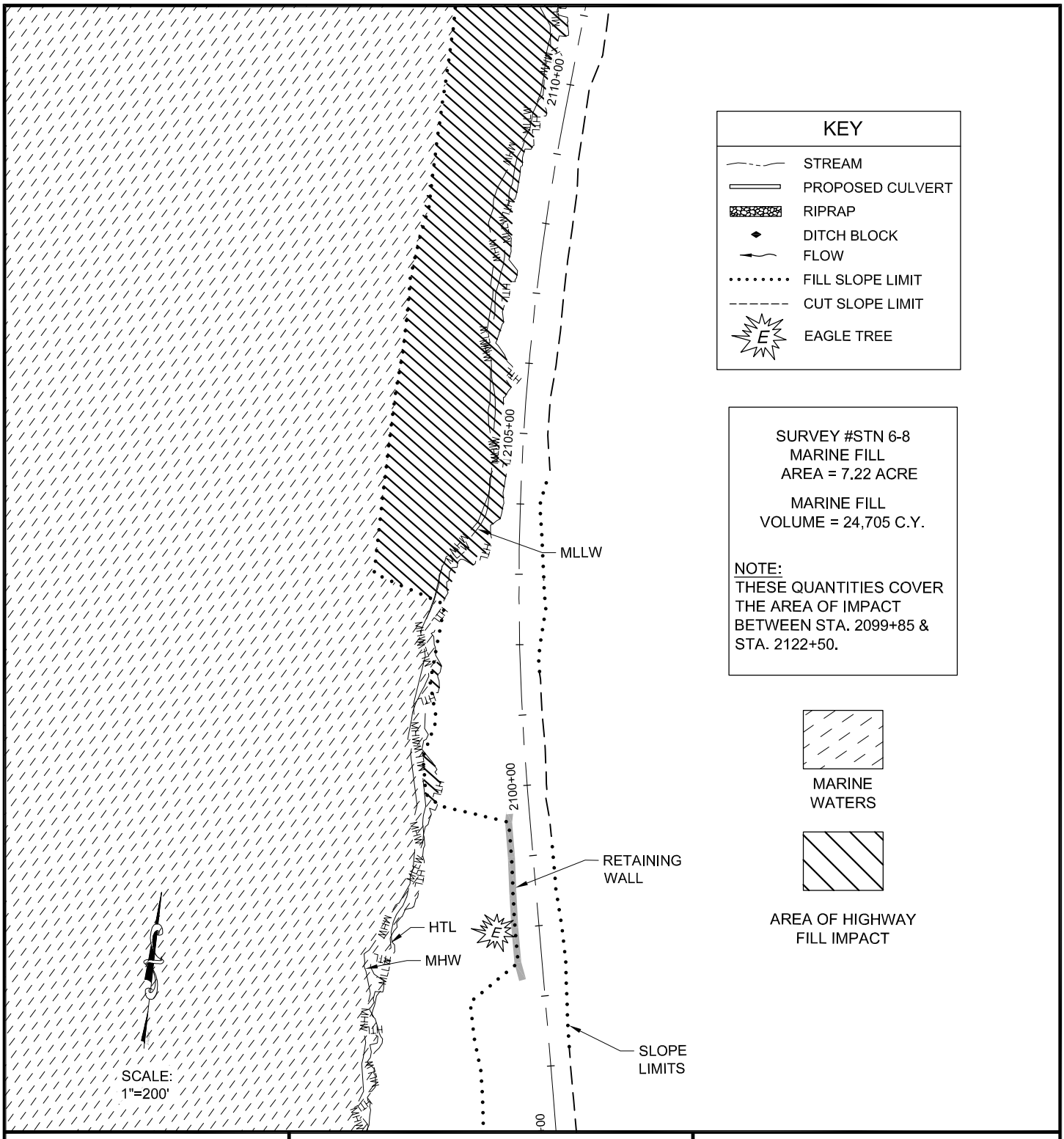

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Marine Waters Fill

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 32 S., R. 61 E., SECT. 30, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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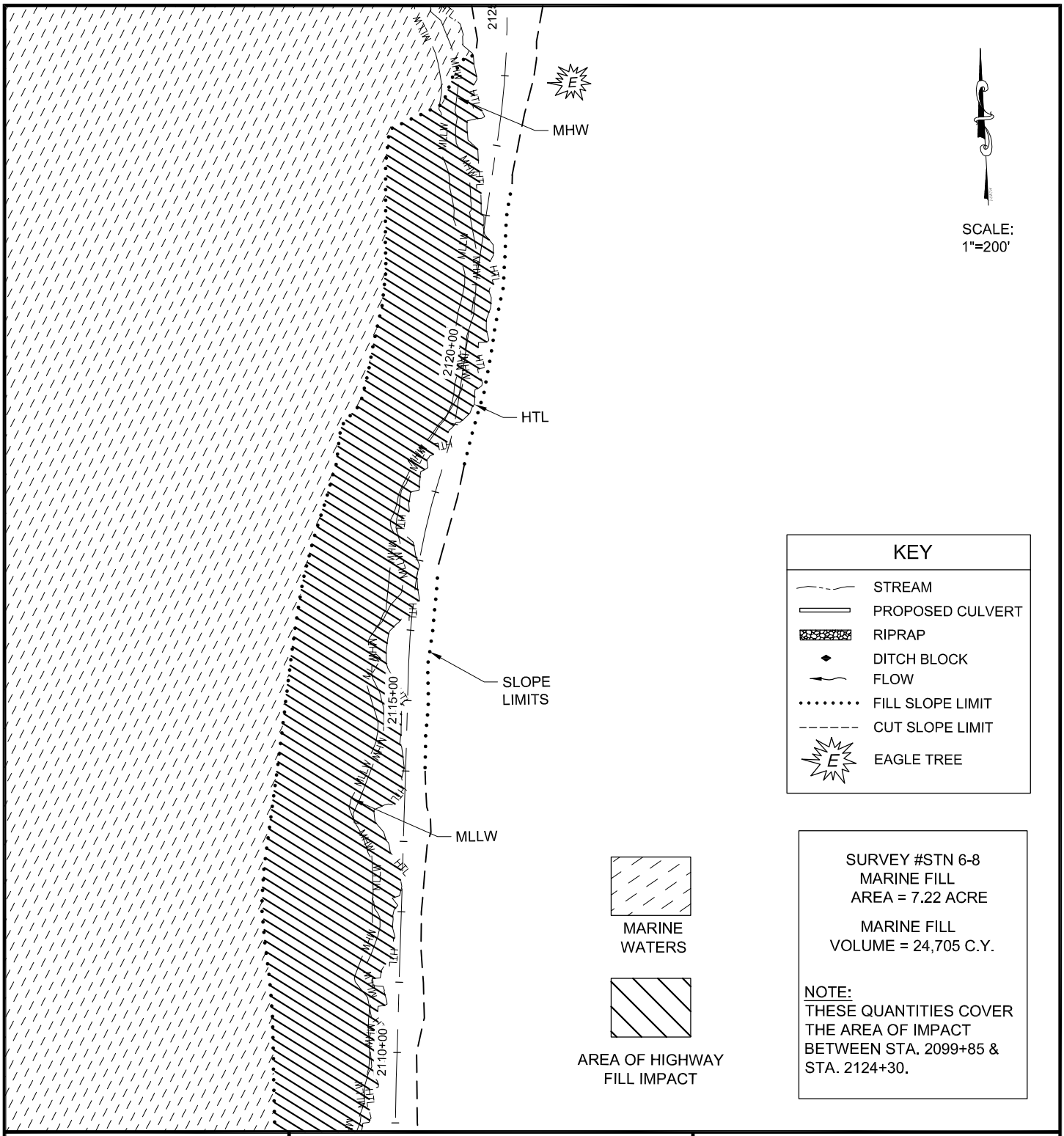

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Marine Waters Fill

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 32 S., R. 61 E., SECT. 30, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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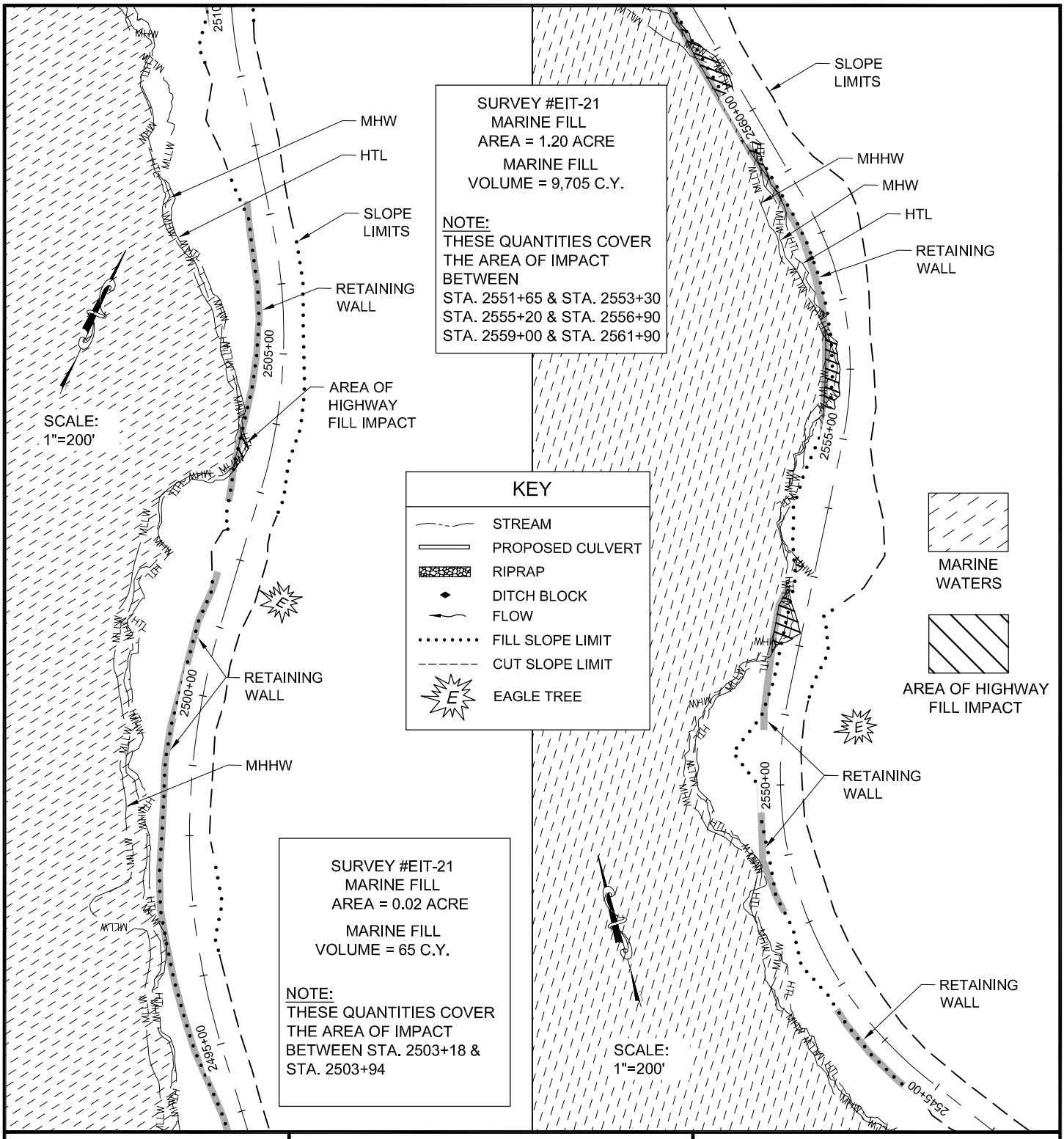

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:
LYNN CANAL AND BERNERS BAY

Marine Waters Fill

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2
AT: JUNEAU, ALASKA
LOCATED IN: T. 32 S., R. 61 E., SECT. 31, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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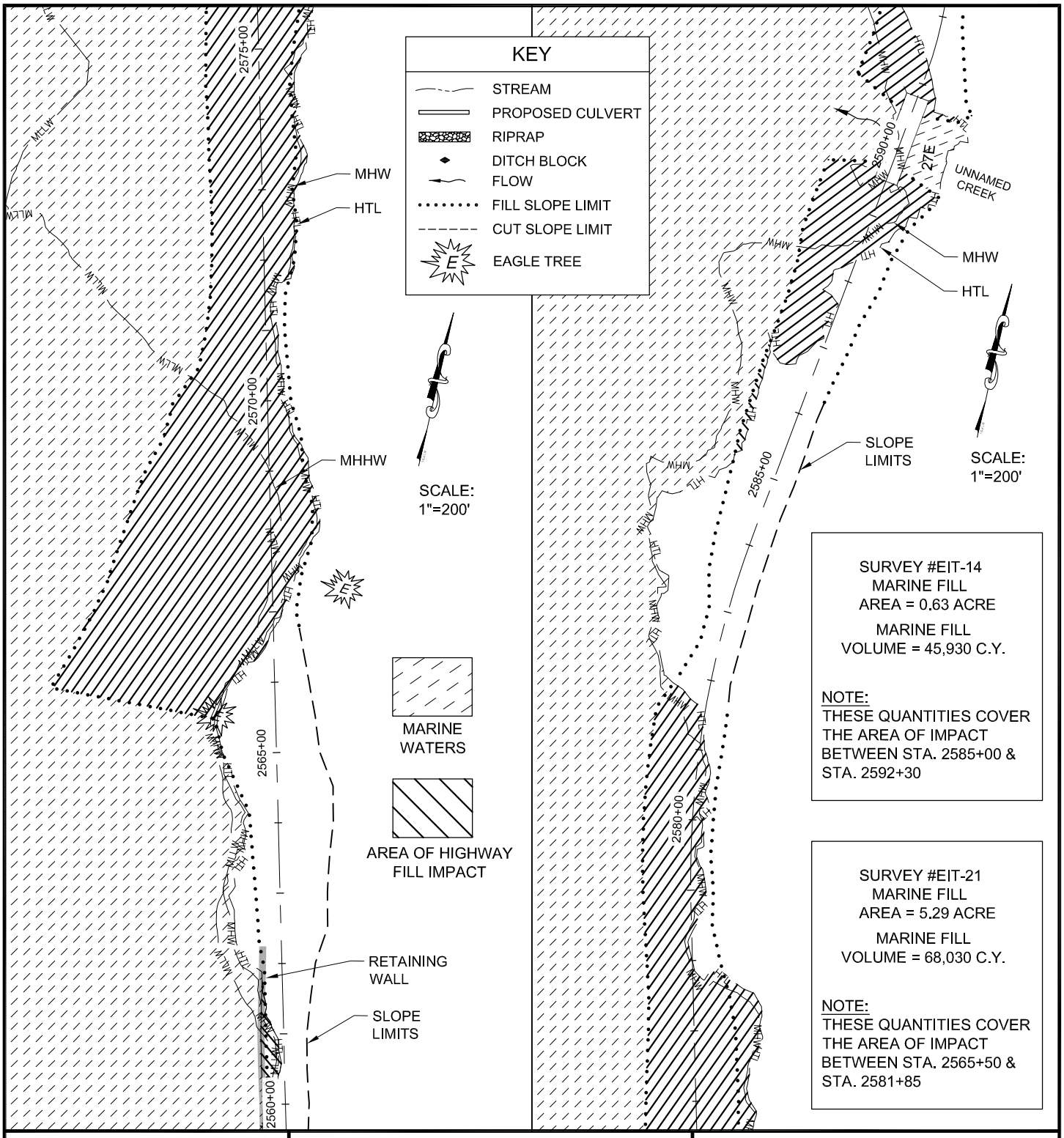

SURVEY #EIT-14
MARINE FILL
AREA = 0.63 ACRE

MARINE FILL
VOLUME = 45,930 C.Y.

NOTE:
THESE QUANTITIES COVER THE AREA OF IMPACT BETWEEN STA. 2585+00 & STA. 2592+30

SURVEY #EIT-21
MARINE FILL
AREA = 5.29 ACRE

MARINE FILL
VOLUME = 68,030 C.Y.

NOTE:
THESE QUANTITIES COVER THE AREA OF IMPACT BETWEEN STA. 2565+50 & STA. 2581+85

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:
LYNN CANAL AND BERNERS BAY

Marine Waters Fill

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 32 S., R. 61 E., SECT. 31, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 88 OF 93

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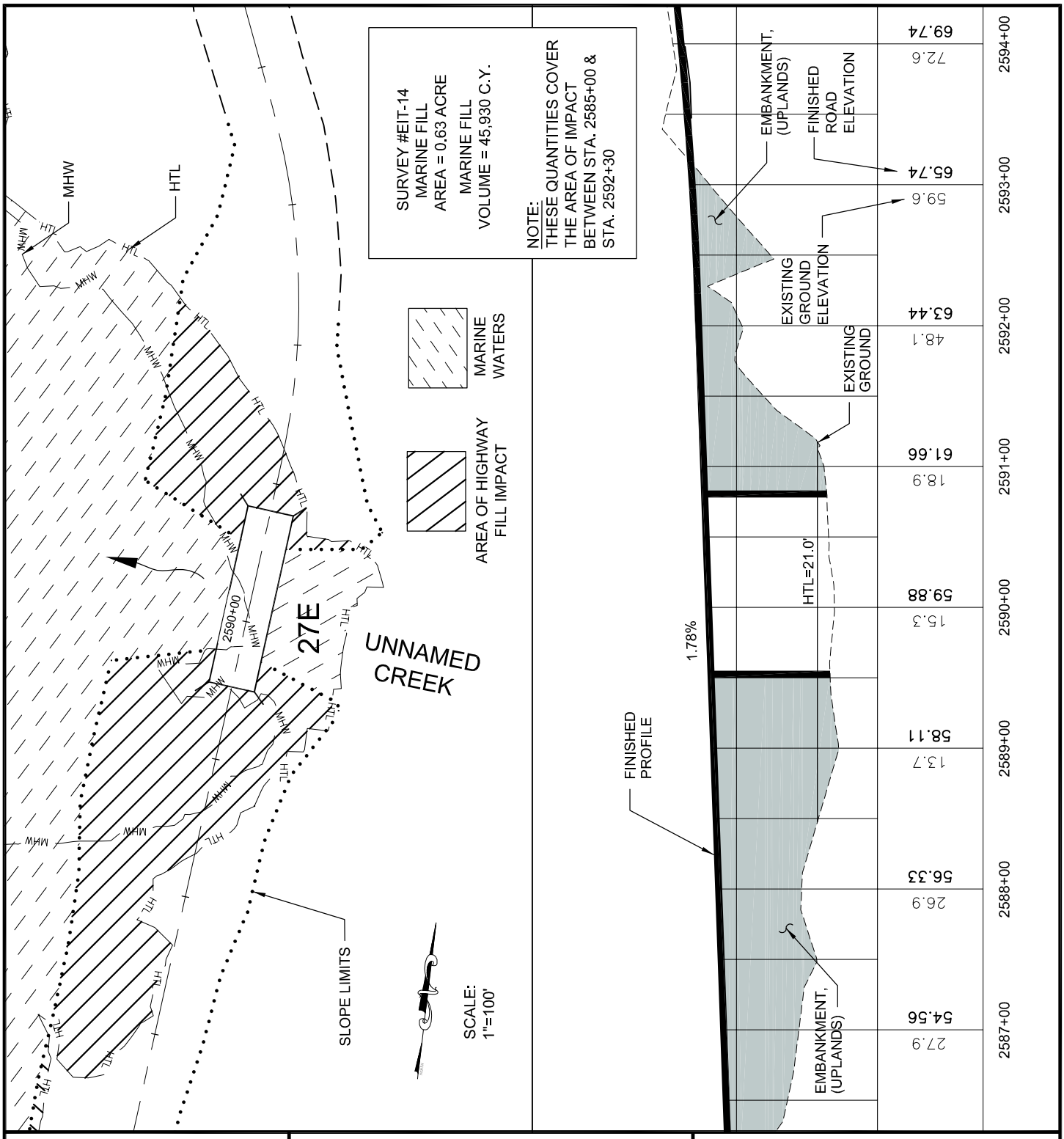

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Marine Waters Fill at Unnamed Creek Bridge Bridge No. 27E

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 31 S., R. 60 E., SECT. 15, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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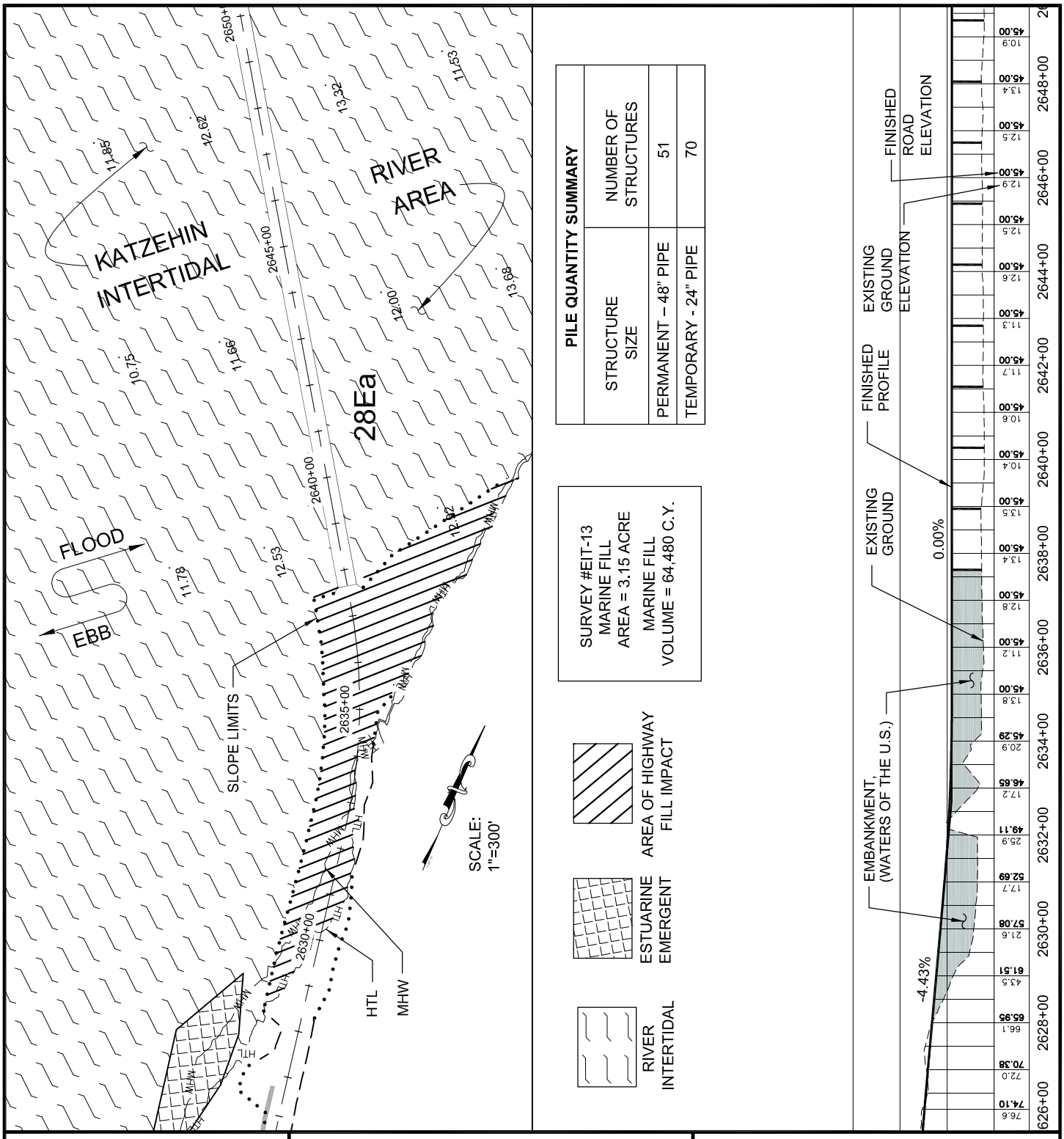

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Marine Waters Fill at Katzehin River Bridge Bridge No. 28Ea

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 31 S., R. 60 E., SECT. 10, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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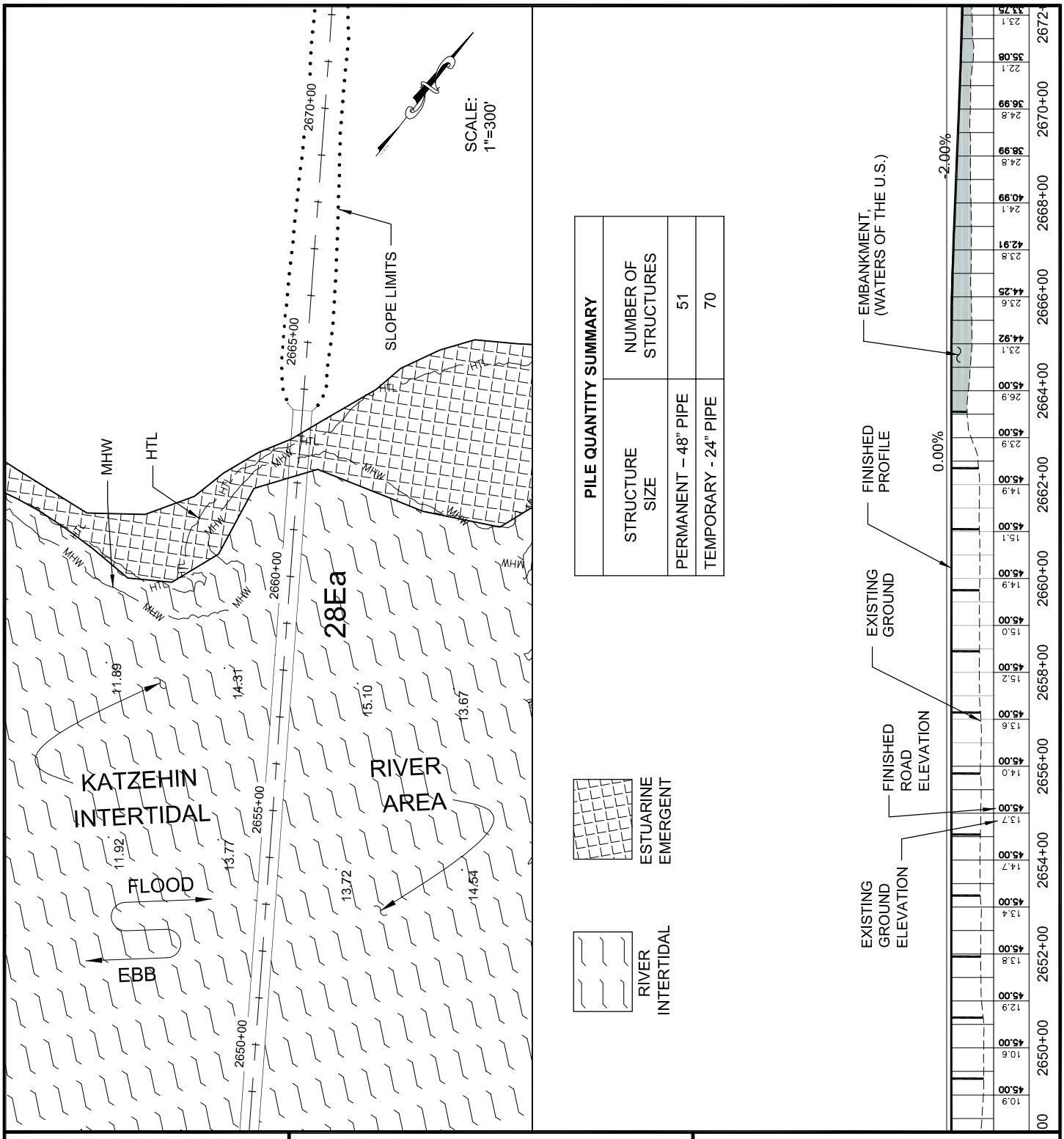

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES

WATER BODY:

LYNN CANAL AND BERNERS BAY

Katzehin River Bridge
Bridge No. 28Ea

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 31 S., R. 60 E., SECT. 10, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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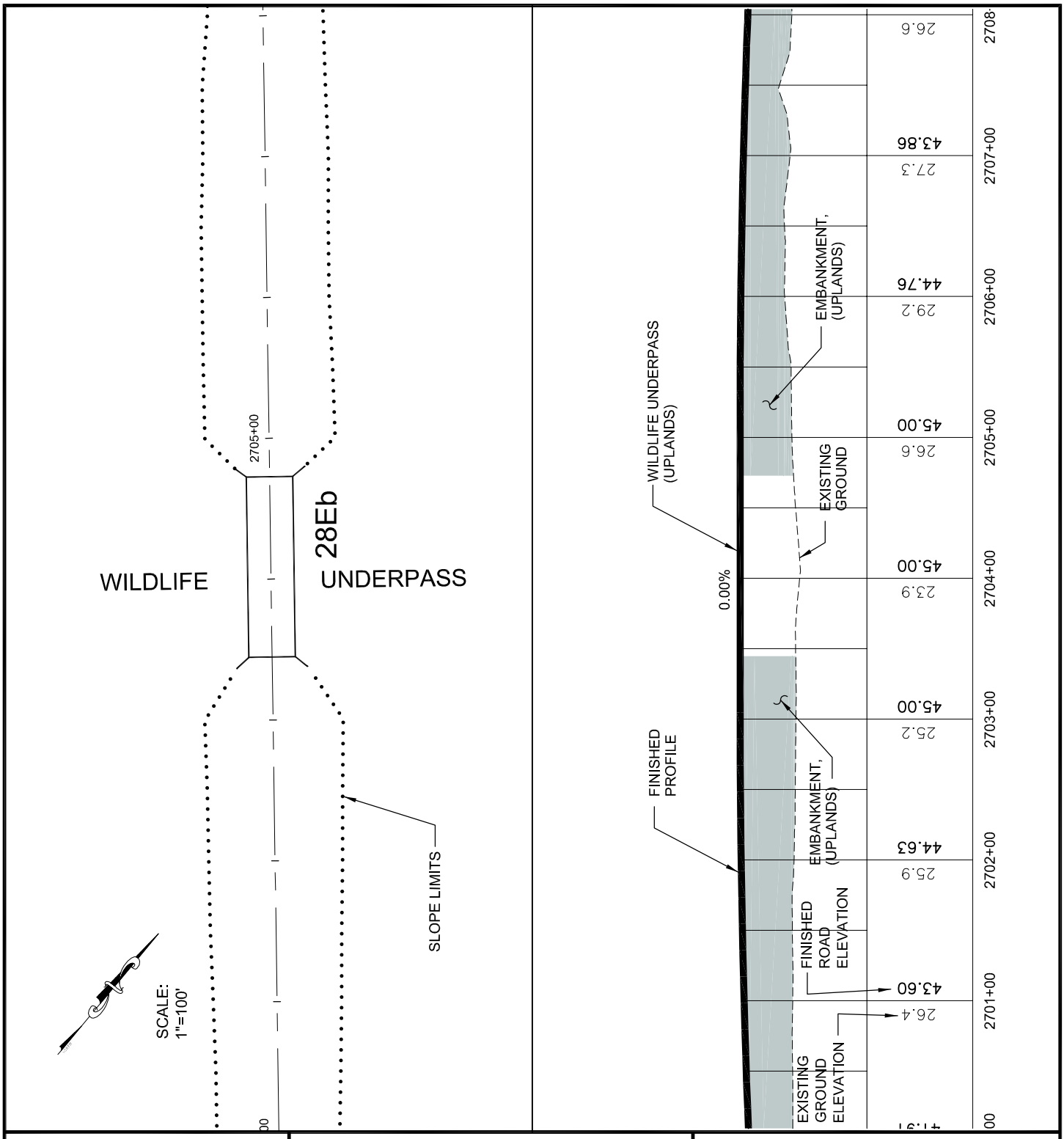

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Wildlife Underpass Bridge
Bridge No. 28Eb

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION
AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 31 S., R. 60 E., SECT. 15, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

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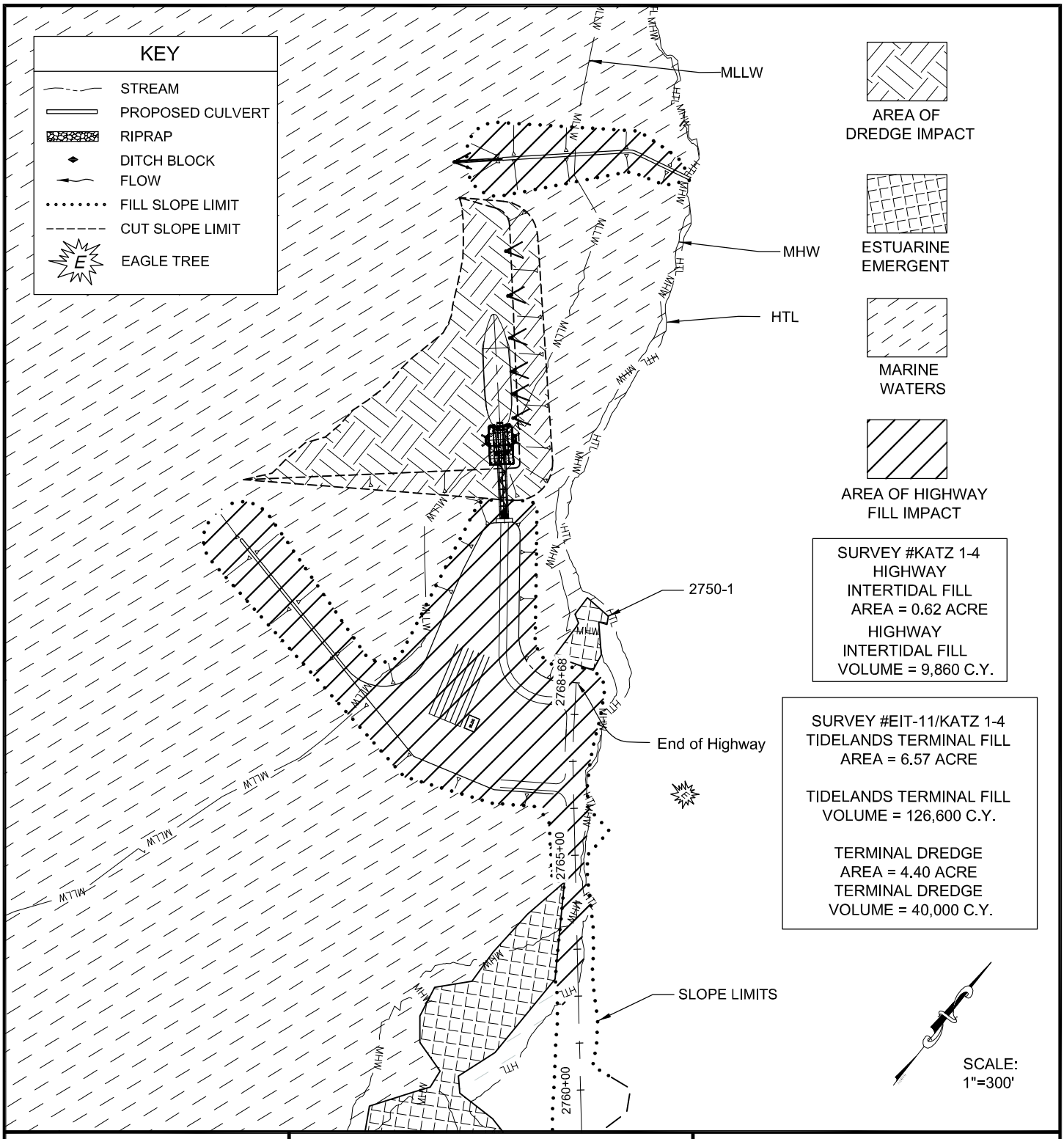

ADJACENT PROPERTY OWNERS:

1. U.S. FOREST SERVICE AND OTHERS, VARIES
2. A.D.N.R.

WATER BODY:

LYNN CANAL AND BERNERS BAY

Katzehin Terminal Estuarine Emergent and Marine Waters Areas

APPLICATION BY:
ALASKA STATE DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
S.E. REGION DESIGN & ENGINEERING SERVICES

JUNEAU ACCESS IMPROVEMENTS
FILE # : POA - 2006 - 597 - 2

AT: JUNEAU, ALASKA

LOCATED IN: T. 31 S., R. 60 E., SECT. 4, C.R.M.

DETAIL PLAN SHEETS
DATE: JULY 2014

SHEET 93 OF 93

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Attachment 3

USACE Permit Application

Applicant's Categorization of Wetlands and Proposed Mitigation Statement

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Attachment 3
USACE Permit Application, Continuation of Block 23,
Description of Avoidance, Minimization, and Compensation

Introduction and Purpose

This document summarizes the wetland and waterbody rating system used for the Juneau Access Improvements (JAI) Project. Most wetlands and waterbodies are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899. Projects must avoid impacts to wetlands wherever practicable, minimize impacts where impacts are not avoidable, and in some cases compensate for unavoidable impacts. This document is the basis of Department of Transportation and Public Facilities (DOT&PF) project design that avoids and minimizes impacts to aquatic resources wherever practicable and proposes mitigation ratios to offset unavoidable impacts to aquatic resources as directed in the Federal Rule on Compensatory Mitigation: Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (33 Parts 332 and 40 CFR Part 230, Subpart J), dated April 10, 2008. The rating system is based on previous wetland delineations, wetland functional assessments, supporting National Environmental Protection Act (NEPA) documents, and extensive agency consultation conducted for the JAI Project. As part of the JAI Draft Supplemental Environmental Impact Statement (EIS) prepared in 2004 DOT&PF evaluated wetland and waterbody functions. This evaluation was contained in *Appendix O: Wetlands Technical Report*. The report evaluated functions using the rating system and valuation criteria described in *Juneau Wetlands: Function and Value Study* (Adamus, 1987).

The 2004 wetland delineation and functional assessment was amended in 2006 and 2014. As part of the 2006 Final EIS, new field data were incorporated into the 2006 *Addendum to Appendix O – Wetlands Technical Report* due to alignment changes. This information was subsequently updated as part of the 2014 Draft Supplemental EIS due to additional design refinements and was incorporated into the *2014 Update to Appendix O – Wetlands Technical Report*. The *2014 Update to Appendix O – Wetlands Technical Report* updates the 2004 *Wetlands Technical Report* and replaces the 2006 *Addendum to Appendix O – Wetlands Technical Report.* However, no changes to the methodology or substantial changes to the delineation and functional assessment conclusions occurred as part of these updates.

The Federal Highway Administration (FHWA) issued a Record of Decision (ROD) in 2006 identifying Alternative 2B as the selected alternative. In 2008, DOT&PF obtained a USACE Section 404/10 permit based on the previous wetland delineation and functional assessment. USACE issued permit POA-2006-597-2, Berners Bay/Lynn Canal authorizing the construction of the JAI Project. During permit negotiations the alignment of Alternative 2B was further modified to avoid and minimize impacts to wetlands, particularly emergent wetlands, and to reduce the extent of rock sidecast areas. The permit decision document identified Alternative 2B as the Least Environmentally Damaging Practicable Alternative (LEDPA), as required by the Section 404(b)(1) Guidelines (see 40 C.F.R. § 230.10(a)).

In order to rate wetlands and waterbodies for the purpose of determining appropriate compensatory mitigation ratios that comply with current regulations, a qualitative assessment was performed to classify wetlands and waterbodies into the following four categories: Category I, II, III, and IV. These categories are generally defined as:

Category I – High-functioning wetlands

These wetlands are recognized as regionally or nationally important for the level of functions they perform. Generally, these wetlands are less common. These are wetlands that: 1) provide a life-support function for threatened or endangered species that has been documented; 2) represent a high-quality example of a rare wetland type; 3) are rare within a given region; or 4) are undisturbed and contain ecological attributes that are impossible or difficult to replace within a human lifetime, if at all. The position of the wetland in the landscape plays an integral role in overall watershed health.

Category II – High- to moderate-functioning wetlands

These wetlands are those that: 1) provide habitat for very sensitive or important wildlife or plants; 2) are either difficult to replace (such as bogs); or 3) provide very high functions, particularly for wildlife habitat. These wetlands occur more commonly than Category I wetlands, but still need a high level of protection.

Category III – Moderate- to low-functioning wetlands

These wetlands can provide important functions and values. They can be important for a variety of wildlife species and can provide watershed protection functions depending on where they are located. Generally these wetlands will be smaller and/or less diverse in the landscape than Category II wetlands. These wetlands usually have experienced some form of degradation, but to a lesser degree than Category IV wetlands.

Category IV – Degraded and low-functioning wetlands

These wetlands are the smallest, most isolated, have the least diverse vegetation, may contain invasive species, and have been degraded by humankind. These are wetlands that we should be able to replace and, in some cases, be able to improve from a habitat standpoint. These wetlands can provide important habitat functions and values, and should to some degree be protected depending on where they are located in the watershed and the condition of that watershed (urban vs. rural). In some areas, these wetlands may be providing groundwater recharge and water pollution prevention functions and, therefore, may be more important from a local point of view.

Categorization Results

Category I – High-functioning wetlands

Category I represent wetlands and waterbodies that are less common or provide life-support functions for important species. The waters of Berners Bay and the flooded wetlands adjacent to Berners Bay meet this criterion. Berners Bay has routinely been protected and managed as an important aquatic resource due to the seasonal concentrations of foraging Steller sea lions (*Eumetopias jubatus*), humpback whales (*Megaptera novaeangliae*), harbor seals (*Phoca vitulina*), and other marine mammals, and regionally important concentrations of spawning and rearing forage fish, including the remaining spawning habitat for the Lynn Canal Pacific Herring (*Clupea pallasii*) population (National Marine Fisheries Service, 2005). For this project, the waters of Berners Bay, along with any adjacent wetlands with a flooded water regime, are rated as Category I. Flooded water regimes in the project area include aquatic resources with the following National Wetland Inventory (NWI) code modifiers:

- A – Temporarily Flooded
- N – Regularly Flooded – Tidal
- P – Irregularly Flooded – Tidal
- R – Seasonally Flooded – Tidal
- S – Temporarily Flooded – Tidal

Table 1 lists the 9 individual wetland and waterbody polygons within the project area rated Category I. As is show in the attached map set, none of the Category I aquatic resources will be impacted by the proposed JAI Project.

Table 1. Proposed Category I Wetlands and Waterbodies

Wetland IDs	Map #	NWI Code	Description
735-4	6	PFO1A/PSS1A	Palustrine broad-leaved deciduous forest/scrub-shrub, temporarily flooded
680-2	5	PFO1A	Palustrine broad-leaved deciduous forest, temporarily flooded
735-2	6	PEM1S	Palustrine persistent emergent vegetation, temporarily flooded - tidal
680-3	5	PSS1S/PFL1S	Palustrine deciduous scrub-shrub/river flats, temporarily flooded - tidal
690-2	5	PSS1R	Palustrine deciduous scrub-shrub, seasonally flooded - tidal
735-1, 900-1	6 7	E2EM1P	Estuarine intertidal persistent emergent vegetation, irregularly flooded
370-T	3-7	E2RS2N	Estuarine intertidal rocky shores with rubble substrate, regularly flooded
900-T	7	E2BB1N	Estuarine intertidal beach bar with cobble-gravel substrate, regularly flooded

Category II – High- to moderate- functioning wetlands

Category II wetlands also provide high functions, however they are more common than Category I wetlands. In the project area, this refers to wetlands that provide support functions to the rivers flowing into Berners Bay and emergent wetlands or wetlands with an emergent vegetation component.

Berners Bay is fed primarily by four rivers: the Antler River, Berners River, Lace River, and Slate Creek. Wetlands in these watersheds are important for thermoregulation of water temperatures, carbon export to Berners Bay, and supporting fish and wildlife habitat. All palustrine forested and emergent wetlands within these watersheds in the project area are rated Category II.

During agency coordination for the original USACE Section 404/10 permitting process in 2008, resource agencies emphasized the importance of emergent wetlands within the project area. Emergent wetlands are less extensive in Southeast Alaska when compared to the more abundant forested wetlands and unvegetated shorelines. Palustrine and emergent wetlands create edge habitat and diverse habitat structures important to many wildlife species, including songbirds and small mammals. Therefore all wetland types not included in Category I that are classified as emergent or have an emergent component are rated Category II.

Table 2 lists the 39 wetland and waterbody polygons within the project area rated Category II.

Table 2. Proposed Category II Wetlands and Waterbodies

Wetland ID	Map #	NWI Code	Description
Wetlands within the Antler River, Berners River, Lace River or Slate Creek watersheds			
800-1, 800-3, 830-1, 895-1, 910-2, 955-2 (within Slate Creek watershed)	6 6 6 7 7 7	PFO4B	Palustrine needle-leaved evergreen forest, saturated
800-2, 800-4, 830-2	6 6 6	PEM1B	Palustrine persistent emergent vegetation, saturated
920-1, 950-1 (within Slate Creek watershed)	7 7	PEM1B/PSS4B	Palustrine persistent emergent vegetation and needle-leaved evergreen scrub-shrub, saturated
Emergent wetlands or wetlands with an emergent component			
420-1, 440-1, 955-1, 950-1 (outside Slate Creek watershed), 975-1, 1010-1, 1040-1, 1110-1, 1135-1, 1150-1, 1260-2	3 4 7 7 7 7 8 8 8 8 9	PEM1B/PSS4B	Palustrine persistent emergent vegetation and needle-leaved evergreen scrub-shrub, saturated
325-1	3	PEM1B/PSS1B	Palustrine persistent emergent vegetation and broad-leaved deciduous scrub-shrub, saturated
330-2	3	PEM1B/PFO4B	Palustrine persistent emergent vegetation and needle-leaved evergreen forest, saturated
270-1, 275-1, 1125-1, 1185-2, 3560-1	2 2 8 9 NA	PEM1B	Palustrine persistent emergent vegetation, saturated
990-1	7	PSS4B/PEM1B	Palustrine needle-leaved evergreen scrub-shrub and persistent emergent vegetation, saturated
1015-1, 1020-1, 1070-1	8 8 8	PFO4B/PEM1B	Palustrine needle-leaved evergreen forest and persistent emergent vegetation, saturated
2590-1, 2630-1, 2735-1, 2750-1	18 19 19 19	E2EM1N	Estuarine intertidal persistent emergent vegetation, regularly flooded
2670-1, 2690-1	19 19	E2EM1P	Estuarine intertidal persistent emergent vegetation, irregularly flooded

Category III – Moderate- to low- functioning wetlands

The remaining wetlands and waterbodies not rated as Category I or Category II are rated Category III. Category III wetlands and waterbodies are comprised of forested wetlands without an emergent component and rocky or unconsolidated shorelines. These wetlands and waterbodies are common in Southeast Alaska and the functions performed by these areas are similar to many upland habitats in the region.

These Category III forested and scrub-shrub wetlands are the most common freshwater wetland types in Southeast Alaska. NWI mapping for the area between Juneau and Skagway was analyzed between Lynn Canal and the Canadian border. For this area, forested and scrub shrub wetlands covered over 28,000 acres or approximately 69% of all palustrine wetlands in the region (USFWS, 2014; Figure 1). Generally these areas are effective at recharging groundwater and for supporting the lateral flow of groundwater. These functions are also common in widespread upland forested vegetation types within the region. These wetland types typically contribute minimally to wildlife and fish habitat due to their homogeneity and the steepness of the terrain. During the 2008 permitting process, the USACE noted in their ROD that palustrine forested wetlands are typical for Southeast Alaska and that forested wetlands not adjacent to anadromous fish streams are of low value (POA-2006-597-2).

NWI mapping was also evaluated to compare estuarine and marine shoreline types. Of the approximately 8,900 acres of shoreline, 6,300 of these acres were characterized by rocky or unconsolidated shore (USFWS, 2014; Figure 2). These rocky and unconsolidated shorelines do not meet the USACE definition of a special aquatic site and perform most functions assessed to a low degree. However, during times of tidal inundation they may perform functions that support fish habitat.

Table 3 lists the 36 wetland and waterbody polygons within the project area rated Category III.

Figures 1 and 2. Palustrine and Estuarine NWI Types between Juneau and Skagway (USFWS, 2014)

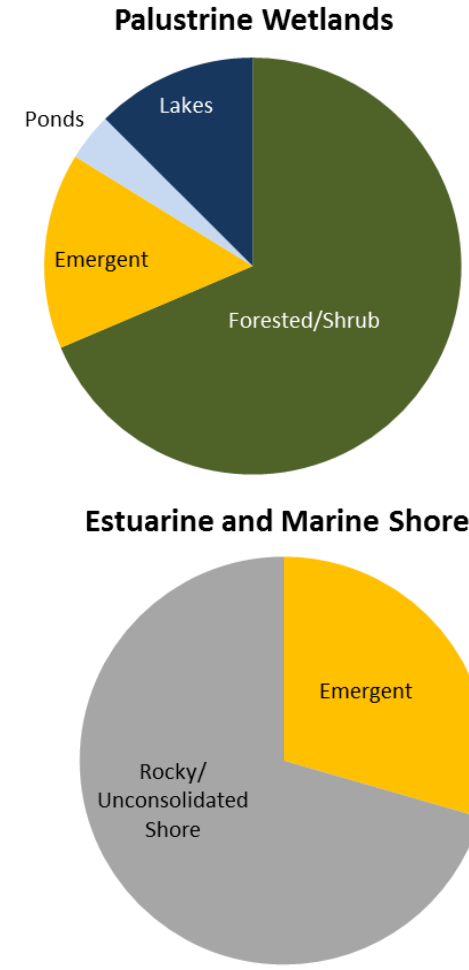

Table 3. Proposed Category III Wetlands and Waterbodies

Wetland IDs	Map #	NWI Code	Description
75+08, 79+41, 93+59, 107+39, 116+94, 165+92, 167+41, 172+39, 178+91, 185+40, 191+50, 194+00, 202+00, 205+26, 265-1 415-1, 955-2 (outside Slate Creek watershed), 1260-1, 1275-1, 1360-1, 1375-1	1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 3 7-8 9 9 10 10	PFO4B	Palustrine needle-leaved evergreen forest, saturated
340-1	3	PSS1B/PFO4B	Palustrine broad-leaved deciduous scrub-shrub and needle-leaved evergreen forest, saturated
330-1, 1185-1, 1220-1	3 8 9	PFO4B/PSS1B	Palustrine needle-leaved evergreen forest and broad-leaved deciduous scrub-shrub, saturated
3565-1	NA	PSS4B	Palustrine needle-leaved evergreen scrub-shrub, saturated
1300-1, 1380-1	10 10	E2RS2N/E2US1N	Estuarine intertidal rocky shores with rubble substrate and unconsolidated shore with cobble-gravel substrate, regularly flooded
1480-1, 2745-T, 2765-1, 2800-1, 2985-1, 3000-1, 3300-1, 3580-1	11 19 19 NA NA NA NA NA	E2RS2N	Estuarine intertidal rocky shores with rubble substrate, regularly flooded
2620-1	18-19	E1UBL	Estuarine subtidal with an unconsolidated bottom

Category IV – Degraded- to low- functioning wetlands

Category IV wetlands and waterbodies provide limited functions and likely have been degraded by human influence. No wetlands and waters are proposed for a Category IV designation.

Proposed Mitigation Statement

Federal regulations and guidelines associated with Section 404 of the Clean Water Act require that project proponents eliminate or reduce adverse impacts on wetlands and waters of the U.S. by taking certain specific steps during project planning (33 USC 1344, 33 CFR Part 323, 40 CFR Part 230, 23 CFR 777). These steps are as follows (emphasis added):

1. Design the project to *avoid adverse impacts*.
2. Incorporate measures to *minimize adverse impacts*.
3. Plan to *restore sites* that must be temporarily adversely affected by the project.
4. *Compensate for unavoidable adverse impacts* through preservation, restoration, or creation of wetlands.

Each of the steps listed above is to be implemented to the extent practicable before moving on to the next step. Together, these steps mitigate the overall adverse effects of a project to wetlands and waters of the U.S.

The USACE and the Environmental Protection Agency issued the Final Rule on Compensatory Mitigation on April 10, 2008. The final rule establishes criteria for the use of appropriate and practicable compensatory mitigation for unavoidable functional losses of aquatic resources issued by USACE permits (33 CFR Part 332). The final rule requires functional assessments of wetlands and waterbodies, mitigation ratios greater than one-to-one, and a preference scale of compensatory mitigation alternatives. In order of preference, mitigation banks approved by the USACE are preferable for offsetting unavoidable impacts to aquatic resources, followed by in-lieu fee (ILF) programs, and then followed by permittee-responsible mitigation. Currently, there are no mitigation banks with a service area that encompasses the JAI Project. Therefore, an ILF program is considered the preferred, practicable option for satisfying the regulations of the 2008 Mitigation Rule. Under this scenario, DOT&PF would purchase credits for the JAI Project from an ILF program serving Southeast Alaska.

In accordance with 33 CFR Part 325.1(d)(7), "For activities involving discharges of dredged or fill material into waters of the U.S., the application must include a statement describing how impacts to waters of the United States are to be avoided and minimized. The application must also include either a statement describing how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts." Measures to avoid, minimize, and mitigate are described in the following sections.

Avoidance and Minimization Measures

Suitable upland-only build alternatives cannot be defined because of the length and landscape complexity of the JAI Project area. The proposed alternative crosses several large rivers, numerous wetland complexes, and many unnamed streams. Total avoidance of wetlands with this project is unachievable. Various project alignments have been adjusted several times over the course of the JAI Projects initial environmental and preliminary engineering studies. In 2008, a Section 404/10 USACE permit was issued that authorized the construction of Alternative 2B. The USACE Record of Decision and Permit Evaluation for POA-2006-597-2, Berners Bay/Lynn Canal, analyzed a suite of project alternatives and determined that Alternative 2B was the

LEDPA confirming that the project properly avoided and minimized impacts to wetlands, marine areas, wildlife, and cultural resources to the maximum extent practicable.

Under the current design concept for Alternative 2B, all Category I wetlands, palustrine emergent wetlands, and estuarine emergent have been avoided. Furthermore the need for deepwater disposal has been eliminated. Potential impacts to forested wetlands and intertidal areas have been further avoided and minimized by alignment changes, extensions of bridges, and construction using the minimum-width fill footprint necessary. This has resulted in a footprint reduction of 14.5 acres over what was originally authorized by USACE (Table 4). Within wetlands and other sensitive areas, the roadway is designed with a low-profile embankment to limit embankment heights and side slopes so that the fill footprint is minimized. This height may be different based upon location and underlying substrate. The overall profile designed for this project minimized embankment height as much as possible while still providing adequate clearance for stream crossings. Whenever possible the embankment profile follows the profile of the original ground and uses the minimum necessary embankment material. Culverts are proposed in appropriate locations to maintain natural flow patterns for surface water, and roadside swales are designed to keep surface water within the natural drainage basins.

All known anadromous fish streams are crossed by bridges to avoid fill in streams and adjacent riparian habitat, where practicable. A number of parameters were used in determining the most appropriate structures for each stream crossing. Adjacent riparian wetlands were preserved to the extent practicable – weighed in part with other issues of logistics (abutment placement, span length, and locations of piers), cost, and approach curvature and gradient. Bridges are considerably more expensive than any other project feature. For that reason, span lengths had to be evaluated both individually and within context of the total overall project cost. Each crossing was rigorously evaluated by project scientists and engineers to determine the longest span(s) that could be used that avoids open water, preserves riparian habitats, considers overall project cost, and accounts for logistical concerns. Anadromous fish streams that can be crossed with 130-foot or shorter bridges would not have any structure or fill in the stream channel. To reduce impacts to riparian wetlands, the Lace and Antler rivers both have 50-foot bridge extensions on each side, and an additional 100-foot section has been added to the north side of the Katzehin River bridge. During final design, DOT&PF will investigate additional measures to reduce impacts, including whether additional alignment changes can be made.

During construction, slope limits in wetlands areas would be separately identified to ensure that workers are aware of wetlands and the need to avoid impacts beyond the slope and clearing limits. Construction camps, staging sites, borrow pits, and waste areas would be located in upland areas and stabilized during and after use to avoid water quality impacts to aquatic resources. The construction contractor would be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control Plan that describes the Best Management Practices (BMPs) to be used to minimize water quality impacts. The SWPPP would include procedures for locating and installing specific erosion control measures (e.g., silt fences, straw waddles, etc.), sediment basins, and installation of temporary erosion controls such as mulching and hydroseeding. Construction equipment would be steam cleaned prior to use on the project to reduce the potential for introducing invasive species.

Secondary impacts from the proposed JAI project are expected to be minimal. Careful examination of existing fill embankments along the Glacier Highway within nearby wetland areas was conducted to determine how upslope/downslope wetland would react to a similar linear development. Glacier Highway embankment within wetlands have wetland cross drainage culverts installed within the embankment and none of the wetlands adjacent to the crossings demonstrate a significant change in wetland type or hydrologic regime. The JAI Project would also be a DOT&PF-constructed road using similar construction techniques.

Table 4. Reduction of Wetland Impacts Since 2008

2006 Alternative 2B as Permitted under POA-2006-597-2	Current Alternative 2B
62 acres of wetland fill	60.7 acres of wetland fill
0.2 acre of estuarine emergent wetland fill	No emergent wetland fill
32 acres of intertidal and subtidal fill	32.1 acres of intertidal and subtidal fill
14.8 acres of deepwater rock disposal	No deepwater rock disposal
1.3 acres of channel work	2.9 acres of channel work*
4.4 acres of intertidal and subtidal dredging	4.4 acres of dredging intertidal and subtidal

*This increase is the result of additional fill required to prevent culvert failures, and the inclusion of additional culverts resulting from shifting the alignment uphill to avoid geotechnical concerns and bald eagle nests.

Compensation for Unavoidable Impacts

There are no mitigation banks with targeted mitigation projects or lands within the vicinity of the JAI Project. Therefore, using an ILF program to mitigate for unavoidable project impacts to aquatic resources is the preferred option for DOT&PF.

Of the 92.8 wetland and waterbody acres unavoidably impacted by the project, 60.7 acres are freshwater wetlands and approximately 32.1 are estuarine and marine shores (Table 5). Impacts of the project will be limited to Category II and III wetland and waterbodies. Locations of the impacted aquatic resources are shown on the attached map set. The proposed compensatory mitigation ratios included in Table 6 comply with the 2008 Final Rule on Compensatory Mitigation. These ratios also align with mitigation ratios required by the USACE for other projects in Southeast Alaska, e.g., the Whitman Lake Hydroelectric Project in Ketchikan, the Skagway Gateway Intermodal Project, Glacier Highway Extension Project, and the Statter Harbor Improvements Project in Juneau.

As part of the 2008 USACE permit (POA-2006-597-2), DOT&PF committed to paying $780,000 as ILF to offset for the loss of 32.1 acres of estuarine and marine shores. Through 2014, DOT&PF has paid $324,000 (2006 dollars) as mitigation for anticipated estuarine and marine shore impacts. This money was used to construct two artificial reefs at Yankee Cove in cooperation with the National Marine Fisheries Service. In a letter to FHWA from the USACE on February 21, 2014, the USACE requested proposed mitigation in accordance with the 2008 Final Rule on Compensatory Mitigation.

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Table 5. Aquatic Resource Impacts

Aquatic Resource Type	Category	Impacted	Map #	NWI Code	Acreage of Impact
Palustrine	II	800-1	6	PFO4B	0.43
Palustrine	II	895-1	7	PFO4B	4.91
Palustrine	II	910-2	7	PFO4B	0.88
Palustrine	II	955-2	7	PFO4B	7.31
				Palustrine Category II Aquatic Resource Total	***13.53***
Palustrine	III	75+08	1	PFO4B	0.03
Palustrine	III	79+41	1	PFO4B	0.04
Palustrine	III	107+39	1	PFO4B	0.11
Palustrine	III	116+94	1-2	PFO4B	0.29
Palustrine	III	165+92	2	PFO4B	<0.01
Palustrine	III	167+41	2	PFO4B	0.05
Palustrine	III	172+39	2	PFO4B	0.01
Palustrine	III	178+91	2	PFO4B	<0.01
Palustrine	III	185+40	2	PFO4B	<0.01
Palustrine	III	191+50	2	PFO4B	<0.01
Palustrine	III	194+00	2	PFO4B	0.01
Palustrine	III	202+00	2	PFO4B	<0.01
Palustrine	III	205+26	2	PFO4B	0.04
Palustrine	III	340-1	3	PSS1B/PFO4B	0.74
Palustrine	III	415-2	3	PFO4B	4.01
Palustrine	III	955-2	7-8	PFO4B	25.91
Palustrine	III	1185-1	8-9	PFO4B/PSS1B	9.86
Palustrine	III	1220-1	9	PFO4B/PSS1B	1.81
Palustrine	III	1260-1	9	PFO4B/PSS4B	1.62
Palustrine	III	1275-1	9	PFO4B	1.07
Palustrine	III	1360-1	10	PFO4B	0.96
Palustrine	III	1375-1	10	PFO4B	0.60
				Palustrine Category III Aquatic Resource Total	***47.16***
Estuarine and Marine Shores	III	1454+15	11	E2RS2N/E2US1N	0.01
Estuarine and Marine Shores	III	EIT-36	11	E2RS2N/E2US1N	2.92
Estuarine and Marine Shores	III	EIT-35	11	E2RS2N/E2US1N	0.37
Estuarine and Marine Shores	III	EIT-34	11	E2RS2N/E2US1N	0.03
Estuarine and Marine Shores	III	EIT-24 & STN-3	12-13	E2RS2N/E2US1N	3.48
Estuarine and Marine Shores	III	EIT-22	13	E2RS2N/E2US1N	0.02
Estuarine and Marine Shores	III	EIT-21	13, 18	E2RS2N/E2US1N	7.03
Estuarine and Marine Shores	III	STN-6-8	15	E2RS2N/E2US1N	7.22
Estuarine and Marine Shores	III	EIT-14	18	E2RS2N/E2US1N	0.63
Estuarine and Marine Shores	III	EIT-13	18-19	E1UBL	3.15
Estuarine and Marine Shores	III	KATZ1-4	19	E2RS2N/E2US1N	7.19
				Estuarine and Marine Shores Category III Total	***32.05***
				Aquatic Resource Total	***92.74***

The DOT&PF intends to coordinate with the USACE to develop a Compensatory Mitigation Plan that would outline the twelve elements required by the Final Rule for permittee-responsible mitigation projects. This process will determine the credits from the already completed Yankee Cove mitigation project. In addition, the area created from the riprap breakwater for the Katzehin Ferry Terminal also provides an opportunity for permittee-responsible aquatic resource enhancement that that may be included in the Compensatory Mitigation Plan. Calculations of credits from the two potential permittee-responsible mitigation projects, as well as the amount of credits to be purchased from an ILF provider will be detailed in the Compensatory Mitigation Plan approved by the USACE during the Section 404/10 permitting process. The Compensatory Mitigation Plan will use the mitigation ratios outlined in Table 6 to offset the direct loss of 92.8 acres of wetlands and waterbodies associated with the development of the JAI Project

Table 6. Proposed Compensatory Mitigation Ratios

Category	NWI Type	Water of the U.S. Type	Impact (acres)	Proposed Compensatory Mitigation Ratio	ILF Mitigation Credits
II	Palustrine Wetland	Special Aquatic Site	13.5	2:1	27.0
III	Palustrine Wetland	Special Aquatic Site	47.2	1.5:1	70.8
III	Marine Area	Water of the U.S.	32.1	1.5:1	48.2
		Totals	***92.8***		***146.0***

No compensatory mitigation is proposed for the 4.4 acres of dredging associated with the Katzehin Ferry Terminal. The marine areas would return to functioning intertidal areas following the dredging activities but would be lowered in elevation over the 4.4-acre area by an average of 5.6 feet. Dredging would not substantially alter the existing habitat or the functions and values currently performed by the area.

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Juneau Access Improvements

Attachment 3 Map Set

Map 1 of 19

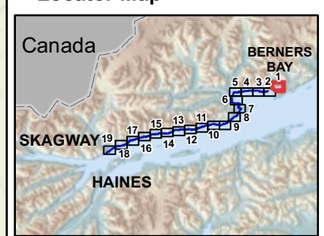
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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Juneau Access Improvements

Attachment 3 Map Set

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PFO4B 116+94
PFO4B 107+39
PFO4B 116+94
PFO4B 107+39
PFO4B 116+94
PFO4B 116+94
PFO4B 116+94
PFO4B 165+92
PFO4B 167+41
PFO4B 172+39
PFO4B 178+91
PFO4B 185+40
PFO4B 191+50
PFO4B 194+00
PFO4B 194+00
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PFO4B 205+26
202+65
250+00
PEM1B 275-1
PEM1B 270-1
PFO4B 265-1
MATCHLINE - PAGE 1
MATCHLINE - PAGE 2
MATCHLINE - PAGE 3
MATCHLINE - PAGE 2
ECHO COVE
LYNN CANAL

Aquatic Resource Categories

- Category I
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- Category III

Fill Footprint Impacts

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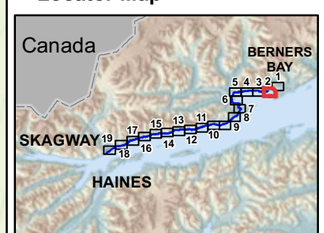
Locator Map



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Juneau Access Improvements

Attachment 3 Map Set

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Aquatic Resource Categories

- Category I
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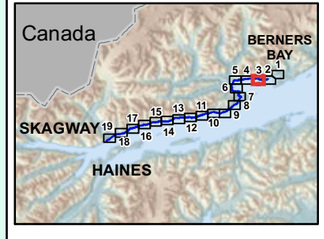
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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Juneau Access Improvements

Attachment 3 Map Set

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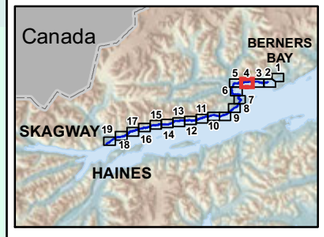
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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Juneau Access Improvements

Attachment 3 Map Set

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Aquatic Resource Categories

- Category I
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- Category III

Fill Footprint Impacts

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- Category III Aquatic Resources
- Uplands

Areas within 100' of the centerline were determined to be upland in the 2006 field effort. The exact location of wetland boundaries north and south are unknown.

UNNAMED CR

R3OWH
600-1

600+00

550+00

PF01A
680-2

PSS1S/PFL1S
680-3

650+00

ANTLER RIVER

PF01A
680-2

E2EM1P

R1UBV/R1FLR
690-1

BERNERS BAY

PSS1R

R1UBV/R1FLR
690-1

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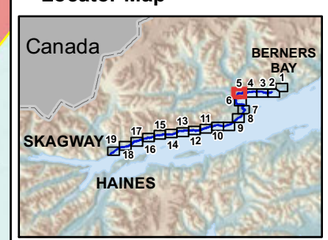
MATCHLINE - PAGE 4

Locator Map



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PSS1R

R1UBV/R1FLR
690-1

PFO1A/PSS1A
735-4

700+00

PEM1S
735-2

Area delineated during
2006 field effort

R3UBH

E2EM1P
735-1

BERNERS BAY

LACE RIVER

750+00

PFO4B
800-1

PEM1B
800-2

PFO4B
800-3

PEM1B
800-4

800+00

PFO4B
830-1

PEM1B
830-2

850+00

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Juneau Access Improvements

Attachment 3 Map Set

Map 6 of 19

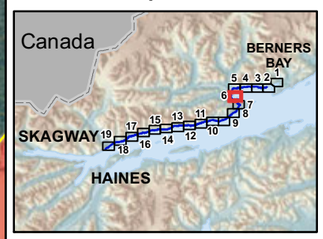
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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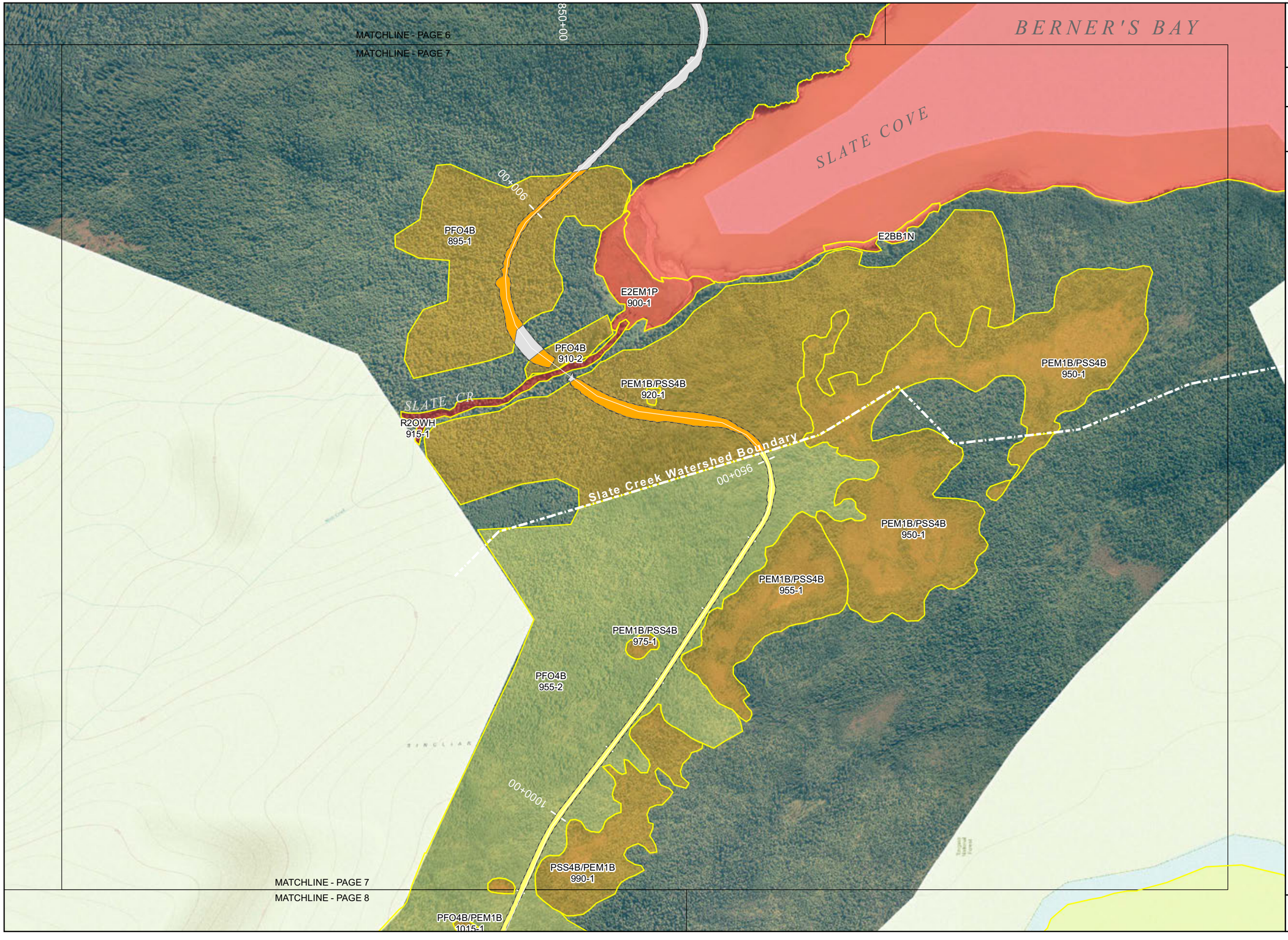

Juneau Access Improvements

Attachment 3 Map Set

Map 7 of 19

Aquatic Resource Categories

- Category I
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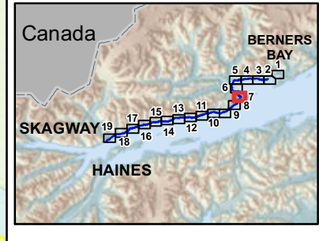
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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PSS4B/PEM1B
990-1

PFO4B/PEM1B
1015-1

PFO4B/PEM1B
1020-1

PEM1B/PSS4B
1040-1

1050+00

PFO4B
955-2

PFO4B/PEM1B
1070-1

1100+00

PEM1B/PSS4B
1110-1

PEM1B
1125-1

PEM1B/PSS4B
1135-1

1150+00

PEM1B/PSS4B
1150-1

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Juneau Access Improvements

Attachment 3 Map Set

Map 8 of 19

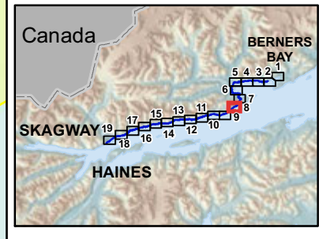
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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Aquatic Resource Categories

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- Category III

Fill Footprint Impacts

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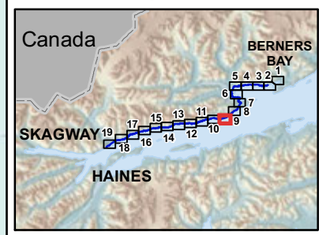
- Category III Aquatic Resources
- Uplands

Locator Map



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Juneau Access Improvements

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Map 10 of 19

PFO4B
1375-1

PFO4B
1360-1

SHERMAN CR

1400+00

1350+00

1300+00

1450+00

COMET

LYNN CANAL

SHERMAN POINT

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Aquatic Resource Categories

- Category I
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- Category III

Fill Footprint Impacts

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- Category III Aquatic Resources
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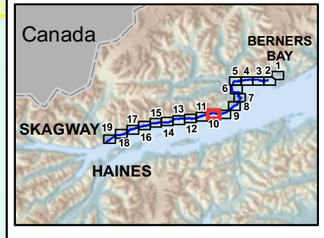
Locator Map



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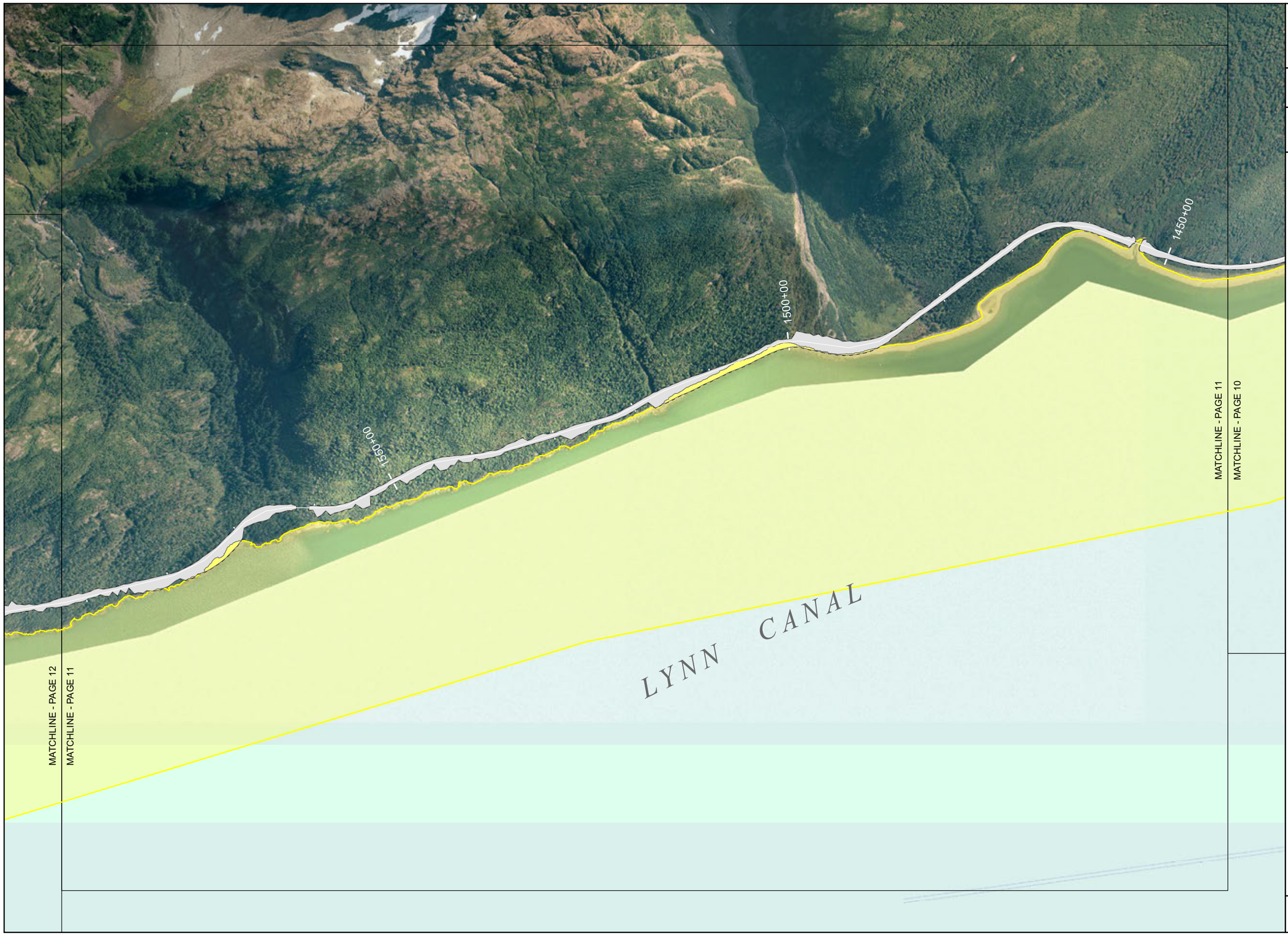

Juneau Access Improvements

Attachment 3 Map Set

Map 11 of 19

Aquatic Resource Categories

- Category I
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- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
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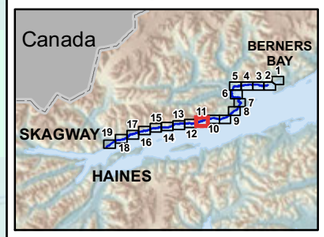
- Category III Aquatic Resources
- Uplands

Locator Map



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Juneau Access Improvements

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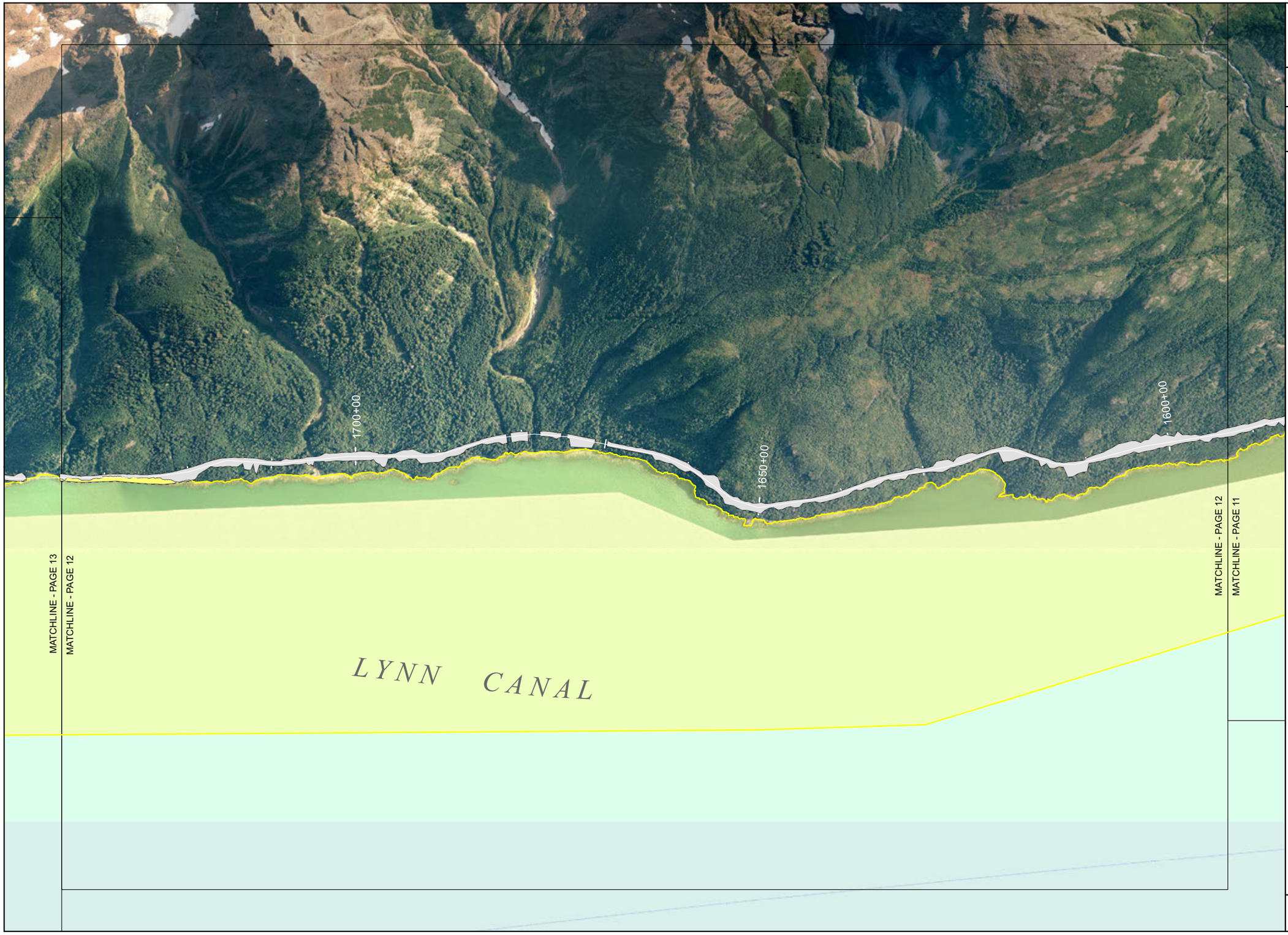

Aquatic Resource Categories

- Category I
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- Category III

Fill Footprint Impacts

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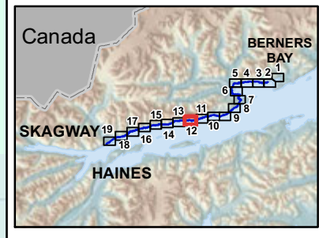
- Category III Aquatic Resources
- Uplands

Locator Map



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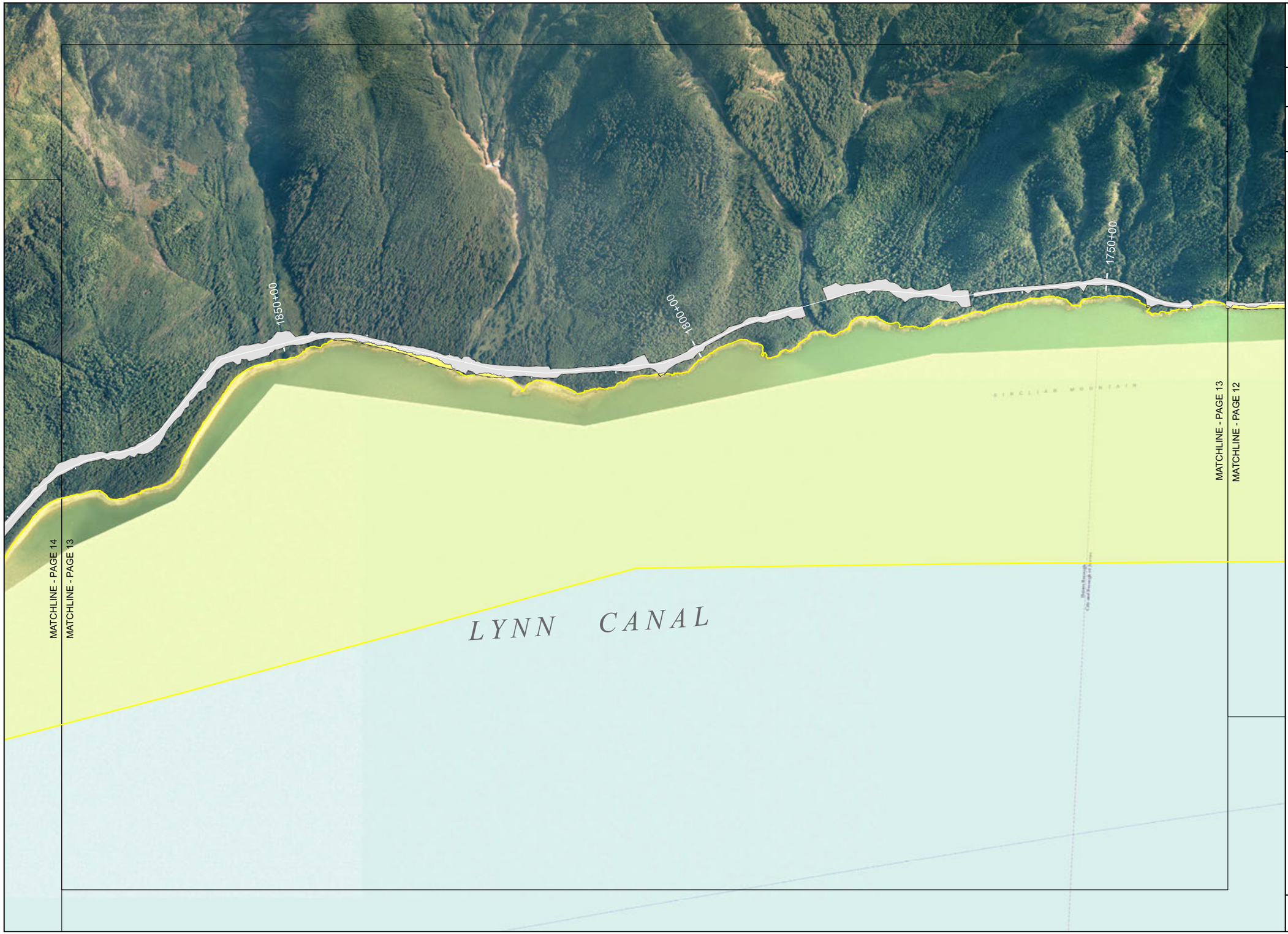


Juneau Access Improvements

Attachment 3 Map Set

Map 13 of 19

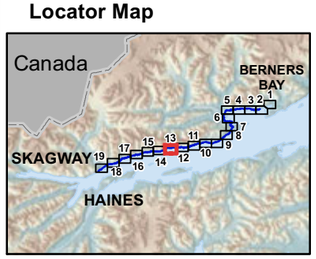
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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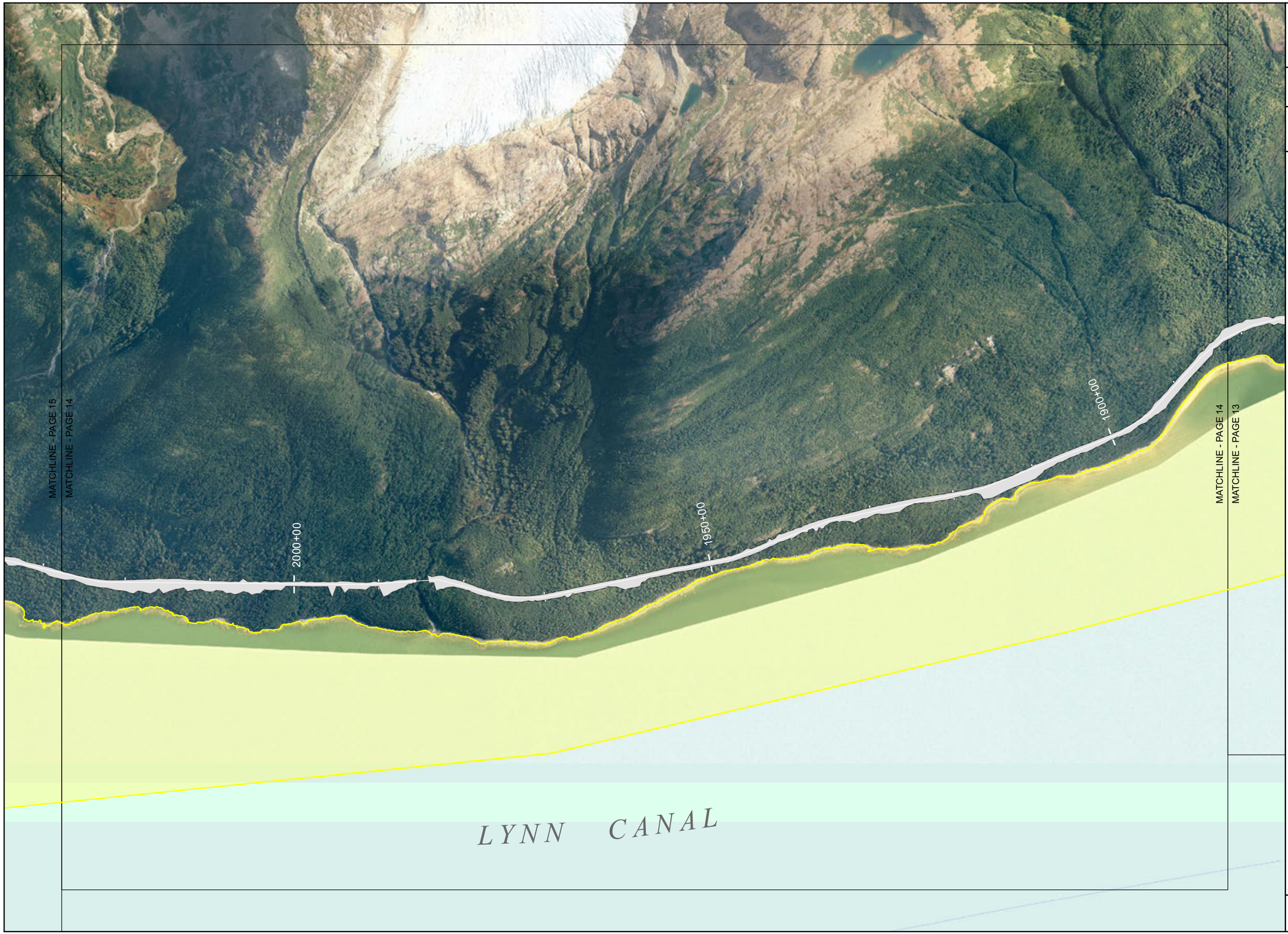


Juneau Access Improvements

Attachment 3 Map Set

Map 14 of 19

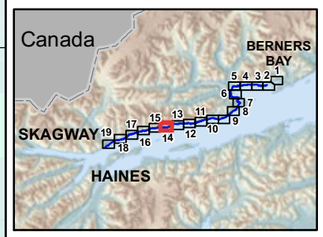
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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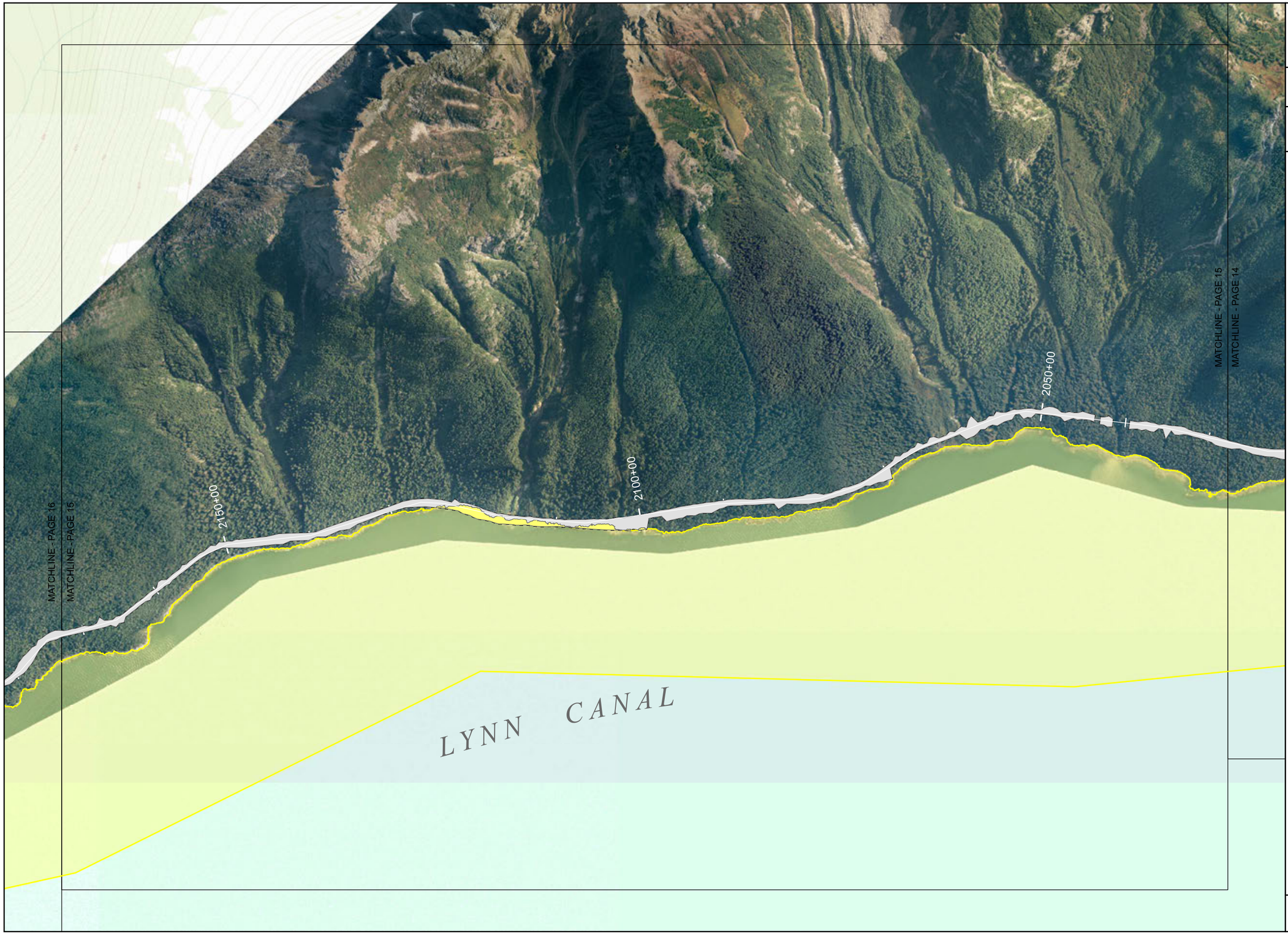
Juneau Access Improvements

Attachment 3 Map Set

Map 15 of 19



Aquatic Resource Categories

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Fill Footprint Impacts

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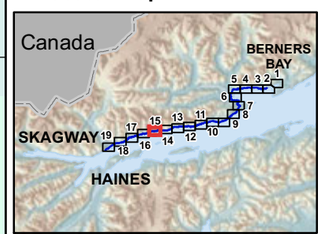
- Uplands

Locator Map



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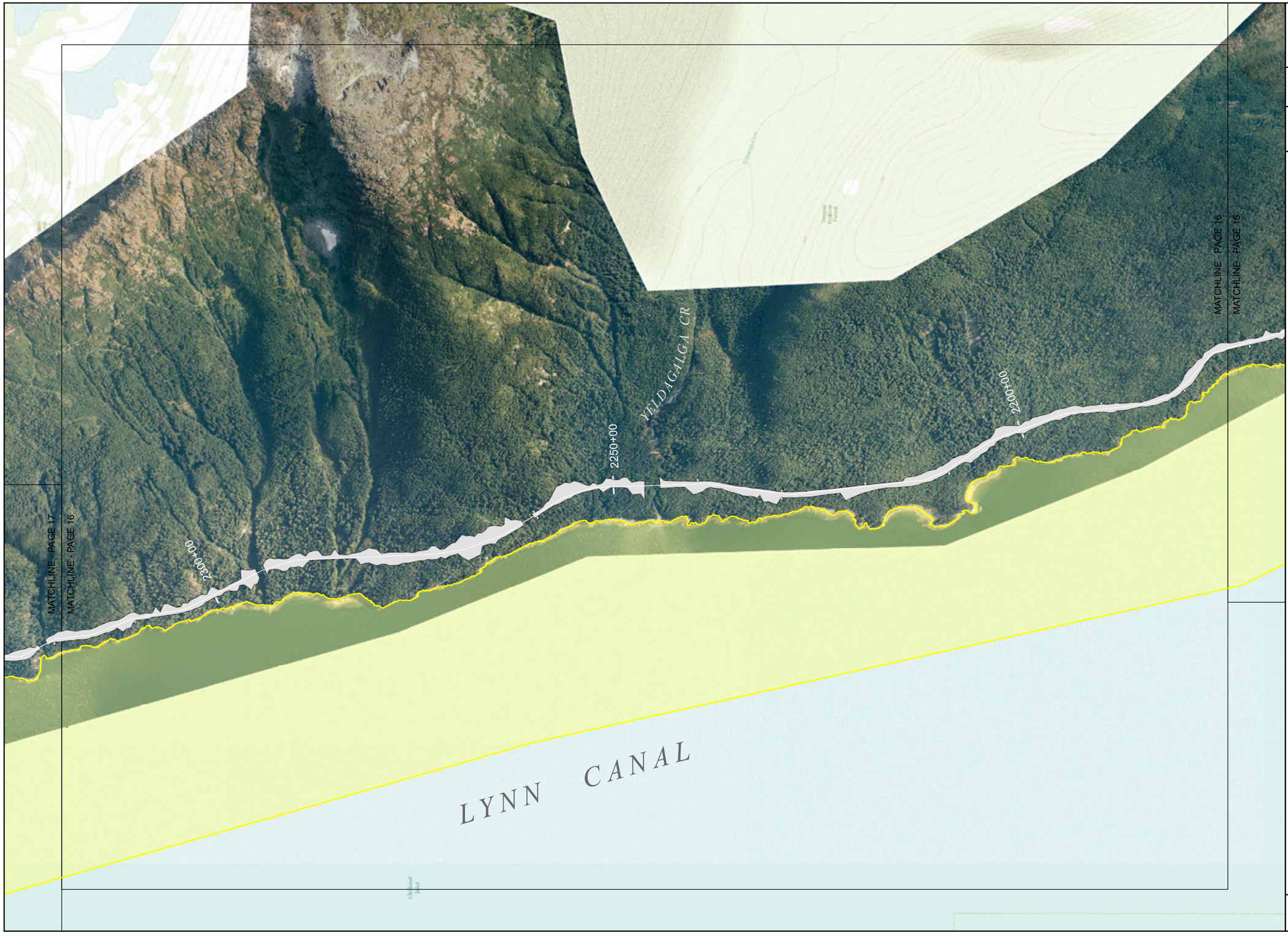

Juneau Access Improvements

Attachment 3 Map Set

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Aquatic Resource Categories

- Category I
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- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
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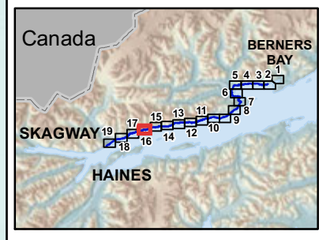
- Category III Aquatic Resources
- Uplands

Locator Map



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Juneau Access Improvements

Attachment 3 Map Set

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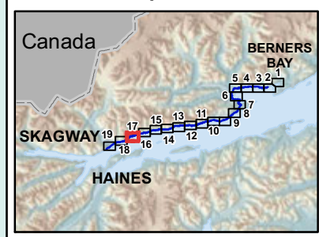
Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
- Category II Aquatic Resources
- Category III Aquatic Resources
- Uplands

Locator Map



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Juneau Access Improvements

Attachment 3 Map Set

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Aquatic Resource Categories

- Category I
- Category II
- Category III

Fill Footprint Impacts

- Category I Aquatic Resources
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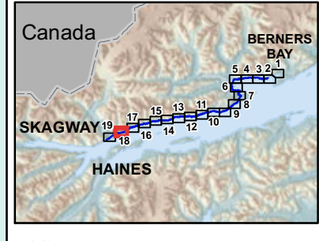
- Category III Aquatic Resources
- Uplands

Locator Map



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KATZEHIN RIVER

LYNN CANAL

2650+00

2700+00

2750+00

2771+86

MATCHLINE - PAGE 19

MATCHLINE - PAGE 18

E1UBL
2620-1

E2EM1N
2630-1

E2EM1P
2670-1

E2EM1P
2690-1

E2EM1N
2735-1

E2RS2N
2765-1

E2EM1N
2750-1

Dredged
Basin

Juneau Access Improvements

Attachment 3 Map Set

Map 19 of 19

Aquatic Resource Categories

- Category I
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Fill Footprint Impacts

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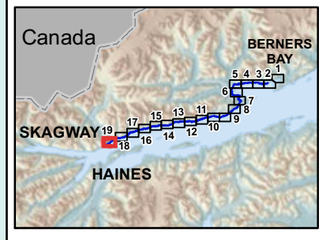
Locator Map



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Attachment 4

USACE Permit Application

Draft Section 404(b)(1) Analysis

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Draft Section 404(b)(1) Analysis

Prepared for:

Alaska Department of Transportation
& Public Facilities
6860 Glacier Highway
Juneau, Alaska 99801-7999

Federal Project Number: STP-000S(131)
State Project Number: 71100

Prepared by:
HDR, Inc.
2525 C Street, Suite 305
Anchorage, AK 99503

August 2014
Rev. 10

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Table of Contents

Tables

Attachments

Acronyms and Abbreviations

ACF	Alaska Class Ferry
ADF&G	Alaska Department of Fish and Game
ADT	Average Daily Traffic
AMHS	Alaska Marine Highway System
c.y.	Cubic Yards
CFR	Code of Federal Regulations
DOT&PF	Alaska Department of Transportation and Public Facilities
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FHWA	Federal Highway Administration
FVF	Fast Vehicle Ferry
ILF	In-Lieu Fee
JAI	Juneau Access Improvements
LEDPA	Least Environmentally Damaging Practicable Alternative
MMPA	Marine Mammal Protection Act
NHS	National Highway System
NMFS	National Marine Fisheries Service
ROD	Record of Decision
USACE	U.S. Army Corps of Engineers

1. Introduction

The Alaska Department of Transportation and Public Facilities (DOT&PF) proposes the Juneau Access Improvements (JAI) Project to provide improved surface transportation with increased capacity to meet demand, provide flexibility, improve opportunity for travel, and reduce travel time between the Lynn Canal communities of Juneau, Haines, and Skagway. Because all build alternatives for the project will place fill in waters of the U.S. and special aquatic sites, it requires U.S. Army Corps of Engineers (USACE) authorization and evaluation under Subpart b [40 Code of Federal Regulations (CFR) Section 230.10(a)-(d)] of the Section 404(b)(1) Guidelines.

A Draft Environmental Impact Statement (EIS) for the JAI Project was published in June 1997 with the subsequent Final EIS published January 18, 2006. Appendix X of the Final EIS included the *Draft Section 404/10 Permit Application, Draft Section 404(b)(1) Analysis Update, and the Wetlands Finding* (DOT&PF 2006). The Federal Highway Administration's (FHWA's) *Record of Decision* (ROD) for the project was signed April 3, 2006 and identified Alternative 2B, the East Lynn Canal Highway to Katzehin Bay with ferry shuttles to Haines and Skagway, as the selected alternative.

In 2008, the USACE authorized permit POA-2006-597-2, Berners Bay/Lynn Canal under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for anticipated impacts to wetlands and waters of the U.S (USACE 2008a). The USACE Section 404/10 permit authorized the discharge of 1,735,000 cubic yards (c.y.) of fill into 110.2 acres of waters of the U.S. Along with the permit, the USACE issued a *Record of Decision and Permit Evaluation*, where the USACE 404(b)(1) analysis was presented (Attachment A; USACE 2008b). As a cooperating agency, the USACE adopted most of the *Final EIS* for the project except for Appendix X, where the USACE maintained it's mandated authority to complete an independent 404(b)(1) evaluation.

A legal challenge to the FHWA ROD was appealed to the U.S. Court of Appeals for the Ninth Circuit, and in May 2011, the three-judge panel by a 2:1 majority upheld previous court decisions that the Final EIS was not valid because the review did not include an alternative that would improve transportation using existing assets. This action by the court enjoined the USACE permit with the legal challenge and decision. As a result of that decision, DOT&PF, in cooperation with the FHWA, is preparing a Supplemental EIS for the JAI Project. The Supplemental EIS is intended to fully evaluate a stand-alone alternative (Alternative 1B) that improves marine ferry service in Lynn Canal using existing Alaska Marine Highway System (AMHS) assets.

In December 2012 during preparation of the Supplemental EIS, the Governor decided to pursue plans to build two smaller, less costly State-funded Alaska Class Ferries (ACFs) instead of one large ACF. The smaller ACFs are referred to as Day Boat ACFs. This change was made to better meet the AMHS needs in Southeast Alaska. Although this was a state action independent of the JAI project, all reasonable alternatives, including the new Alternative 1B, have been updated, as necessary, to include these changes.

This Draft *Section 404(b)(1) Analysis Update* supports the Supplemental EIS effort and updates the USACE's 404(b)(1) analysis with changes that have occurred since the 2008 permit issuance and subsequent expiration in 2013 including:

1) Evaluation of Alternatives with Day Boat ACFs.
2) Evaluation of the new Alternative 1B.
3) Additional information related to the practicability of Alternatives 3 and 3M.
4) An update to ridership forecasts based on the new travel forecast methodology being used in the 2013 *Supplemental EIS*.
5) Updated project costs.
6) Updates to wetland impacts associated with each alternative due to:
    a. Minor alignment/design revisions in response to an updated bald eagle nest survey and additional geotechnical studies
    b. Construction of the Glacier Highway Extension
    c. Relocation of the Katzehin Ferry Terminal away from an avalanche path and emergent wetlands

2. Alternatives Considered Reasonable

All alternatives were screened in fall 2003 after the Supplemental Draft EIS scoping process and again in 2005. The four evaluation criteria included; cost/technical feasibility and common sense; appropriateness and unnecessary variations; purpose and need; and environmental factors. Appendix X of the Final EIS outlines the process and describes the alternatives not considered reasonable. The minor changes that have occurred since 2005 have not changed the conclusion of what is reasonable.

The remaining reasonable alternatives that at least partially meet the evaluation criteria are discussed here:

2.1 Alternative 1. No Action (original alternative)

The No Action Alternative (Alternative 1) includes a continuation of mainline ferry service in Lynn Canal and incorporates two Day Boat ACFs. The AMHS would continue to be the National Highway System (NHS) route from Juneau to Haines and Skagway, and no new roads or ferry terminals would be built. In addition to the Day Boat ACFs, programmed improvements include improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs as well as expansion of the Haines Ferry Terminal to include a new double bow berth to accommodate the Day Boat ACFs. This alternative is based on the most likely AMHS operations in the absence of any capital improvements specific to the JAI Project.

Mainline service would include two round trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. During the summer, one Day Boat ACF would make one round trip between Auke Bay and Haines six days per week, and one would make two round-trips per day between Haines and Skagway six days per week. The Day Boat ACFs would not sail on the seventh day because a mainliner is on a similar schedule. In the winter, ferry service in Lynn Canal would be provided primarily by the Day Boat ACFs three times per week. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal.

Alternative 1 is independent of the JAI Project. Any improvements that would require the discharge of fill material into waters of the U.S. as part of Alternative 1 (only new pile and floating dock are anticipated) would be evaluated separately according to Section 404(b)(1) Guidelines. These waters of the U.S. impacts are not included in the impact acreages for all alternatives.

2.2 Alternative 1B. Enhanced Service with Existing AMHS Assets (alternative introduced in 2011)

Alternative 1B is a No Build Alternative that includes all of the components of Alternative 1, No Action, but focuses on enhancing service using existing AMHS assets without major initial capital expenditures. Similar to Alternative 1, Alternative 1B includes: a continuation of mainline ferry service in Lynn Canal; the AMHS would continue to be the NHS route from Juneau to Haines and Skagway; no new roads or ferry terminals would be built; and in addition to the Day Boat ACFs, programmed Alternative 1 improvements incorporated into this alternative include improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs as well as expansion of the Haines Ferry Terminal to include a new double bow berth to accommodate the Day Boat ACFs. Service to other communities would remain the same as the No Action Alternative. Alternative 1B keeps the *M/V Malaspina* in service after the second Day Boat ACF is brought online to provide additional capacity in Lynn Canal. Enhanced services included as part of Alternative 1B are a 20 percent reduction in fares for trips in Lynn Canal and extended hours of operations for the reservation call center.

Mainline service would include two round trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. During the summer, the *M/V Malaspina* would make one round-trip per day 7 days per week on a Skagway-Auke Bay-Skagway route, while one Day Boat ACF would make one round trip between Auke Bay and Haines 6 days per week, and one would make two round-trips per day between Haines and Skagway 6 days per week. The Day Boat ACFs would not sail on the seventh day because a mainliner would be on a similar schedule. In the winter, ferry service in Lynn Canal would be provided primarily by the Day Boat ACFs three times per week.

2.3 Alternative 2B. East Lynn Canal Highway to Katzehin, Shuttle to Haines and Skagway (original alternative as modified for the 2008 USACE ROD)

Alternative 2B would construct the East Lynn Canal Highway (50.8 –miles, including 47.9 miles of new highway and upgrade to 2.9 miles of the existing Glacier Highway) from Echo Cove around Berners Bay to a new ferry terminal 2 miles north of the Katzehin River. Ferry service would connect Katzehin to Haines and Skagway. In addition, this alternative includes modifications to the Skagway Ferry Terminal to include a new end berth and construction of a new conventional monohull ferry to operate between Haines and Skagway. Mainline ferry service would end at Auke Bay. This alternative assumes the following improvements will have been made independent of the JAI Project before Alternative 2B would come on-line: two Day Boat ACFs, improved vehicle and passenger staging areas at the Haines Ferry Terminal to optimize traffic flow on and off the Day Boat ACFs, and expansion of the Haines Ferry Terminal to include two new double bow berths.

During the summer months, one Day Boat ACF would make eight round-trips per day between Haines and Katzehin, a second Day Boat ACF would make six round-trips per day between Skagway and Katzehin, and the Haines-Skagway shuttle ferry would make two trips per day. During the winter, one Day Boat ACF would make six round-trips per day between Haines and Katzehin, and a second Day Boat ACF would make four round-trips per day between Skagway and Katzehin. The Haines-Skagway shuttle would not operate; travelers going between Haines and Skagway would travel to Katzehin and transfer ferries.

This alternative was rerouted during the 2008 permit evaluation process to avoid freshwater wetlands in between the Lace and the Antler Rivers.

Roadway Fill in Wetlands	*= 60.7 Acres*
Roadway Fill in Marine Waters	*= 22.3 Acres*
Culvert Bedding in Non-Fish Bearing Streams	*= 2.9 Acres*
Roadway Fill in the Katzehin River	*= 3.2 Acres*
Ferry Terminal and Breakwaters	*= 6.6 Acres*
Marine Dredging for Ferry Terminal	*= 4.4 Acres*
Total Waters of U.S. Impacted	*= 100.1 Acres*

2.4 Alternative 3.West Lynn Canal Highway (alternative introduced in the 2006 Final EIS)

Alternative 3 would upgrade/extend the Glacier Highway (5.2 miles including 2.3 miles of new highway and upgrade to 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay. New ferry terminals would be constructed at Sawmill Cove in Berners Bay and at William Henry Bay on the west shore of Lynn Canal and the Skagway Ferry Terminal would be modified to include a new end berth. A new 38.9-mile highway would be constructed from the William Henry Bay Ferry Terminal to Haines with a bridge across the Chilkat River/Inlet connecting into Mud Bay Road. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. Mainline ferry service would end at Auke Bay. This alternative assumes the following improvements will have been made independent of the JAI Project before Alternative 3 would come on-line: two Day Boat ACFs, improved vehicle and passenger staging areas at the Haines Ferry Terminal to optimize traffic flow on and off the Day Boat ACFs, and expansion of the Haines Ferry Terminal to include two new double bow berths.

During the summer, two Day Boat ACFs would make six round-trips per day between Sawmill Cove and William Henry Bay (total of 12 trips each direction), and the Haines-Skagway shuttle ferry would make six round-trips per day. During the winter, one Day Boat ACF would make four round-trips per day between Sawmill Cove and William Henry Bay, and the Haines-Skagway shuttle ferry would make four round-trips per day.

Fill in Wetlands	*= 26.0 Acres*
Fill in Marine Waters	*= 11.6 Acres*
Marine Dredging for Ferry Terminal	*= 1.2 Acres*
Fill in Other Waters of the U.S.	*= 0.2 Acres*
Total Waters of U.S. Impacted	*= 39.0 Acres**

**Total does not include fill from culvert bedding in non-fish bearing streams as detailed design plans have not been developed for this alternative.*

2.5 Alternative 3M. Modified Alternative 3 - West Lynn Canal Highway Alternative (alternative introduced in the 2008 USACE ROD)

This alternative incorporates a change in the operation of Alternative 3 to avoid potential impacts to endangered species and their prey in Berners Bay. This alternative would extend Glacier Highway 5.2 miles from Echo Cove to Sawmill Cove. New ferry terminals would be constructed at both Sawmill Cove, and at William Henry Bay.

Improvements would be required at the existing Auke Bay terminal. Shuttle ferries would transport vehicles between William Henry Bay and Sawmill Cove. A 38.9-mile highway would be constructed from William Henry Bay northward to Haines. The Sawmill Cove terminal in Berners

Bay would be closed for six weeks, mid April to the end of May. The improved Auke Bay terminal would be used during this time; and the ferries would shuttle between Auke Bay and William Henry Bay. A new conventional monohull shuttle would be constructed to operate between Haines and Skagway.

Fill in Wetlands	*= 26.0 Acres*
Fill in Marine Waters	*= 12.3 Acres*
Marine Dredging for Ferry Terminal	*= 1.2 Acres*
Fill in Other Waters of the U.S.	*= 0.2 Acres*
Total Waters of U.S. Impacted	*= 39.7 Acres**

**Total does not include fill from culvert bedding in non-fish-bearing streams as detailed design plans have not been developed for this alternative.*

2.6 Alternatives 4A through 4D – Marine Options (original alternatives)

All four marine alternatives would include continued mainline ferry service in Lynn Canal with a minimum of two trips per week in the summer and one per week in the winter with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. Each marine alternative includes a new conventional monohull shuttle that would make two round-trips per day between Haines and Skagway six days a week in the summer and a minimum of three round-trips per week between Haines and Skagway in the winter. The AMHS would continue to be the NHS route from Juneau to Haines and Skagway. These alternatives assume the following improvements will have been made independent of the JAI Project before the alternative comes on-line: improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs and expansion of the Haines Ferry Terminal to include new double bow berths.

2.7 Alternative 4A – Fast Vehicle Ferry Service from Auke Bay (original alternative)

Alternative 4A would construct two new fast vehicle ferries (FVFs). No new roads would be built for this alternative, and the Auke Bay Ferry Terminal would be expanded to include a new double stern berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. The *M/V Malaspina* would no longer operate as a summer day boat in Lynn Canal, and the Day Boat ACFs would no longer operate in Lynn Canal. The FVFs would make two round-trips between Auke Bay and Haines and two round-trips between Auke Bay and Skagway per day in the summer. During the winter, one FVF would make one round-trip between Auke Bay and Haines and one round-trip between Auke Bay and Skagway each day.

Total Waters of U.S. Impacted *= 0.7 Acres*

2.8 Alternative 4B – Fast Vehicle Ferry Service from Berners Bay (original alternative)

Similar to Alternative 4A, Alternative 4B would construct two new FVFs. This alternative would upgrade/extend Glacier Highway (5.2 miles, including 2.3 miles of new highway and 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay where a new ferry terminal would be constructed. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. The *M/V Malaspina* would no longer operate as a summer day boat

in Lynn Canal, and the Day Boat ACFs would no longer operate in Lynn Canal. In the summer, the FVFs would make two round-trips between Sawmill Cove and Haines and two round-trips between Sawmill Cove and Skagway per day. During the winter, one FVF would make one round-trip between Auke Bay and Haines and one round-trip between Auke Bay and Skagway each day.

Fill in Wetlands	*= 1.5 Acres*
Fill in Marine Waters	*= 2.6 Acres*
Culvert Bedding in Non-Fish Bearing Streams	*= 0.4 Acres*
Marine Dredging for Ferry Terminal	*= 1.2 Acres*
Total Waters of U.S. Impacted	*= 5.7 Acres*

2.9 Alternative 4C – Conventional Monohull Service from Auke Bay (original alternative)

Alternative 4C would use Day Boat ACFs to provide additional ferry service in Lynn Canal. No new roads would be built for this alternative. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth, and the Skagway Ferry Terminal would be expanded to include a new end berth. A new conventional monohull ferry would be constructed and would operate between Haines and Skagway. In the summer, one Day Boat ACF would make one round-trip per day between Auke Bay and Haines, and one Day Boat ACF would make one round-trip per day between Auke Bay and Skagway. During the winter, one Day Boat ACF would alternate between a round-trip to Haines one day and a round-trip to Skagway the next day.

Total Waters of U.S. Impacted	*= 0.7 Acres*

2.10 Alternative 4D – Conventional Monohull Service from Berners Bay (original alternative)

Alternative 4D would use Day Boat ACFs to provide additional ferry service in Lynn Canal. This alternative would upgrade/extend Glacier Highway (5.2 miles including 2.3 miles of new highway and 2.9 miles of the existing Glacier Highway) from Echo Cove to Sawmill Cove in Berners Bay where a new ferry terminal would be constructed. The Auke Bay Ferry Terminal would be expanded to include a new double stern berth, and the Skagway Ferry Terminal would be expanded to include a new end berth. This alternative includes construction of a new conventional monohull ferry that would operate between Haines and Skagway. In the summer, the Day Boat ACFs would make two trips per day between Sawmill Cove and Haines and two trips per day between Sawmill Cove and Skagway. During the winter, a Day Boat ACF would operate from Auke Bay, alternating between a round-trip to Haines one day and to Skagway the next day.

Fill in Wetlands	*= 1.5 Acres*
Fill in Marine Waters	*= 2.6 Acres*
Culvert Bedding in Non-Fish Bearing Streams	*= 0.4 Acres*
Marine Dredging for Ferry Terminal	*= 1.2 Acres*
Total Waters of U.S. Impacted	*= 5.7 Acres*

2.11 Ferry Terminal Site Designs and Locations

There are four ferry terminal sites that align with the proposed alternatives listed above. A list of all ferry terminal sites considered is included in the 2013 Supplemental Draft EIS. Each ferry terminal, with the exception of the existing Auke Bay site, would be a new facility located at the William Henry Bay site, the Sawmill Cove site, or the Katzehin Delta site.

2.11.1 Auke Bay Facility Modifications (Original Alternatives 4A, 4B, 4C, and 4D and Alternative 3M)

In order to accommodate ferry traffic, construction of a new double end berth at the Auke Bay terminal would be required. This would involve 0.7 acre of intertidal/subtidal fill.

2.11.2 William Henry Bay Site (Original Alternatives 3, 4B, and 4D and Alternative 3M)

The terminal would include a single end ferry berth. The transfer bridge is accessed by 24-foot wide by 210-foot long "pile-supported dock structures. The long approach dock is necessary to reach sufficient water depths at this site without dredging. The transfer bridge would be raised and lowered via a mechanical lift system. Fixed dolphin structures would be utilized to moor the ferry during pedestrian and vessel transfers. The staging area abuts steep upland topography. The staging area will require some upland excavation into the hillside, but will consist mostly of tideland fill. A total upland area of 1.9 acres would be affected. No dredging is contemplated at this terminal location. Vessels would not berth overnight at this site.

2.11.3 Sawmill Cove Site (Original Alternatives 3, 4B, and 4D and Alternative 3M)

The site is relatively well protected from southeast winds but is exposed-to the northerly fetch of Berners Bay and, to some extent, refracted waves from Lynn Canal. The berth would consist of two bridge support floats and a shared dolphin system comprised of all-tide floating fenders. Access to the vessels would be via twin 143-foot steel transfer bridges. The staging area would be constructed as a combination of tideland and upland fill that would encompass approximately 3.1 acres. The existing upland topography is relatively steep and most of the staging area would be constructed near the tidelands in order to avoid deep excavation of the hillside. The offshore topography drops into deep water beyond the minus 20-foot contour line making construction of pile structures difficult. Approximately 1.9 acres of intertidal and subtidal fill is required, as well as 1.2 acres of subtidal dredging in order to move the facility towards the shore to limit the water depth at the outer mooring structure.

2.11.4 Katzehin Delta Site (Alternative 2B - original alternative as modified for the 2008 USACE ROD and further modified in 2013)

This project site is situated two miles north of the mouth of the Katzehin River. The upland topography north of the river mouth becomes extremely steep and rugged. Deep water depths are encountered immediately north of the river delta. The north side of the river delta was chosen as the terminal location. It affords some southern wave protection, has access to deeper waters, and has ample land area for construction of uplands. The proposed terminal location was adjusted in 2013 to avoid an avalanche path and emergent wetlands. The Katzehin ferry terminal site would require 6.6 acres of intertidal/subtidal fill and dredging of approximately 4.4 acres.

2.12 Material Disposal Sites

Previously, 14.8 acres of marine disposal was permitted with the obligation to work with the USACE to make minor alignment changes and to minimize submarine rock disposal. There is no longer a need for the originally permitted 14.8 acres of submarine rock disposal area. All waste rock will be used within the road prism or stockpiled in upland locations.

3. Practicability Evaluation

The practicability test, described in Subpart B Section 230.10(a) of the Guidelines in 40 CFR Part 230, is one step in identifying the least environmentally damaging practicable alternative (LEDPA). The guidelines provide a two-fold definition of a "practicable" alternative:

1) A practicable alternative "is available and capable of being done after taking into consideration cost, existing technology, and logistics…" For this Draft Section 404(b)(1) Analysis Update of a proposed road and ferry project, the criteria used to evaluate practicability include project purpose, capital and operating costs, travel time, daily traffic, travel demand accommodated, wetland impacts, and Essential Fish Habitat impacts.

2) The three practicability criteria (cost, existing technology and logistics) apply, "in light of overall project purposes." Thus, in order to be practicable, an alternative must not only meet the three criteria but must also fulfill the overall project purpose. The overall project purpose, as defined in the USACE ROD is "to provide improved surface transportation with increased capacity to meet demand, provide flexibility, improve opportunity for travel, and reduces travel time between the Lynn Canal communities of Juneau, Haines, and Skagway.

Practicability evaluations occurred in the JAI Final EIS Appendix X, and in the USACE ROD, however they did not include Alternative 1B. Alternative 1B is evaluated below.

Minor changes have occurred to wetland and other waters of the U.S. impacts resulting from design modifications, construction of the Glacier Highway extension, and relocation of the Katzehin Ferry Terminal. These impacts are summarized in Table 1. A new travel forecast methodology is also being used in the 2013 Supplemental Draft EIS. Updates to the ridership forecasts and traffic demands are presented below and are also shown in Table 1. The slight changes to the wetland impacts and ridership forecasts do not alter the practicability conclusions found in the 2008 USACE ROD.

3.1 Evaluation of New Alternatives

Alternative 1B, along with Alternative 1 (No Action), is the least environmentally damaging of all the alternatives (Table 1). Under this alternative, no new construction would be necessary.

Impacts – Alternative 1B has no additional impacts to wetlands or waterways of the U.S. Because there are no direct or indirect impacts to wetlands or waterways of the U.S. under Alternative 1B, there would be no cumulative impacts to these resources.

Purpose and Need – Alternative 1B does not meet the purpose of the proposed project. In 2020, Alternative 1B is expected to generate 115 vehicles per day in the Lynn Canal corridor. The total unrestrained traffic demand for travel between Auke Bay and Haines/ Skagway is projected to be 1,240 vehicles per day. Therefore, Alternative 1B would only generate and accommodate about 9 percent of the projected unconstrained demand in the corridor by 2020.

The Alternative 1B has restrictions on travel opportunity and flexibility in the Lynn Canal corridor. In the summer, there would be eight roundtrips per week between Auke Bay and Haines There would be seven direct roundtrips per week between Auke Bay and Skagway, with a total possible 9 roundtrips by scheduling through Haines. The opportunity to travel would decrease to a minimum of four roundtrips per week between Auke Bay and Haines or Skagway in the winter Travel times

between Auke Bay and Haines remains unchanged between Alternative 1 and Alternative 1B. Travel times between Auke Bay and Skagway will be reduced from 7.6 to 6.8 from Alternative 1 to Alternative 1B. Even with the time reduction, the quickest travel time to Skagway under Alternative 1B is more than double or 3.4 hours longer than the travel time to Skagway under Alternative 2B.

The Total Project Life Cost[1] of Alternative 1B is estimated to be $1,030.1 million, and the net cost to the state over the 35-year study period is estimated to be about $572.8 million. Annual maintenance and operating costs are about $23.6 million. Alternative 1B has one of the highest state costs per vehicle ($321) of any of the project alternatives. The overall higher net cost to the state of the Alternative 1B (when compared to all alternatives except 4A and 4B) would be the result of higher capital costs (vessel refurbishment and eventual replacement), higher operating costs and lower revenues.

Alternative 1B is not practicable; traffic accommodated under this alternative is approximately 9 percent of total traffic demand in Lynn Canal. The small percentage of potential travelers that would actually use the system would incur very high travel costs, and it would require a high cost per vehicle subsidy from the state. Chapter 1 of the Draft EIS provides more detail on why the current system does not meet the surface transportation needs in Lynn Canal. While Alternative 1B would generate and accommodate demand at a slightly higher rate than Alternative 1 (9.3 percent as opposed to 7.3 percent), it still does not meet the overall project purpose.

[1] The Total Project Life Cost is the summation of the annual expenses and revenues over the lifetime of the facility.

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Table 1. Summary Table

FACTORS	ALTERNATIVES								
	1 (No Action)	**1B**	**2B**	**3**	**3M**	**4A**	**4B**	**4C**	**4D**
ENVIRONMENTAL IMPACTS									
Number of river/stream crossings	0	0	46	32	32	0	5	0	5
Wetland acres filled	0	0	60.7	26	26.4	0	1.5	0	1.5
Total acres of marine waters filled	0	0	32.1	11.6	12.3	0.7	2.6	0.7	2.6
Other Waters of U.S. filled	0	0	2.9	0.2ᵛ	0.2ᵛ	0	0.4	0	0.4
Total acres of Waters of the U.S. impacted	0	0	97.2	39.7	38.7	0.7	5.7	0.7	5.7
Permanent loss of acres of U.S. waters	0	0	92.8	37.8	38.5	0.7	4.1	0.7	4.1
COSTS									
Initial capital costs (millions)	27.0	27.0	600.8	542.4	541.8	254.3	313.5	89.9	116.9
Total Project Life Cost (millions)	669.4	1,030.1	1,093.0	1,125.1	1,154.4	1,555.7	1,604.8	860.7	904.5
TRAVEL TIME									
Summer travel Auke Bay to Skagway (hours)	7.6/9.1	6.8/9.1	3.4	5.4^	5.9^	4.0/9.1	3.7/9.1	6.3/9.1	5.1/9.1
ROUND TRIPS									
# of ferry round trips per week from Auke Bay to Skagway – Summer**	8	9	42	42 (35)*	28 (35)*	16	16	9	16
# of ferry round trips per week from Auke Bay to Haines – Summer**	8	8	56	84	84 (28 during 4/16 – 5/31)	16	16	9	16
MEETING VEHICLE DEMAND									
Initial annual average daily traffic and the percentage of unconstrained demand*** accommodated – to/from Haines	55 (8.9%)	60 (9.7%)	455 (73.4%)	420 (67.7%)	405 (65.3%)	90 (14.5%)	145 (23.4%)	55 (8.9%)	135 (21.8%)
Initial annual average daily traffic and the percentage of unconstrained demand accommodated – to/from Skagway	35 (5.6%)	55 (8.9%)	380 (61.3%)	235 (37.9%)	230 (37.1%)	75 (12.1%)	120 (19.4%)	45 (7.3%)	110 (17.7%)

FACTORS	ALTERNATIVES								
	1 (No Action)	**1B**	**2B**	**3**	**3M**	**4A**	**4B**	**4C**	**4D**
30th year annual average daily traffic and the percentage of unconstrained demand accommodated– to/from Haines	55 (8.9%)	60 (9.7%)	450 (72.6%)	415 (66.9%)	400 (64.5%)	90 (14.5%)	145 (23.4%)	55 (8.9%)	135 (21.8%)
30th year annual average daily traffic and the percentage of unconstrained demand accommodated– to/from Skagway	35 (5.6%)	55 (8.9%)	375 (60.5%)	235 (37.9%)	230 (37.1%)	75 (12.1%)	120 (19.4%)	45 (7.3%)	110 (17.75)
Round-trip summer capacity to Haines (vehicles per day)	93	129	848	816	816 (212 during 4/16 – 5/31)	162	250	144	250
Round-trip summer capacity to Skagway (vehicles per day)	61	201	636	456	456 (153 during 4/16 – 5/31)	149	237	131	237

Notes:

ᵛ The total does not include fill from culvert bedding in non-fish bearing streams as detailed design plans have not been developed for this alternative.

^The trip times vary northbound and southbound because the two ferries have different frequencies resulting in differing wait times. This value is the average time.

* In Alternative 3, travelers from Auke Bay can not make the connection to the first Haines Skagway shuttle. North bound traffic to Skagway will be able to travel on the other 5 sailings. There is a total of 12 round-trip sailings between Sawmill Cove and William Henry Bay (6 round trips per Day Boat ACF) on a daily basis during the summer. In Alternative 3M, between April 16 and May 31, there will be 4 round trips per day between Sawmill Cove and William Henry Bay (2 round trips per Day Boat ACF). The effective number of round trips that Skagway travelers could make each day would be 3.5.

** Includes mainliner trips.

*** Unconstrained demand is the volume of traffic that would occur on a hypothetical highway connecting Juneau, Haines, and Skagway. Unconstrained average daily traffic demand to/from Juneau and Haines is 620 vehicles, and to/from Juneau and Skagway is 620 vehicles (assumed same for 2020 and 2050).

4. Practicability Conclusions

The travel forecast and life cycle costs have been updated to reflect new analysis. Information on species protected under the Endangered Species Act (ESA) has also been updated. Although the travel forecast, life cycle costs, and ESA species are different from those in the original analysis, the data presented in the practicability evaluation section support the practicability conclusions presented in the 2008 USACE permit and reiterated in the following section.

4.1 No Action Alternative, Alternatives 1B, 4A, 4B, 4C, and 4D

The No Action Alternative, Alternatives 1B, 4A, 4B, 4C and 4D would each carry less than 30 percent of the unconstrained daily vehicle demand. This very low ability to generate and accommodate the unconstrained daily vehicle demand makes the No Action Alternative, Alternatives 1B, 4A, 4B, 4C, and 4D not practicable from a logistical perspective.

4.2 Alternative *2B*

Of all the build alternatives, Alternative 2B best meets the purpose and need for the project. The alternative generates and accommodates the greatest projected traffic demand and provides substantially greater flexibility and opportunity to travel while providing the shortest travel times.

Forecasted demand for Alternative 2B in 2020 is estimated to be 835 annual average daily traffic (ADT). Alternative 2B would generate and accommodate approximately 73 percent of the Juneau – Haines unconstrained demand and 61 percent of the Juneau – Skagway unconstrained demand. Travel between Auke Bay and Skagway would take approximately 3.4 hours, and travel to Haines would take approximately 3.0 hours.

Alternative 2B was found to be the least environmentally damaging practicable alternative considering cost, existing technology, and logistics in light of the overall project purpose. Logistics and technology were the deciding factors in this analysis.

4.3 Alternative 3

Several Essential Fish Habitat (EFH) species are present in Lynn Canal, including Pacific herring and forage (prey) fish such as eulachon. Letters received from the U.S. Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), and Alaska Department of Fish and Game (ADF&G) on the 2005 Draft Supplemental EIS noted concerns about alternatives that would impact Berners Bay. NMFS stated; “the most significant adverse effects to living marine resources posed by this alternative are potential effects to the Lynn Canal herring population from a ferry terminal at Sawmill Cove in Berners Bay; effects to Stellar sea lions, humpback whales and their prey from ferry operations across Berners Bay to William Henry Bay; and adverse effects to sensitive and productive subtidal habitat in William Henry Bay.” Although the eastern Distinct Population Segment (DPS) of Steller sea lion was delisted in December 2013, the western DPS of Stellar sea lion is still listed as an endangered species. Both the eastern and western DPS are present in Lynn Canal and actively use Berners Bay for foraging. Humpback whales (endangered) and several other species of marine mammals are also present in Lynn

Canal, including harbor seals, minke whales, killer whales, harbor porpoises, Dall's porpoises, and sea otters. These species are protected under the Marine Mammal Protection Act (MMPA).

Forecasted demand for Alternative 3 in 2020 is estimated to be 655 ADT. Alternative 3 would generate and accommodate approximately 68 percent of the Juneau – Haines unconstrained demand and 38 percent of the Juneau – Skagway unconstrained demand. Travel time between Auke Bay and Skagway would be approximately 5.4 hours and 3.0 hours between Auke Bay and Haines.

A logistical consideration is the functionality of Alternative 3 in the event that a shuttle is taken out of service due to breakdown, staff problems, or funding shortfalls. In its August 27, 2007 letter to the USACE regarding the practicability of alternatives, DOT&PF noted:

> "Under Alternative 3, a vessel is always required between Haines and Skagway, and because all traffic must be moved across southern Lynn Canal, one vessel is required there in winter, and two are required to meet demand in summer. In summer if one vessel of the three cannot be operated, only half of the capacity to or from the West Lynn Canal highway could be provided. In winter if one of the two vessels cannot be operated, traffic can move to or from the West Lynn Canal Highway but no service would exist to/from Skagway."

For example, during the 7-month-long winter operation, Alternative 3 would operate two vessels, as opposed to the three required during summer operations. Since each ferry needs at least 1 month out of service for maintenance, there is a minimum of three months in the winter when there will be no back-up vessel. If a ferry breaks down during this three month timeframe, the system cannot operate. A single ferry could not provide service between William Henry Bay and Sawmill Cove and between Haines and Skagway 40 miles to the north.

Alternative 3 also presents a logistics problem for foot passengers and companies providing van or bus service. The DOT&PF's 2007 letter states, "Alternative 3 would have two remote terminals, one approximately 40 miles north of Juneau. Rather than transporting passengers to the Katzehin terminal, dropping them off and picking up passengers from the arriving shuttle, a private carrier would need to have one or more vehicles on either side of Lynn Canal, or place their vehicle(s) on the shuttle and lose the shuttle transit time from their operational schedule."

Lastly, the remote location of the Alternative 3 ferry terminals would be logistically challenging for maintenance. As stated in the DOT&PF's 2007 letter:

> "Both terminals are over 30 miles from existing ferry terminals and all of the support services that complement them. Shuttle ferries would need to be 'home ported' at Sawmill Cove, over-nighting there as well as refueling and performing all routine service. All fuel and service materials would need to be transported out to the terminal on a regular basis. While this is not an insurmountable obstacle, it is a contributing factor that combined with other factors makes this alternative not practicable for the state."

Alternative 3 is not practicable due to adverse environmental impacts to Berners Bay species from construction and operation of the Sawmill Cove Ferry Terminal, as well as the lower traffic levels that it would generate and accommodate in comparison to Alternative 2B, particularly in serving Skagway. This alternative also presents numerous logistical issues, such as the lack of functionality from out-of-service shuttle ferries, difficulties for pedestrian shuttle services, and the maintenance concerns with the remote ferry terminals. These factors contribute to the impracticability of Alternative 3.

4.4 Alternative 3M

Alternative 3M was introduced in the 2008 USACE Record of Decision (ROD) at the recommendation of EPA to avoid impacts to endangered species and their prey in Berners Bay. Under Alternative 3M, the Sawmill Cove terminal in Berners Bay would be closed for 6 weeks, from mid-April to the end of May. An improved Auke Bay terminal would be used during this time, and the ferries would shuttle between Auke Bay and William Henry Bay. The Auke Bay modifications would also cost approximately $40.6 million (2012 dollars) yet only be utilized 6 weeks per year.

Capacity of Alternative 3M would be reduced from that of Alternative 3 for a six week period (approximately four weeks of the winter schedule and two weeks of the summer schedule). When Alternative 3M is on the summer schedule, capacity would be reduced from 816 vehicles to 212 vehicles per day to Haines, a reduction of 74 percent, and capacity would be reduced from 456 to 153 vehicles per day to Skagway, a reduction of 66 percent. As with Alternative 3, Alternative 3M provides poor service between Juneau and Skagway. While Alternative 3M would generate and accommodate 65% of the total unconstrained demand to Haines, due to the second ferry link required it would generate and accommodate only 37 percent of the total unconstrained demand for travel between Juneau and Skagway.

In addition to the logistical issues of Alternative 3, the following also applies to Alternative 3M:

- As stated in DOT&PF August 27, 2007 letter to the USACE regarding the practicability of Alternative 3M:

  > "The Auke Bay terminal is a heavily used facility, with no room for expansion… Converting a side berth to accommodate additional shuttles would mean that no mainline vessels could dock at Auke Bay in the evening and only one mainliner at a time could dock at Auke Bay during the day during this 6 week period. This would create scheduling problems for the entire system, which is already controlled by tides and affected by numerous other factors."

- As stated in DOT&PF October 8, 2007 letter to the USACE:

  > "…Alternative 3M would increase the open water between highways to 36 statute miles for six weeks out of the year. The longer the marine link, the less flexibility the State has to incrementally increase capacity and trip

> frequency…Under Alternative 3M the State would be making a major highway capital investment that has permanent uneconomical shuttle system constraints."

Alternative 3M is not practicable due to the lower traffic levels that it would generate and accommodate overall and to/from Skagway in particular. The logistics problems created by two winter terminal operations, the distance between the two routes when only two ferries are available and maintaining a seasonal port in Auke Bay, further contribute to the determination of impracticability.

5. Factual Determinations

The 404(b)(1) Guidelines (40 CFR Part 230, Subpart B, Sec 230.11) require determination of the potential short-term and long term effects of a proposed discharge of dredged or fill material on the physical, chemical, and biological, components of the aquatic environment. These factual determinations are presented below and are an update to those presented in the Final EIS and 2008 USACE permit.

II. Evaluation of Compliance with 404(b)(1) Guidelines

[Restrictions on discharge 40 CFR §230.10(a)-(d)]

(An * is marked above the answer that would indicate noncompliance with the guidelines. No * marked signifies the question does not relate to compliance or noncompliance with the guidelines. An "X" simply marks the answer to the question posed.)

a. Alternative Test

		YES *	NO
(i)	Is there an available, practicable alternative having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that does not involve a discharge into "waters of the United States" or at other locations within these waters? ***The No Action Alternative, Alternative 1B, 3, 3M, 4A, 4B, 4C, and 4D were determined to not meet the overall project purpose and are therefore not practicable. Alternative 2B was determined to be the least environmentally damaging practicable alternative.***	☐	☒
(ii)	If the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available? ***See text of preceding section.***	☒	☐ *

b. Special restrictions. Will the discharge:

(i)	Violate state water quality standards?	☐ *	☒
(ii)	Violate toxic effluent prohibitions or standards (under Section 307 of the Act)?	☐ *	☒
(iii)	Jeopardize endangered and/or threatened species or their critical habitat?	☐ *	☒
(iv)	Violate standards set by the Department of Commerce to protect marine sanctuaries?	☐ *	☒
(v)	Evaluation of the information in the Final EIS indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s)[§230.60]:	☒	☐ *

(x) Based on the above information, the material is not a carrier of contaminants.

(x) The levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas. ***All fill material will be shot rock or excavated mineral soil from previously undisturbed areas.***

( ) Acceptable constraints are available and will be implemented to reduce contaminants to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site. ***Not applicable***

c. Other restrictions. Will the discharge contribute to significant degradation of "waters of the United States" through adverse impacts to:

		*	
(i)	Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites?	☐	☒
(ii)	Life stages of aquatic life and other wildlife dependent on aquatic ecosystems, to include the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical and/or chemical processes?	☐	☒
(iii)	Aquatic system diversity, productivity and stability of the aquatic life and other wildlife or wildlife habitat or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy?	☐	☒
(iv)	Recreational, aesthetic and/or economic values?	☐	☒

d. Actions to minimize potential adverse impacts (mitigation). Will all appropriate and practicable steps be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem? [40 CFR 230.70-77] Checked boxes apply.

(i) Actions considered to minimize the effects of the discharge by site location (§230.70)

1.	Locating and confining the discharge to minimize smothering of organisms	☒
2.	Designing the discharge to avoid a disruption of periodic water inundation patterns.	☒
3.	Selecting a site that has been used previously for dredged material discharges. ***Not applicable.***	☐
4.	Selecting a site at which the substrate is composed of material similar to that being discharged, such as discharging sand on sand, mud on mud, etc. ***Not applicable.***	☐
5.	Selecting the disposal site, the discharge point, and the method of discharge to minimize the extent of any plume. ***Not applicable.***	☐
6.	Designing the discharge or dredged or fill material to minimize or prevent the creation of standing bodies of water in areas of normally fluctuation water levels, and minimize or prevent the drainage of areas subject to such fluctuations.	☒

(ii) Actions concerning the material to be discharged (§230.71). Minimizing the effects by treatment of, or placing limitations on the material itself: ***This issue is addressed by limiting discharge materials to shot rock, mineral soil, or dredged marine sediment, and by controlling the location and manner of discharge to contain fine sediments. Numbers 3 and 4 below are not applicable as no liquid or gaseous components will be discharged.***

1.	Disposing of the material in such a manner that physiochemical conditions are maintained and the potency and availability of pollutants are reduced.	☒
2.	Limiting the solid, liquid, and gaseous components of material to be discharged at a particular site ***(The footprint of solid material discharged will be limited).***	☒
3.	Adding treatment substances to the discharge material. ***Not applicable.***	☐
4.	Utilizing chemical flocculants to enhance the deposition of suspended particulates in diked disposal areas. ***Not applicable.***	☐

(iii) Actions controlling the effects of the material after discharge (§230.72): ***This issue is addressed by limiting discharge materials to shot rock, mineral soil, or dredged marine sediment, and by controlling the location and manner of discharge to contain fine sediments.***

1.	Selecting a disposal method and/or site where the potential for erosion, slumping or leaching of material into the surrounding aquatic ecosystem will be reduced. ***Erosion and slumping will be controlled.***	☒
2.	Capping in-place contaminated material with clean material or selectively discharging the most contaminated material first to be capped with the remaining material. ***Not applicable.***	☐
3.	Maintaining and containing discharge material properly to prevent point and nonpoint sources of pollution.	☒
4.	Timing the discharge to minimize impacts (e.g., during periods of high water, wind, wave, and/or tidal events)	☒

(iv) Actions affecting the method of fill dispersion (§230.73)

1.	Distributing the dredged material widely in a thin layer at the disposal site (dredge material will be placed within shot rock fill).	☐
2.	Orienting a fill mound to minimize obstruction to the water current, and/or to minimize the size of the mound.	☒
3.	Using silt screens or appropriate methods to confine the suspended particulates.	☒
4.	Making use of water currents to mix, disperse and dilute the discharge. ***Not applicable.***	☐
5.	Minimize water column turbidity by use of a diffuser system. ***Not applicable.***	☐
6.	Selecting sites or managing discharges to confine and minimize the release of suspended particulates to give decreased turbidity levels and to maintain light penetration for organisms. ***Fine sediments will be contained.***	☐
7.	Setting limitations on the amount of material to be discharged per unit of time or volume of receiving water. ***Discharges below the high tide line would occur during low tides.***	☐

(v) Actions related to technology (§230.74):

1.	Use of appropriate equipment and/or machinery in activities related to the discharge	☒
2.	Employing appropriate maintenance and operation on equipment and machinery.	☒
3.	Using machinery and techniques that are especially designed to reduce damage to wetlands.	☒
4.	Designing access roads and channel spanning structures using culverts, open channels, and diversions that will pass both low and high flows, accommodate fluctuating water levels, and maintain circulation and faunal movement.	☒
5.	Employing appropriate machinery and/or methods of material transport	☒

(vi) Actions to minimize impacts to plant and animal populations (§230.75)

1.	Avoiding changes in water current and circulation patterns which would interfere with the movement of animals	☒
2.	Selecting sites or managing discharges to prevent or avoid creating habitat conducive to the development of undesirable predators or species which have a competitive edge ecologically over indigenous plants or animals.	☒
3.	Avoiding sites which have a unique habitat or other similar value	☒
4.	Using planning and construction practices to institute habitat development and restoration to produce a new or modified environmental state of higher ecological value by displacement of some or all of the existing environmental characteristics.	☐
5.	Timing discharge to avoid spawning or migration seasons and other biologically critical time periods.	☒
6.	Avoiding the destruction of remnant natural sites with areas already impacted by development. ***Not applicable***	☐

(vii) Minimization of impacts on human use of the site (§230.76):

1.	Selecting discharge sites and following discharge procedures to prevent or minimize aesthetic impacts.	☒
2.	Selecting disposal sites which are not valuable as natural aquatic areas	☒
3.	Timing the discharge to avoid seasons or periods when human recreational activity associated with the aquatic site is most important	☐
4.	Minimizing disturbance on aesthetic features of an aquatic site or ecosystem	☒
5.	Selecting a disposal site that will not be detrimental or increase incompatible human activity or require the need for frequent dredge or fill maintenance activity in remote fish and/or wildlife areas.	☒
6.	Locating the disposal site outside of the vicinity of a public water supply intake.	☒

(viii) Other actions (§230.77)

1.	Controlling runoff and other discharges from activities which are conducted on the fill	☒
2.	Designing water release [from dams] to accommodate the needs of fish & wildlife. ***Not applicable***	☐
3.	In dredging projects funded by Federal agencies other than the Corps, maintain water quality of the return discharge	☒
4.	Consider the ecosystem that would be lost as well as the environmental benefits of the new ecosystem(s) that would be replacing it.	☐

III. Factual Determinations [40 CFR §230.11]

The determinations of potential short-term effects of the proposed discharges of dredged or fill material on the physical, chemical, and biological components of the aquatic environment included items a – h, below, in making a finding of compliance or non-compliance. There is minimal potential for short-term or long-term significant adverse environmental effects (in light of Subparts C – F) of the proposed discharge as related to:

		YES	NO
a.	Physical substrate determinations.	☒	☐
b.	Water circulation, fluctuation and salinity determinations	☒	☐
c.	Suspended particulate/turbidity determinations	☒	☐
d.	Contaminant determinations	☒	☐
e.	Aquatic ecosystem structure and function determinations	☒	☐
f.	Proposed disposal site determination	☒	☐
g.	Determination of cumulative effects on the aquatic ecosystem	☒	☐
h.	Determination of secondary effects on the aquatic ecosystem	☒	☐

IV. Technical Evaluation Factors [40 CFR §230 Subpart C - F]

Based on FHWA guidance, DOT&PF does not make significance determinations for impacts documented in a FHWA EIS. Therefore, Final EIS and 2013 Supplemental Draft EIS section references are provided for each impact category, but no box is marked in this draft analysis other than to indicate a category is not applicable. If necessary, the USACE will make these determinations when preparing the final determination.

A. Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem [Subpart C]

Chapter & Section References for the Final EIS and 2013 Supplemental Draft EIS are included below each item

		Significant	Not Significant	Not Applicable
1.	Substrate:	☐	☐	☐
	Final EIS: Sections 4.3.9.2, 4.3.9.3, 4.3.12, 4.3.1; Appendix N ***Supplemental DEIS: Sections 4.3.9.2, 4.3.9.3, 4.3.12, 4.3.1; Appendix Z***			
2.	Suspended particulates / turbidity	☐	☐	☐
	Final EIS: Sections 4.3.9.2, 4.3.9.3; Appendix N and K ***Supplemental DEIS: Sections 4.3.9.2, 4.3.9.3; Appendix Z***			
3.	Water	☐	☐	☐
	Final EIS: Sections 4.3.9.2, 4.3.9.3; Appendix N and K ***Supplemental DEIS: Sections 4.3.9.2, 4.3.9.3; Appendix Z***			
4.	Current patterns and water circulation	☐	☐	☐
	Final EIS: Sections 4.3.9.2; Appendix K ***Supplemental DEIS: Sections 4.3.9.2; Appendix Z***			
5.	Normal water fluctuations / hydroperiod	☐	☐	☐
	Final EIS: Sections 4.3.9.2, 4.3.9.3; Appendix N and K ***Supplemental DEIS: Sections 4.3.9.2, 4.3.9.3; Appendix Z***			
6.	Salinity gradients	☐	☐	☐

	No changes to salinity from the project are expected, existing freshwater drainage patterns would not be changed. ***Final EIS: Sections 4.3.9.3 and 4.3.12; Appendix O and K*** ***Supplemental DEIS: Sections 4.3.9.3 and 4.3.12; Appendix Z***			

B. Potential Impacts on Biological Characteristics of the Aquatic Ecosystem [Subpart D]

Chapter & Section References for the Final EIS and Supplemental Draft EIS are included below each item

		Significant	Not Significant	Not Applicable
1.	Threatened and/or endangered species	☐	☐	☐
	Final EIS: Sections 4.3.17.1, 4.3.17.2; Appendix N ***Supplemental DEIS: Sections 4.3.17.1, 4.3.17.2; Appendix Z***			
2.	Fish, crustaceans, mollusks, and other aquatic organisms in the food web	☐	☐	☐
	Final EIS: Sections 4.3.12, 4.3.13, 4.3.15, 4.3.17; Appendix N, O, P, Q, and S ***Supplemental DEIS: Sections 4.3.12, 4.3.13, 4.3.15, 4.3.17; Appendix Z***			
3.	Other wildlife	☐	☐	☐
	Final EIS: Sections 4.3.12, 4.3.14, 4.3.15, 5.12; Appendix O, Q, and R ***Supplemental DEIS: Sections 4.3.12, 4.3.14, 4.3.15, 5.12; Appendix Z***			

C. Potential Impacts on Special Aquatic Site [Subpart E]

Chapter & Section References for the Final EIS and Supplemental Draft EIS are included below each item

		Significant	Not Significant	Not Applicable
1.	Wetlands	☐	☐	☐
	Final EIS: Section 4.3.12; Appendix O ***Supplemental DEIS: Section 4.3.12; Appendix Z***			
2.	Sanctuaries and refuges	☐	☐	☒
	There are none in the project area. ***Final EIS: Section 6.1 and 6.3*** ***Supplemental DEIS: Section6.1 and 6.3***			
3.	Mud flats	☐	☐	☒
	No mud flats in the project area would be affected by the highway or the ferry terminal. ***Final EIS: Section 4.3.12; Appendix O*** ***Supplemental DEIS: Section 4.3.12; Appendix Z***			
4.	Vegetated Shallows	☐	☐	☒
	Impacts to vegetated shallows have been avoided. ***Final EIS: Section 4.3.12, 4.3.13; Appendix N, O, and P*** ***Supplemental DEIS: Section 4.3.12, 4.3.13; Appendix Z***			
5.	Coral reefs	☐	☐	☒
	There are no coral reefs in the project area.			
6.	Riffle and pool complexes	☐	☐	☒
	No fill would be placed in riffle and pool complexes in fish streams because bridges would span these streams.			

D. Potential Effects on Human Use Characteristics [Subpart F]

Chapter & Section References for the Final EIS and Supplemental Draft EIS are included below each item

		Significant	Not Significant	Not Applicable
1.	Effects on municipal and private water supplies	☐	☐	☒
	Project area is outside municipal watersheds and there are no private water supplies in the project area.			
2.	Recreational and Commercial fishing impacts (including subsistence fishing)	☐	☐	☐
	Final EIS: Sections 4.3.1, 4.3.5; Appendix F and H ***Supplemental DEIS: Section 4.3.1, 4.3.5; Appendix Z***			
3.	Effects on water-related recreation	☐	☐	☐
	Final EIS: Section 4.3.1; Appendix F ***Supplemental DEIS: Section 4.3.1; Appendix Z***			
4.	Aesthetics	☐	☐	☐
	Final EIS: Section 4.3.3; Appendix G ***Supplemental DEIS: Section 4.3.3; Appendix Z***			
5.	Effects on parks, national and historic monuments, National seashores, wilderness areas, research sites, and similar preserves	☐	☐	☐
	Final EIS: Sections 4.3.1, 4.3.4; Appendix F and G ***Supplemental DEIS: Section 4.3.1, 4.3.4; Appendix Z***			

V. Evaluation of Dredged or Fill Material [Subpart G]

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material: (checked boxes apply)

1.☒ Physical characteristics

2.☐ Hydrography in relation to known or anticipated sources of contaminants ***not applicable***

3.☐ Results from previous testing of the material or similar material in the vicinity of the project ***Not applicable***

4.☐ Known, significant sources of persistent pesticides from land runoff or percolation ***not applicable***

5.☒ Spill records for petroleum products or designated hazardous substances [§311 of the CWA]

6.☒ Other public records of significant introduction of contaminants from industry, municipalities or other sources.

7.☒ Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities.

b. An evaluation of the information above indicates that there is reason to believe the proposed dredged or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites. The material meets the testing exclusion criteria:

☒ Yes ☐ No

The proposed fill has been determined to be free of contaminants, based on the known sources of material and limitation to clean shot rock, mineral soil, and dredged sand. The physical characteristics of the fill material are generally well known. With the exception of the area around Comet, there has been no human activity that would be a source of petroleum products, hazardous substances, significant contaminants, or other existing man-made material deposits in the project area having substances which could be released in harmful quantities to the aquatic environment. The Comet area was investigated and the only potential contamination sources would be avoided.

VI. Disposal Site Determination [40 CFR 230.11(f)]

a. The following factors, as appropriate, have been considered in evaluating the disposal site. ***Boxes not marked are not applicable. All dredged material at the Katzehin Ferry Terminal location will be encapsulated within the shot rock fill for the terminal; all fill material placed in water would be clean shot rock generated from road construction.***

1. ☒ Depth of water at the disposal site.
2. ☐ Current velocity, direction, and variability at the disposal site
3. ☐ Degree of turbulence
4. ☐ Water column stratification
5. ☐ Discharge vessel speed and direction
6. ☒ Rate of discharge
7. ☒ Dredged material characteristics
8. ☐ Other factors affecting rates and patterns of mixing

b. An evaluation of the appropriate factors in VI, above, indicates that the disposal site and/or size of mixing zone are acceptable:

☒ Yes ☐ No

VII. Actions to Minimize Adverse Effects [40 CFR 230.70, Subpart H]

All appropriate and practicable steps would be taken, through application of recommendation of §230.70 thru§230.77 to ensure minimal adverse effects of the proposed discharge.

☒ Yes ☐ No

Avoidance and Design Mitigation Measures

DOT&PF has designed Alternative 2B to have the least impacts practicable to wetlands and waters of the U.S. as well as to biological (e.g. threatened and endangered species, essential fish habitat, resident fish, wildlife, and bald eagles). Section 5.12 of the Supplemental Draft EIS contains the mitigation for the proposed project. Alignment, construction, maintenance and operation avoidance and mitigation measures as well as measures

deemed not practicable are included below and are provided in more detail in Attachment 3 of the permit application.

Alignment- The highway alignment for the proposed project has been adjusted numerous times to avoid all palustrine emergent and all estuarine emergent wetlands. The highway has been adjusted to the greatest extent practicable with topographic constraints and locations of bald eagle nest trees.

The highway would be designed using the minimum width fill footprint necessary to provide a safe and useable road base and have low-profile embankments to limit the fill footprints. DOT&PF would eliminate submarine rock disposal areas by using material in the fill footprint or stockpiling in upland locations.

Extensive means would be taken to ensure water quality standards during construction and operation and maintenance. These practices include development of erosion and sediment control plans to avoid water quality impacts to wetlands and other water bodies including essential fish habitat (EFH) and anadromous streams.

In areas requiring fill of water bodies or wetlands, only clean fill (shot rock or mineral soil) material would be used. Silt fences and sediment traps would be used during construction to keep sediment out of natural drainage basins.

Slope limits in wetland areas would be separately identified to ensure workers are aware of wetlands and the need to avoid impacts beyond slope and clearing limits. All construction camps, staging sites, borrow pits, and waste areas would be located in upland areas and stabilized during and after use to avoid water quality impacts to wetlands and other waters of the U.S.

Bridges and Culverts- DOT&PF has designed bridges and stream crossings to avoid in-water work to the extent practicable. All anadromous stream crossings except the Antler, Katzehin, and Lace rivers would be clear spanned, with clearances well above the 100-year flood mark. Except for the south Katzehin bridge abutment, no fill would encroach on the river banks and fish passage. Flood capacity and channel characteristics of the rivers would not be altered or impacted. The Antler, Katzehin, and Lace rivers would have the fewest number of supports practicable to meet design standards using minimum 130-foot spacing and abutments would be placed above the high-water mark.

All in-water work at anadromous streams would occur between June 1 and March 14 to minimize impacts to fish species. Culverts would be used to maintain natural surface water flow patterns and would be sized to avoid excessive backwater or outlet erosion. Techniques such as flow diversion around work sites, and working during times of low water would help maintain water quality downstream of work areas.

Ferry Operations- All shuttle ferries will have wastewater holding tanks to avoid discharge of contaminants to waters of the U.S.

The design for the Katzehin Ferry Terminal breakwaters would include either fish passage gaps or large box culverts to ensure proper fish passage. In-water construction would not occur from March 15 to June 15 to avoid impacts to migrating anadromous or resident species.

Compensatory Mitigation- As part of the Section 404/10 permitting process, DOT&PF would coordinate with the USACE to develop a compensatory mitigation plan to offset impacts to waters of the U.S. in compliance with the 2008 Mitigation Rule.

VIII. Findings of Compliance or Non-Compliance [40 CFR 230.12]

a. ☒ The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines.

b. ☐ The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines with the inclusion of the following conditions:

c. ☐ The proposed disposal site for discharge of dredged or fill material does not comply with the Section 404(b)(1) Guidelines, for the following reasons:

1. ☐ There is a less damaging practicable alternative
2. ☐ The proposed discharge will result in significant degradation of the aquatic ecosystem
3. ☐ The proposed discharge does not include all practicable and/or appropriate measures to minimize potential harm to the aquatic ecosystem.
4. ☐ There does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with these Guidelines.

6. References

Alaska Department of Transportation and Public Facilities (DOT&PF). 2006. *Juneau Access Project: Final Environmental Impact Statement.* Juneau, Alaska. Available online at http://www.dot.state.ak.us/stwdplng/projectinfo/ser/juneau_access.

Eckert, Ginny L. 2010. *Final Report to Alaska Department of Transportation and Public Facilities, Lynn Canal Marine Habitat Enhancement*. University of Alaska, Fairbanks, AK.

Fehr and Peers. 2013a. Juneau Access Improvements Project Supplemental Environmental Impact Statement Traffic Forecast Report. Prepared for Alaska Dot&PF by Fehr and Peers. August.

Fehr and Peers. 2013b. Draft JAI Alternative 3 – Modified Analysis Results Memorandum. Memorandum from Donald Samdahl and Jeff Pierson, Fehr and Piers to Laurie Cummings and Kevin Doyle, HDR. HJune 24, 2013.

McDowell Group. 2012. *Juneau Access Haines/Skagway Traffic Forecast.* Prepared for DOT&PF, November 2012.

U.S. Army Corps of Engineers (USACE). 2008a. USACE Permit POA-2006-597-2, Berners Bay/Lynn Canal.

——. 2008b. Record of Decision and Permit Evaluation, POA-2006-597-2, Lynn Canal and The Berners Bay Watershed.

U.S. Federal Register. 1986. Part II. Rules and Regulations, Vol. 51, No. 219. November 13, 1986. U.S. Department of Defense. Corps of Engineers, Department of the Army. 33 CFR Parts 320-330, Regulatory Programs of the Corps of Engineers; Final Rule.

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Attachment A

Department of the Army 2008 Record of Decision and Permit Evaluation

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Alaska District

DEPARTMENT OF THE ARMY

RECORD OF DECISON
&
PERMIT EVALUATION

APPLICANT: ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
APPLICATION NO.: POA-2006-597-2
WATERWAY: LYNN CANAL & THE BERNERS BAY WATERSHED

This document constitutes the United States (U.S.) Department of the Army, Corps of Engineers' (Corps) Record of Decision (ROD), compliance determination according to the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency's (EPA) Section 404(b)(1) Guidelines[1] (Guidelines), and the public interest review for the Alaska Department of Transportation and Public Facilities' (ADOT) proposed Juneau Access Improvements Project (Project).

The ADOT and the Corps initiated the NEPA process to "...satisfy the requirements of the Act which requires preparation of an Environmental Impact Statement (EIS) for any proposed project that: is not categorically excluded; is a major federal action (i.e., requires a permit, regulatory decision, or funding from a federal agency); may have a significant effect on the quality of the human environment".[2] The NEPA document was used to identify and analyze alternatives to all Federal Projects and in this circumstance Federal Project #STP000S (131) [State Project #71100]. The Federal Highway Administration (FHWA) was the lead Federal agency for the project, while ADOT acted on behalf of FHWA in preparing the EIS. The Corps has been a cooperating agency throughout the NEPA process, which was completed on January 18, 2006, when the Final EIS (FEIS) was published[3]. The FHWA Division Administrator, David Miller, signed and issued the FHWA ROD on April 3, 2006. The ADOT and the FHWA selected Alternative 2B as their preferred alternative.

The FEIS adequately analyzed the impacts of the proposed action. The time between the FEIS and the Corps ROD has resulted in higher construction costs for all alternatives. The increasing costs of steel, concrete, fuel, and construction equipment will elevate the final construction costs. Inflation will raise the costs of construction, operation, and maintenance for all of the alternatives. The current FEIS analyzed the full range of impacts from the alternatives. We agreed with EPA's suggestion, and revised the analysis of Alternative 3 to develop a Modified Alternative 3 to satisfy Endangered Species Act concerns. The Corps applied wetland avoidance and minimization to Alternative 2B, which resulted in what we have called Modified Alternative 2B in this ROD. The impacts from the revised alternatives were adequately

[1] 40 CFR 230
[2] FEIS, Summary, page S-1.
[3] A copy of the FEIS can be found on the internet at http://dot.alaska.gov/stwdplng/projectinfo/ser/juneau_access/index.shtml

addressed within the impact analysis in the EIS. There are no substantial changes to the proposed action and there are no significantly new circumstances or information relevant to environmental concerns bearing on the proposed action or its impacts.

The evaluation in the FEIS for Alternative 2B determined that 253 acres of waters of the U.S. would be filled. It was found during the development of this ROD that Modified Alternative 2B would fill 110 acres of waters of the U.S. This reduction in fill was negotiated with ADOT using information presented in the FEIS. Therefore, further NEPA evaluation is not warranted.

I have independently reviewed and evaluated the information in the FEIS, in accordance with 40 CFR 1506.3 and 33 CFR 230.21. The Corps hereby adopts the FEIS for the Project, except for the conclusions made in the draft 404(b)(1) analysis found in Appendix X of the FEIS. The Corps in this document completed its own independent 404(b)(1) analysis. The Corps used information found in Appendix X, but is not basing a Department of Army (DA) permit decision on the conclusions found in Appendix X. The Corps has an independent responsibility to analyze the environmental impacts of a project and determine its compliance with the Guidelines. The Corps often asks that an applicant prepare a draft guideline analysis. The Corps' intent has been to have the applicant understand that there is a fundamental difference between the NEPA preferred alternative selection process and the Guidelines' requirements. Section 404 of the Clean Water Act (CWA) applies to the discharge of dredged or fill material into waters of the United States. The substantive evaluation requirements of Guidelines developed by the Administrator of the EPA in conjunction with the Secretary of the Army are published in Section 40, Code of Federal Regulations (CFR) Part 230, "Guidelines for Specification of Disposal Sites for Dredged or Fill Material".

The adequacy of the FEIS is the subject of a judicial action which is still pending. That case is Southeast Alaska Conservation Council et. al. v. Federal Highway Administration et. al., No. 1:06-cv-00009-JWS (D. Alaska).

I. **DECISION**: I have decided, in light of the overall public interest, to issue a DA permit, for Alternative 2B, as modified by the application of avoidance and minimization, pursuant to Section 404 of CWA (33 U.S.C. 1344) (10/404 permit) and Section 10 of the Rivers and Harbors Act of 1899 (RHA) (33 U.S.C. 403). The permit will be issued to the ADOT and authorize the discharge of fill material into waters of the U.S. to construct an overland road between Echo Cove and an area just north of the Katzehin River delta and will contain the following language:

> "Discharge up to 1,736,000 cubic yards (cy) of dredged and fill material into approximately 110 acres of waters of the United States, including forested wetlands, stream channels, deep-water habitat, vegetated shallows, and navigable waters, in conjunction with the construction of a 50.8-mile long two-lane highway from the end of Glacier Highway at Echo Cove around Berners Bay and along the eastern coast of Lynn Canal to a point immediately north of the Katzehin River delta, with associated infrastructure:

Facilities	**Acres of US Waters To Be Filled**	**Fill Volume**
Roadway Fill	44.4 Acres	1,173,514 cy

Roadway Slope Stabilization	17.5 Acres	0 cy
Channel Work	1.3 Acres	5,475 cy
Marine Roadway Fill	25.6 Acres	'see below'
Marine Rock Disposal	14.8 Acres	430,000 cy
Ferry Terminal	3.8 Acres	75,600 cy
Ferry Breakwaters	2.7 Acres	51,000 cy
TOTAL	110.1 Acres	1,735,589 cy

The individual components of the work shall include, but are not limited to, the following activities:

Roadway Fill: Approximately 61.9 acres (44.4 acres of roadway in freshwater wetlands plus 17.5 acres of side slope stabilization in wetlands) will have rock fill placed within the prepared site.

Channel Work: The installation and extension of culverts will require the discharge of bedding material, riprap, and concrete into 1.3 acres of waters of the U.S. below the ordinary high water mark of streams.

Marine Roadway Fill: The road will be placed, for part of its length along the shoreline, in approximately 25.6 acres of marine (tidal) waters along the east side of Lynn Canal, north of Comet Beach. The road, which will be composed of shot rock fill, will be protected at its base with 6 feet of Class IV rock riprap extending up to elevation +24 feet above the 0.0 foot contour. The marine roadway fill portion was included with in the roadway fill volume.

Marine Rock Disposal: Approximately 430,000 cy of rock shall be barged and disposed of at one of two designated open-water disposal sites in marine waters in the following locations: (A & B) Section 25, Township 33 South, Range 61, Copper River Meridian; and (C & D) Section 30, Township 32 South, Range 61 East, Copper River Meridian. The two disposal sites encompass a total of 14.8 acres.

Ferry Terminal: The placement of approximately 75,600 cy of fill material for a marine terminal into 3.8 acres of marine waters of the U.S.

Ferry Breakwaters: The placement of approximately 51,000 cy of fill material for two breakwaters into 2.7 acres of marine waters of the U.S.

Terminal Facility: Dredge approximately 40,000 cy of marine sediment from a 4.4-acre area to the minus 25-foot contour for a mooring basin. The dredged material would be used for the ferry terminal fill area and would be contained behind a six-foot thick layer of rock riprap.

The Corps' ROD is based upon information contained in the FEIS and the stated views and comments of Federal, State, local agencies, the interested public, current national policy and applicable laws and regulations. The possible consequences of all alternatives, have been evaluated in terms of environmental effects, and the public interest, pursuant to 33 CFR 320.4. All factors[4] which may be relevant to my decision were considered, including

[4] These and other factors were addressed in the DEIS and FEIS, Chapter 3.0 (Affected Environment) and Chapter 4 (Environmental Consequences of the Alternatives), which adequately addressed the environmental and public interest factors. No new factors have been identified as a result of this review.

the cumulative effects. These factors included, but were not limited to conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, mineral needs, consideration of property ownership, and in general, the needs and welfare of the people.

II. APPLICANT'S PROPOSED PROJECT: The Department of Army permit application for the proposed road was submitted to the Corps on March 3, 2006, and determined to be complete on April 20, 2006. The location and description of the project was described in the Corps' public notice, dated April 21, 2006, with an expiration date of May 22, 2006 for a total review time of 52 days. ADOT proposed constructing Alternative 2B from the FEIS in their Department of Army (DA) permit application dated March 3, 2006, to discharge approximately 2,942,900 cy of dredged and fill material into approximately 253 acres of waters of the U.S. including forested wetlands, stream channels, deep-water habitat, vegetated shallows, and navigable waters, in conjunction with the construction of a new roadway (50.8-miles long), a ferry terminal, and the associated infrastructure.

The applicant's stated purpose in their DA permit application, was "…to provide improved surface transportation to and from Juneau within the Lynn Canal corridor that will provide the capacity to meet the transportation demand in the corridor, provide flexibility and improve opportunity[5] for travel, reduce travel time between the Lynn Canal communities, reduce state costs for transportation in the corridor, reduce user costs for transportation in the corridor."[6]

III. OVERALL PROJECT PURPOSE: Where the activity associated with the placement of fill material in a special aquatic site (in this instance wetlands) does not require access or proximity to or siting within the wetland in order to fulfill its basic purpose (e.g. the activity is not water dependent) the Guidelines pose two rebuttable presumptions: 1) practicable alternatives not involving wetlands are presumed to be available, and 2) practicable alternatives not involving discharges to wetlands are presumed to have less adverse impact on the aquatic ecosystem. For non-water dependent projects it is the applicant's responsibility to clearly and convincingly rebut these two presumptions.

Failure to rebut the presumptions or otherwise fail to demonstrate compliance with the Guidelines would require permit denial, regardless of a lead federal agency's selection of a preferred alternative through the NEPA process. Stated another way, if the permit application for the preferred alternative is denied by the Corps of Engineers, that alternative (preferred or not) shall not be built. This underscores the critical distinctions that follow with regard to issues such as: purpose and need (for NEPA) versus overall project purpose (for the Guidelines); or preferred alternative (for NEPA) versus Least Environmentally Damaging Practicable Alternative (LEDPA) (for the Guidelines).

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[5] The Corps is using the ADOT definition of 'flexibility and opportunity' which was in terms of numbers of round-trips per day from Juneau to Haines and Skagway. See FEIS, Technical Appendix A (Alternative Screening), page 9, Element 2.

[6] Purpose elements defined in FEIS, Section 1 (Purpose and Need).

The definition of overall project purpose is used in the determination of practicable alternatives since the Guidelines define practicable to mean: "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes" [40 CFR 230.10(a)(2)]. While the definition of overall project purpose is solely the Corps' responsibility, it must take into consideration the applicant's stated purpose for the project (October 15, 1999, Army Corps of Engineers Standard Operating Procedures for the Regulatory Program). It cannot be so restrictive that the applicant's proposal is the only possible alternative or so broad that it makes the search for alternatives meaningless.

After considering the applicant's stated project purpose and need we have defined the overall project purpose as:

> "To provide improved surface transportation with increased capacity to meet demand, provide flexibility, improved opportunity for travel, and reduced travel time between the Lynn Canal communities of Juneau, Haines, and Skagway."

The Corps will not include the cost components used by ADOT in their purpose and need statement. To include the cost components, "reduce state costs for transportation in the corridor, and reduce user costs for transportation in the corridor," would narrowly restrict the Section 404 alternatives analysis to just one alternative, the preferred alternative. For a period of time during our review, "capacity to meet demand" was dropped from the overall project purpose definition because we felt it was clearly implied. However, for clarification purposes and to make certain there were no misunderstandings, we have added "capacity to meet demand" into the Corps' overall project purpose.

IV. SCOPE OF ANALYSIS [33 CFR 325, Appendix B, 7(b)]: The scope of analysis for this Project includes review of the direct, secondary, cumulative, and reasonably foreseeable impacts of the Project, within the Corps control and responsibility, as well as alternatives carried forward for analysis. Project-related impacts not within the Corps control and responsibility were summarized and identified in the secondary and cumulative impact sections of the FEIS.[7]

V. BACKGROUND: A DEIS for the Juneau Access Improvement Project was published in June 1997. The project was subsequently reevaluated in December 2002, wherein a determination was made that substantial changes in the project and documentation were warranted. A Supplemental Draft Environmental Impact Statement (SDEIS) was released to the public in January 2005. The preferred alternative identified in the SDEIS would have constructed a highway all the way into Skagway from the current end of the Glacier Highway at Echo Cove, 40 miles in a (straight-line distance) northwest of Juneau.

The FEIS was published in January 2006. The preferred alternative, Alternative 2B, the East Lynn Canal Highway, extended from Echo Cove to a proposed ferry terminal at the Katzehin River delta. The road was shortened (from the SDEIS to the FEIS) by terminating the road at the Katzehin River delta (not proceeding to Skagway); and proposing ferry service between Skagway as well as Haines, and the Katzehin delta. This change was due to

[7] See FEIS, Section 4.9.3, Summary of Cumulative Impacts.

concerns on how the road to Skagway would affect the Klondike Gold Rush National Historical Park and the surrounding Section 4(f)[8] lands.

The FEIS, dated January 2006, summed up the situation by stating in Section 6[9], that "The SDEIS indicated that a determination of the applicability of Section 4(f) to the natural land that would be crossed by these alternatives[10] would be made at the conclusion of consultation with the National Park Service (NPS) and the SHPO (State Historic Preservation Officer)." In the following paragraph it was stated, "Based on this language, the NPS position on its [FHWA] meaning, and existing FHWA guidance, FHWA has determined that natural areas within the NHL are protected by Section 4(f). Consequently, Alternatives 2, 2A, and 2C have been dropped from the range of reasonable alternatives, based on the original screening criteria."

The ADOT and the FHWA, as a follow-up to their alternative selection process, and after submittal of the Corps permit application to the Corps, negotiated with the United States Forest Service (USFS) to obtain access to the USFS' lands running from vicinity of the Echo Cove area northward toward Skagway. This 'follow-up' action resulted in a Memorandum of Understanding (MOU) between the ADOT, the FHWA, and the USFS: "The purpose of this MOU is to establish a framework and process for granting the reciprocal rights-of-way and easements described in Section 4407 of Public Law 109-59 ("Section 4407"), which provides as follows: "Notwithstanding any other provision of law, the reciprocal rights-of-way and easements identified on the map numbered 92337 and dated June 15, 2005, are hereby enacted into law."[11] Shortly after the MOU was signed, the USFS granted the ADOT a right-of-way easement[12] allowing the ADOT's proposed road to traverse the Tongass National Forest, beginning from just north of Echo Cove northward to the edge of the boundary of the Tongass National Forest, ending approximately one mile southwest of Dewey Lake, southeast of Skagway, and approximately 2.2 miles from entering the City of Skagway.

VI. ALTERNATIVES CONSIDERED:

A. Alternatives for the Road Alignment with and without a Ferry System.

Alternatives considered in the 1997 Draft EIS: Alternatives considered in the 1997 Draft EIS included a No Action Alternative, a highway, and four variations of an all-marine route. These are briefly described below, and are discussed in detail in the 1997 Draft EIS [Section 3, Alternatives Advanced]. Each alternative mentioned below, except for the Shuttle Service from the Auke Bay Alternative, would require extending the highway to Sawmill Cove, just north of Echo Cove, in Berners Bay.

> No Action Alternative: This action would continue the existing Alaska Marine Highway System (AMHS) mainline ferry service in Lynn Canal. For the Corps a No Action Alternative typically means a no build alternative. This No Action Alternative may lead to a decline in existing ferry service, and a change in ferry schedules, which are not subject to DA authorization.

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[8] Hereinafter referred to as 4F in reference to Section 4F of the Department of Transportation Act.
[9] FEIS, Section 6, Section 4F, pages 6-4 and 6-5.
[10] Alternatives 2, 2A, and 2C, from the DEIS.
[11] MOU between the USFS and the ADOT and the ADNR, dated September 22, 2006.
[12] Section 407 of Public Law 109-59, D-1 Easement, dated November 22, 2006. A copy of this easement is available for viewing at the Borough's Recorder, in the City & Borough of Juneau, Alaska.

Highway Alternative: This action would have replaced the mainline ferry system service between Juneau, Haines, and Skagway. A ferry terminal with breakwater would have been located at the north end of the Katzehin River delta, and the existing terminal in Haines would be modified to accommodate end-loading ferries. [This alternative is the same as Alternative 2B of the 2006 FEIS.]

Marine Alternatives: Each of the following four alternatives would have continued to provide service from Juneau to Haines and Skagway, by either augmenting, or replacing the existing AMHS mainline ferry service, with a high-speed shuttle ferry.[13] Also, the existing ferry terminals in Auke Bay, Haines, and Skagway would each require some modification to accommodate end-loading ferries. These alternatives as described in the DEIS were replaced by Alternatives 4A through 4D, respectively, in the 2006 FEIS.

Shuttle Service from Auke Bay: The high speed shuttle would provide three roundtrips per day from Auke Bay to Haines and two to Skagway from Haines and would be supplemented with the AMHS mainline ferry. This alternative is similar to Alternative 4A of the 2006 FEIS except that alternative would include the purchase of two smaller fast catamaran ferries for summer service along with summer and winter mainline service.

Shuttle Service from Berners Bay: This would include one supplemental shuttle ferry from a new Berners Bay ferry terminal during the summer season and from the Auke Bay terminal during the winter season along with AMHS mainline ferry service from Auke Bay. This alternative is similar to Alternative 4B of the 2006 FEIS except that that alternative would require the purchase of two smaller fast catamaran ferries for summer service from Berners Bay and winter service from Auke Bay along with year-round mainline service from Auke Bay.

Shuttle Service North from Auke Bay: The AMHS mainline ferry service north of Auke Bay would be discontinued, but service to Haines and Skagway would continue via the fast ferries. This alternative is similar to Alternative 4C of the 2006 FEIS except mainline service would continue and be supplemented with two conventional monohull shuttle ferries from Auke Bay.

Shuttle Service North from Berners Bay: The Auke Bay ferry terminal would be the northernmost terminus for AMHS mainline ferries. Service to Haines and Skagway would be provided by two high speed shuttle ferries from a new Berners Bay terminal. This alternative is similar to Alternative 4D of the 2006 FEIS except mainline service would continue and be supplemented with two conventional monohull shuttle ferries from Berners Bay.

Alternatives considered in the 2006 Final EIS: The No Action Alternative as well as Alternatives 2B, 3, 4A, 4B, 4C and 4D, which are briefly described below, was discussed in detail in the 2006 FEIS. The FEIS also considered the alternatives discussed in the SDEIS January 2005. See the Summary Table in Section VIII of this ROD.

[13] Eighty-four foot INCAT wave piercing catamaran, which cruises up to 29 miles per hour (mph) with a top speed of 42 mph, and has a capacity of 105 vehicles and 777 passengers.

No Action Alternative[14]: "The No Action Alternative is a reduction below the current level of service due to reduced mainliner frequency in Lynn Canal. Mainliner frequency would be reduced because of projected reduction in the number of mainliners operating in the AMHS." "Current AMHS planning is for the *M/V Aurora* to begin Haines/Skagway service in 2007."

All Fill in Waters of the U.S. = 0.0 Acres

Alternative 2B: East Lynn Canal Highway to Katzehin, Shuttles to Haines and Skagway: This alternative would result in the construction of "...a 50.8-mile long two-lane highway from the end of Glacier Highway at Echo Cove around Berners Bay and along the coast of Lynn Canal to a point north of the Katzehin River delta. The Haines to Skagway shuttle service would continue to operate, with two new shuttle ferries and the *M/V Aurora* forming a three-vessel system connecting Katzehin, Haines, and Skagway. AMHS mainline ferry service would end at Auke Bay and the *M/V Fairweather* would no longer operate in Lynn Canal." The numbers below correspond to the Corps' public notice of the DA permit application which was based on the FEIS alternative.

Roadway Fill in Wetlands	=	55.2 Acres[15]
Roadway Slope Stabilization	=	14.7 Acres[16]
Stream Channel Work	=	1.4 Acres
Roadway Fill in Marine Waters	=	25.6 Acres
Marine Rock Disposal	=	150.0 Acres
Ferry Terminal	=	3.8 Acres
Ferry Breakwaters	=	2.7 Acres
Total Waters of U.S. Filled	=	253.4 Acres
Permanent Loss of U.S. Waters	=	103.4 Acres[17]

Alternative 3: West Lynn Canal Highway: This alternative would extend Glacier Highway 5.2 miles from Echo Cove to Sawmill Cove. New ferry terminals would be constructed at Sawmill Cove and at William Henry Bay. Shuttle ferries would transit (each way) between William Henry Bay and Sawmill Cove. A 38.9-mile highway would be constructed from William Henry Bay northward to Haines. The *M/V Aurora* would continue to operate as a shuttle between Haines and Skagway.

Maximum Wetlands Filled	=	26.4 Acres
Maximum Marine Waters Filled	=	11.6 Acres
Total Other Waters U.S. Filled	=	<2.0 Acres
Total Waters of U.S. Filled	=	<40.0 Acres
Permanent Loss of U.S. Waters	=	<40.0 Acres

Alternative 4A: Fast Vehicle Ferry (FVF) Shuttle Service from Auke Bay. Included the operation of two FVF from Auke Bay to Haines and Skagway. AMHS mainline ferry service would continue in Lynn Canal and

[14] FEIS, Section 2.3.1 Alternative 1 - No Action.
[15] Road fill is within the roadway in wetlands (not slope stabilization).
[16] Slope stabilization includes fill in wetlands on cut slopes.
[17] Permanent loss is determined by taking (Acres of Total Waters U.S. Filled) minus (Acres of Marine Rock Disposal). Marine waste rock will be submerged and will be recolonized by aquatic species, provide habitat, therefore, it will not be calculated as a permanent loss.

the Haines/Skagway shuttle (*M/V Aurora*) would continue to operate. No new ferry terminals would be constructed.

Maximum Wetlands Filled	= 0.0 Acres
Maximum Marine Waters Filled	= <1.0 Acres
Total Waters of U.S. Filled	= <1.0 Acres
Permanent Loss of U.S. Waters	= <1.0 Acres

Alternative 4B: FVF Shuttle Service from Berners Bay. Glacier Highway would be extended 5.2 miles from Echo Cove to Sawmill Cove with a new ferry terminal at Sawmill Cove. Two FVF would provide daily service from Sawmill Cove to Haines and to Skagway in the summer and from Auke Bay to Haines and Skagway in the winter. AMHS mainline ferry service would continue between Auke Bay, Haines, and Skagway. The Haines/Skagway shuttle would continue to operate.

Maximum Wetlands Filled	= 1.9 Acres
Maximum Marine Waters Filled	= <2.9 Acres
Total Other U.S. Waters Filled	= 0.2 Acres
Total Waters of U.S. Filled	= <5.0 Acres
Permanent Loss of U.S. Waters	= <5.0 Acres

Alternative 4C: Conventional Monohull Shuttle Service from Auke Bay. Two conventional monohull shuttle ferries would provide daily summer service from Auke Bay to Haines and Skagway. A single shuttle would alternate between running one day to Haines and one day to Skagway. AMHS mainline ferry service would be provided from Auke Bay twice a week year-round to Haines. The Haines/Skagway shuttle would continue to operate. No new ferry terminals would be constructed.

Maximum Wetlands Filled	= 0.0 Acres
Maximum Marine Waters Filled	= <1.0 Acres
Total Other Waters U.S. Filled	= <1.0 Acres
Total Waters of U.S. Filled	= <1.0 Acres
Permanent Loss of U.S. Waters	= <1.0 Acres

Alternative 4D: Conventional Monohull Shuttle Service from Berners Bay. Glacier Highway would be extended 5.2 miles from Echo Cove to a new Sawmill Cove ferry terminal. Two conventional monohull ferry shuttles would provide service from Sawmill Cove to Haines and Skagway in the summer and alternating day service to Haines and Skagway in the winter. AMHS mainline ferry service from Auke Bay to Haines would continue. The Haines/Skagway shuttle would continue to operate.

Maximum Wetlands Filled	= 1.9 Acres
Maximum Marine Waters Filled	= <2.9 Acres
Total Other U.S. Waters Filled	= 0.2 Acres
Total Waters of U.S. Filled	= <5.0 Acres
Permanent Loss of U.S. Waters	= <5.0 Acres

2003 Modified Alternative 2: East Lynn Canal Highway between Juneau and Skagway, without a Katzehin Terminal.[18] This alternative was dropped from further consideration due to concerns on how the road

[18] This Alternative was discussed briefly in the FEIS, Technical Appendix A, Section 2.0 Alternative Screening, page 13. Also, see the Memorandum of Understanding between the USFS and the ADOT, dated September 22, 2006, with map and Section 4407 D-1 Easement (email from USFS, dated May 30, 2007).

would affect the Klondike Gold Rush National Historical Park and surrounding Section 4(f) lands, an issue raised by the National Park Service.

Alternatives Conclusion: The Corps examined the alternatives found in Section VI, Part A to ensure all reasonable and potentially practicable alternatives were evaluated in this ROD. The Corps determined it was necessary to add a Modified Alternative 3 to address issues raised by the EPA, National Marine Fisheries Service (NMFS) and USFWS, to complete a practicability determination. This alternative was coordinated with ADOT. ADOT provided the acreage of fill placed in waters of the U.S. and ferry capacity calculations.

Modified Alternative 3: This alternative incorporates a change in the operation of Alternative 3 to avoid potential impacts to endangered species in Berners Bay. This alternative would extend Glacier Highway 5.2 miles from Echo Cove to Sawmill Cove. New ferry terminals would be constructed at both Sawmill Cove, and at William Henry Bay. Improvements would be required at the existing Auke Bay terminal. Shuttle ferries would transport vehicles between William Henry Bay and Sawmill Cove. A 38.9-mile highway would be constructed from William Henry Bay northward to Haines. The Sawmill Cove terminal in Berners Bay would be closed for six weeks, mid April to the end of May. The improved Auke Bay terminal would be used during this time; and the ferries would shuttle between Auke Bay and William Henry Bay. The *M/V Aurora* would continue to operate as a shuttle between Haines and Skagway.

Maximum Wetlands Filled	= 26.4 Acres
Maximum Marine Waters Filled	= 11.6 Acres
Total Other Waters U.S. Filled	= <2.0 Acres
Total Waters of U.S. Filled	= <40.0 Acres
Permanent Loss of U.S. Waters	= <40.0 Acres

The Corps determined it was necessary to add a Modified Alternative 2B to address avoidance and minimization issues, and to complete a practicability determination. This alternative took the components of Alternative 2B and examined each component to determine if additional avoidance and minimization was practicable. This alternative was coordinated with ADOT. ADOT provided the acreage of fill placed in waters of the U.S. and new plans.

Modified Alternative 2B: East Lynn Canal Highway to Katzehin, Shuttles to Haines and Skagway: This alternative would result in the construction of "…a 50.8-mile long two-lane highway from the end of Glacier Highway at Echo Cove around Berners Bay and along the coast of Lynn Canal to a point north of the Katzehin River delta. The Haines to Skagway shuttle service would continue to operate, with two new shuttle ferries and the *M/V Aurora* forming a three-vessel system connecting Katzehin, Haines, and Skagway. AMHS mainline ferry service would end at Auke Bay, and the *M/V Fairweather* would no longer operate in Lynn Canal." The road was rerouted to avoid freshwater wetlands, and additional wetland mapping was done at Antler Creek to avoid these wetlands. The marine rock disposal area was reduced in size, and restricted to specific areas. The roadway was redesigned to incorporate additional fill in the road prism.

Roadway Fill in Wetlands	= 44.4 Acres

Roadway Slope Stabilization	=	17.5 Acres
Stream Channel Work	=	1.3 Acres
Roadway Fill in Marine Waters	=	25.6 Acres
Marine Rock Disposal	=	14.8 Acres
Ferry Terminal	=	3.8 Acres
Ferry Breakwaters	=	2.7 Acres
Total Waters of U.S. Filled	=	110.1 Acres
Permanent Loss of U.S. Waters	=	95.3 Acres

B. Discussion of Alternative Ferry Terminal Site Designs and Locations:

The ADOT provided marine ferry terminal designs for several of the sites, under various alternatives: Auke Bay[19], Sawmill site, Slate Creek Cove site, William Henry Bay site, and three designs for the Katzehin River site.

There were several ferry terminal site locations discussed in the FEIS[20], and each was tied to a specific alternative. Each would be either a new facility, or a modification of an existing facility.

WILLIAM HENRY BAY SITE: The terminal would include a single side ferry berth. The transfer bridge is accessed by 24-foot wide by 210-foot long pile-supported dock structures. The long approach dock is necessary to reach sufficient water depths at this site without dredging. The transfer bridge would be raised and lowered via a mechanical lift system. Fixed dolphin structures would be utilized to moor the ferry during pedestrian and vessel transfers. The staging area abuts steep upland topography. The staging area will require some upland excavation into the hillside, but will consist mostly of tideland fill. A total upland area of 1.9 acres is shown. No dredging is contemplated at this terminal location. Vessels would not berth overnight at this site.

SAWMILL COVE SITE: The site is relatively well protected from southeast winds but is exposed to the northerly fetch of Berners Bay and, to some extent, refracted waves from Lynn Canal. The berth would consist of two bridge support floats and a shared dolphin system comprised of all-tide floating fenders. Access to the vessels would be via twin 143-foot steel transfer bridges. The staging area would be constructed as a combination of tideland and upland fill that would encompass approximately 3.1 acres. The existing upland topography is relatively steep and most of the staging area would be constructed near the tidelands in order to avoid deep excavation of the hillside. The offshore topography drops into deep water beyond the minus 20-foot contour line making construction of pile structures difficult. Dredging is required to move the facility towards the shore to limit the water depth at the outer mooring structure.

SLATE CREEK COVE WEST: This site would be situated on the west side of the Slate Creek Cove. This facility would be a single side berth consisting of a steel transfer bridge abutting offshore fill and supported at the seaward end by a steel bridge float. There would be fixed dolphin structures with all-tide floating fenders or fixed mooring faces. This site would not be a home-port for a vessel. The uplands[21] would be constructed as a combination of intertidal and upland fill. Some local

[19] Master Plan for the Auke Bay facility.
[20] FEIS, Appendix D, Technical Alignment. Attachment D, Marine Terminal Concepts. November 21, 2003.
[21] The ADOT use of 'upland' could include both uplands and wetlands of the U.S.

excavation of an existing beach-front bluff would be needed. Total fill for the staging area is 2.1 acres. No dredging would be required.

SLATE CREEK COVE EAST: On the East side of Slate Creek Cove, is a site currently operated by Coeur Mineral Alaska, Incorporated (Coeur). The existing moorage facility, which has a float dock with a ramp to the road, and a large barge loading ramp built in Slate Creek Cove. This facility was constructed to support the Kensington Gold Mine. The Coeur site is not owned by the State, and will not be available for the duration of the mine, a minimum of 12 years (if no road is built). This site has no utility to the State with out a road, and at that time would no longer be required by Coeur for daily worker operations, and could be potentially available to the State for an interim terminal.

KATZEHIN RIVER SITE: This project site is situated just north of the mouth of the Katzehin River. The upland topography north of the river mouth becomes extremely steep and rugged. Deep water depths are encountered immediately north of the river delta. The north side of the river delta was chosen as the terminal location. It affords some southern wave protection, has access to deeper waters, and has ample land area for construction of uplands[22]. One of the stated reasons in the FEIS for the ADOT selecting the Katzehin River site for a marine terminal was the availability of "ample land area for construction of uplands"[23]. However, little to no construction activity for the terminal was proposed on existing adjacent uplands, other than road construction. This was due to the presence of a bald eagle nest tree which is located in the immediately adjacent uplands.

The three layouts, for the Katzehin site, varied in area of impact from 1.9 acres of waters of the U.S., up to 67 acres of waters of the U.S. Each is briefly described below[24].

Layout 1: A fill structure with a lift bridge, and a mooring system unprotected from wave action from the north. Approximately 1.9 acres of waters of the U.S. would be impacted.

Layout 2: Two breakwater structures protecting a vehicle transfer bridge: one would be on the north side of the facility, and the other on the south. The site would have a dredged moorage basin, and approximately 5.9 acres of U.S. waters would be impacted.

Layout 3: A dredged moorage basin, 67 acres, would be enclosed by a breakwater. Total area of impact to U.S. waters would be approximately 100 acres.

Design and Location Conclusion: The Corps examined the designs and locations found in Section VI, Part B, to ensure that all reasonable and potentially practicable site designs and alternatives were evaluated. The Katzehin site, layout 2, was reduced in footprint to a 4.4 acre dredged mooring basin with breakwaters.

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[22] The ADOT uses the 'discharged fill in U.S. waters' interchangeably with 'uplands'.

[23] Later conversation with the ADOT after publication of the FEIS revealed that the ADOT defines the fill which could be discharged into waters of the U.S., as providing "ample land area", which should not to be confused with existing uplands.

[24] See FEIS, Appendix W, Technical Report Addenda, pages W-69 through W-87.

C. **Discussion of Alternative Material Disposal Sites:**

ADOT's Preferred Material Discharge: Alternative 2B stated that approximately 1.4 million cy of waste rock would be discharged into pre-selected deepwater locations within Lynn Canal. ADOT's proposal was that the material would be deposited indiscriminately over a 150-acre area containing marine intertidal and subtidal substrate. No consideration was given to whether the material would be deposited in a single pile, or spread evenly out in a thin layer over the entire 150 acres, or in a combination of the two. ADOT anticipated that, due to the generalized method of material dumping by barge mounted equipment, the final topography of the marine substrate would be 'lumpy', which is described as the ocean bottom (Lynn Canal) having small hills (discharged fill) with open areas in between, with no more than 30% of the proposed 150-acre area covered. The ADOT subsequently stated in various correspondences that the final selection of disposal sites and methods would be left up to the contractor(s) awarded the contract on the road project.

Modified Alternative 2B changed the open water disposal of waste rock to approximately 430,000 cy into 14.8 acres of navigable waters of the U.S., using designated locations for the disposal sites. The shorelines adjacent to the marine sites where open-water disposal was proposed were investigated and evaluated with respect to habitat types and this information was discussed in the FEIS. The habitats were separated into three categories: (a) sediment beaches, (b) bedrock cliffs and vertical rock faces, and (c) a combination of beach and bedrock.

(a) Sediment beaches are characterized by having "…varying combinations of boulder, cobble, gravel, sand, and/or silt." Each site was distinctly divided into three zones:

- High intertidal: with populations of black lichen, with periwinkle, acorn barnacle, limpets, and small isopods such as *Ligiea pallasii.*
- Mid intertidal: with populations of *Fucus*, green algae, brown algae, and sea lettuce; periwinkle, acorn barnacle, and blue mussels.
- Lower intertidal: with populations of red algae (both coralline and filamentous) and brown algae, sea lettuce; limpets, sponges, chitons, and green sea urchins.

(b) Bedrock cliffs and vertical rock faces are characterized by being almost all rock with little to no sediment. The marine habitat included *Fucus*, brown algae, sea lettuce and red algae. No faunal organisms were observed due to the "nature of the survey".

(c) Combination of Beach and Bedrock. The faunal and floral species making up this combination include those in (a) and (b) above.

The FEIS, Appendix N, Essential Fish Habitat, Table 4.1 Subtidal Fill/Side-casting Sites noted that there is a crab harvest in the area. No resource agency expressed an objection to the placement of waste rock in the Modified Alternative 2B areas. The EFH review completed for the 150 acres covered the area found in 14.8 acre disposal site. No adverse EFH issues were raised on the disposal site.

Upland Disposal Locations: The majority of the uplands along the road corridor are public lands managed by the USFS. The applicant stated[25] that they had discussed the road project with the USFS and that it has "been a long-established policy going back before the start of this project" to not allow "waste sites or stockpiles during project development" on USFS lands. The applicant provided the Corps a copy of a May 23, 2006, letter from the USFS to the FHWA that stated the right-of-way conditions the USFS would require. This included the following condition:

> "The Grantee shall establish no borrow, sand, or gravel pits; stone quarries, permanent storage areas; sites for highway operation and maintenance facilities, camps, supply depots, or disposal areas within the right-of-way; unless shown on approved construction plans, without first obtaining approval of the Regional Forester, provided that rock and aggregate located within the designed clearing limits may be moved along the highway for use at other locations."

The USFS stated in a March 21, 2005, letter[26] to the ADOT that the excess rock was a "valuable National Forest Resource." The USFS also recommended "more analysis and the development of alternative methods to better utilize this valuable rock resource." ADOT continued to reduce the volume of waste rock by incorporating passing lanes and turn outs in the project design for use within the right of way in Modified Alternative 2B. The availability of additional unencumbered USFS uplands within the right of way is limited in the project site.

Permanent Storage and/or Stockpiling for a community structure: The applicant stated in an August 16, 2006, letter to the Corps that it would be cost prohibitive to barge the waste rock to a local community for stockpiling, but not cost prohibitive to barge the rock for immediate use to the same community. The ADOT also provided an analysis showing that it would cost $22.94/cy to transport and offload the rock to an upland area at the nearest community for a total cost of $32,109,126[27]. ADOT stated that this is not practicable since it would be 3 to 10 times more than the cost of rock at existing rock sources in these communities. This increase in cost is caused by "double handling" the material, e.g., unloading and stockpiling, then reloading and hauling the rock to a construction site. ADOT stated that it would be practicable to transport the rock to these same communities for a marine project requiring such rock, since the only cost would be for barging, but ADOT was not aware of any such marine projects.

Disposal Sites Conclusion: 40 CFR Part 230.10, states in part: "(a)...no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." With the change to two disposal sites, totaling 14.8 acres, no other marine sites with less impact are available. Ocean dumping when confined to the two designated locations "A & B" and "C & D", has the least environmental impact on the aquatic ecosystem. The USFS is unlikely to designate and permit large disposal areas with their accompanying access roads on USFS lands which might also impact additional waters of the U.S. ADOT has clearly demonstrated that

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[25] October 24, 2006, e-mail message from Reuben Yost, ADOT Juneau Office.

[26] See FEIS, page 7-17

[27] The change in anticipated volume of waste rock to 430,000 cy, would result in changing the total cost of barging to the nearest community to $9,864,200, or one third of ADOT'S original anticipated cost.

no upland disposal sites exist for the proposed waste rock. Therefore, Modified Alternative 2B satisfies 40 CFR Part 230.10, that there are no practicable alternative disposal sites available which would have less adverse impact on the aquatic ecosystem.

VII. PROJECT COSTS:

The Corps reviewed the costs presented in the FEIS for construction, maintenance, and operation for the alternatives listed in Section VI of this ROD. The costs are included in the Summary Table found in Section VIII of this ROD, page 24. The capital, construction, operation, maintenance, and life cycle costs were not a deciding factor in the 404(b)(1)analysis of the least environmentally damaging practicable alternative.

VIII. ANALYSIS OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE:

As discussed in Section III, the overall project purpose, is to "to provide improved surface transportation with increased capacity to meet demand, provide flexibility, improved opportunity for travel, and reduced travel time between the Lynn Canal communities of Juneau, Haines, and Skagway." Furthermore, as noted in the Guidelines, the analysis of alternatives required for NEPA environmental documents will, in most cases, provide the information for the evaluation of alternatives under the Guidelines. On occasion, these NEPA documents may address a broader range of alternatives than required to be considered under the Guidelines. The alternatives discussed in the FEIS covered an appropriate range of alternatives for the current proposal, and the alternatives considered in the analysis in Section VI under the Guidelines are essentially the same.

Based on information provided in the FEIS, the application, and reviewing the acreages of impact to waters of the U.S. for each of the proposed alternatives, the No Action Alternatives and Alternatives 4A and 4C would have the smallest permanent impact to the aquatic environment over the anticipated life of the project. See the Summary Table page 24.

In Modified Alternative 2B construction of the highway from Echo Cove north to the Katzehin River would result in the discharge of approximately 430,000 cy of waste rock into 14.8 acres of marine subtidal waters of the U.S. The bottom substrate at the proposed offshore disposal sites was anticipated to be predominantly mud. The addition of rock fill would result in a temporal modification of the habitat, that is, this action would result in replacing one type of marine ocean bottom habitat with another. The new rocky bottom would have increased surface area which would be recolonized by invertebrate marine species; and therefore, would not result in a permanent loss of ocean bottom habitat.

The Corps' evaluation places special emphasis on the persistence and permanence of the effects described in this ROD and the FEIS [see 40 CFR 230.10(c)]. The permanent loss of aquatic habitat (wetlands)[28] functions and values by the road construction in waters of the U.S. by Alternative 2B or Modified 2B would be more damaging than the temporary loss of subtidal

[28] The majority of the wetlands to be impacted would be heavily forested, with some scrub-shrub forest mix.

habitat from the waste rock disposal in the marine waters[29]. There would be a marine discharge associated with the road construction in the following situations: 1) for construction of the Katzehin River delta ferry terminal; 2) at small near shore intertidal and subtidal marine fills where the proposed road would be constructed in or immediately adjacent to Lynn Canal; and 3) in the case of steep topography, where the discharges could not be avoided in marine waters due to the confined work space. Road and ferry terminal fills would be permanent impacts to waters of the U.S.

Impacts to waters of the U.S.[30] at William Henry Bay: The ferry terminal at William Henry Bay would be built between two cataloged anadromous fish streams; in-water construction windows would protect anadromous and marine species as necessary. No effects are expected on anadromous EFH [Essential Fish Habitat] at the Beardslee River or William Henry Creek due to construction of a ferry terminal in William Henry Bay. Pile driving for the construction of the ferry terminal could disturb humpback whales in the area.

Appendix N, Essential Fish Habitat, page 5-30, stated "...orange sea pens are common in the deeper (30 to 60 feet), northern part of the site, and sea whips were also noted in the deep, northeastern corner (greater than 57-foot depths)."[31] In addition, there were no documented herring spawning areas on the west side of Lynn Canal[32].

Steller sea lions were observed at the William Henry Bay site, as this is a known foraging area. However, there are no documented haul-out sites located on the west side of Lynn Canal. [33]

Impacts to waters of the U.S. [34] at Sawmill Cove: "...Approximately 3.2 acres of intertidal/subtidal habitat would be filled or dredged for the Sawmill Cove Ferry Terminal. The impact to 3.2 acres of intertidal and subtidal habitat, the replacement of natural substrates due to terminal construction, and the dredging of approximately 26,000 cy for a mooring basin would alter habitat usage in the disturbed area. Filling would result in the loss of habitat while dredging and ongoing use would substantially reduce habitat value in the dredged areas. The Sawmill Cove Ferry Terminal would cover approximately 300 feet (0.06 mile) of shoreline at MLLW. This is less than 2 percent of the alongshore herring spawning length (approximately 3 miles) observed in Berners Bay in 2003. This habitat loss would impact Pacific herring spawning because the Sawmill Cove site provides spawning habitat for this species. Eulachon (hooligan) start showing up in Berners Bay early April and usually peak around mid-April to early May, and are up the rivers and spawned out by mid-May. They enter the bay on the west side (Point St. Mary) and stay to that side, including Slate Creek Cove while they aggregate for their runs up the rivers."[35] The Sawmill Cove Ferry Terminal is over a mile from anadromous

[29] The discharge into marine waters would temporarily cover the existing rock substrate with rock material which in turn would become substrate for recolonizing life forms. However, the discharge in wetlands would result in a permanent conversion of waters of the U.S. to uplands

[30] FEIS, Appendix N, Essential Fish Habitat Assessment. Page 5-33.

[31] Sea Pens and Sea Whips are coralline organisms listed as special aquatic sites (40 CFR Part 230.44, Coral Reefs).

[32] FEIS, Appendix N, Essential Fish Habitat Assessment, "Reconnaissance Evaluation of Ecological Effects to Forage Fish Populations Associated with the Project, dated October 2004.

[33] FEIS, Appendix S, Steller sea lion.

[34] FEIS, Appendix N, Essential Fish Habitat Assessment, "Reconnaissance Evaluation of Ecological Effects to Forage Fish Populations Associated with the Project, dated October 2004.

[35] Email from Mr. Carl Schrader of the Alaska Department of Natural Resources, Habitat Division on August 17, 2007.

Sawmill Creek. Typical breasting dolphins used for ferry terminals allow for free passage of fish. Pile driving for the construction of the ferry terminal could disturb humpback whales in the area. Neither the in-water fill for the ferry terminal building/parking areas, nor the ferry terminals themselves would impede fish movements to and from Sawmill Creek or within Berners Bay. The incremental effect of the Sawmill Cove Ferry Terminal on Pacific herring stock is relatively small -- this would be an EFH impact because of the depressed herring stock in Lynn Canal. Maintenance and operations of the Sawmill Cove Ferry Terminal could cause temporary disturbance to Steller sea lions in Berners Bay, particularly in late April and early May, while they are feeding on spring forage fish aggregations. NMFS has expressed concern that yearly operations of the ferry terminal at Sawmill Cove could have potential adverse direct and indirect effects on Steller sea lions.[36]

Appendix N, Essential Fish Habitat, page 5-30, stated "In the subtidal zone, one location of orange sea pens (*Ptilosarcus gurney*) was noted in the northern third of the site (estimated at an area of 21,500 square feet; depth ranging from 50 to 80 feet)".

Impacts to waters of the U.S.[37] at the Katzehin Site: The ferry terminal basin and building/parking area construction activities at the Katzehin location would have effects on intertidal sediment beaches and subtidal mud bottom habitat marine EFH, but not on the site's sparse subtidal vegetation. No effects on anadromous EFH would be expected at the Katzehin terminal site due to its distance from the Katzehin River or other anadromous streams. In addition, in-water construction windows would be established if necessary to protect anadromous and marine species. Pile driving for the construction of the ferry terminal could disturb humpback whales in the area. There are known Steller sea lion haul-out sites located on the east side of Lynn Canal at Gran Point, Met Point, and within Berners Bay. There are foraging areas for Steller sea lions on the east side of Lynn Canal. Foraging by humpback whales and Steller sea lions takes place south of the Katzehin delta in Lynn Canal, and specifically within Berners Bay during herring spawn.[38]

NMFS concurred that the activities associated with the Project are not likely to adversely affect the endangered humpback whale, the threatened eastern distinct population segment (eDPS) of the Steller sea lion, the endangered western distinct population segment (wDPS) of the Steller sea lion, or the Steller sea lion critical habitat.[39]

The Corps' and the FEIS' 'environmentally preferred' alternative, is Alternative 4C, which is ferry-based in part, has a permanent loss of less than one acre. Concerns have been expressed because of the speed of fast ferries would result in greater impact to marine species during a ferry/wildlife collision: this concern would apply to all alternatives that would employ one or more ferries in their design. Since both alternatives 4A and 4C would use the existing Auke Bay ferry terminal, environmental impacts would be minimal.

Alternatives 3, 4B and 4D would each require a new ferry terminal in Berners Bay at Sawmill Cove, and this would result in increased, direct and indirect

[36] FEIS, Section 4, Environmental Consequences of the Alternatives, page 4-109.
[37] FEIS, Appendix N, Essential Fish Habitat Assessment, page 5-22.
[38] FEIS, Figure 3-20.
[39] NMFS to FHWA in a letter dated August 7, 2007.

environmental impacts, e.g. threatened and/or endangered species[40]. Modified Alternative 3, would avoid conflicts with the threatened and endangered species by alternating the Auke Bay ferry terminal with the Sawmill Cove marine terminal during a six-week period when herring spawn in Berners Bay. Two alternative sites could be found in Slate Creek Cove. One site is located on the eastern shore and one on the western shore. See Section VI, Part B, ferry terminal sites and designs.

The ADOT stated[41] that "While Alternative 3 would impact fewer acres of wetlands and marine waters than Alternative 2B; the impacts are greater in that they are to higher value habitat that is limited in the area." ADOT concluded that "...due to the impacts to Berners Bay and William Henry Bay, Alternative 3 is more damaging to the aquatic environment than Alternative 2B." However, the impacts alluded to were to (1) the coralline organisms; and (2) the potential impacts to ESA species that would occur during the six week period each year when the herring spawn in Berners Bay. Both the NMFS and the EPA (see EPA comment letter, dated June 6, 2006, below) noted this, and the EPA went on to state "The applicant's proposed conservation measures for Alternatives 4B and 4D would allay EPA's concerns about potential impacts on herring spawning in Berners Bay. Alternatives 4B and 4D include ferry service from Berners Bay in the summer and from Auke Bay in the winter. To avoid impacts on herring spawning, ferry operations in Berners Bay would not begin until after the herring spawning period. The same conservation measures could be applied to Alternative 3 (i.e., ferry service from Berners Bay year round, except ferry service from Auke Bay during the herring spawning period). Under this scenario, Alternative 3 is clearly less damaging to the aquatic ecosystem than Alternative 2B." The Corps concurs that Modified Alternative 3 is less damaging to aquatic resources when compared to Alternative 3 and Alternative 2B. The only 'unique' characteristics identified for either side of Lynn Canal was at the marine terminal sites at Sawmill Cove and William Henry Bay: the presence of sea pens and/or sea whips. These special aquatic sites were located on the northern fringe of each of the project areas (William Henry Bay and Sawmill Cove).

Practicability Demonstration:[42] The ADOT demonstrated that four of the evaluated alternatives[43] were not practicable in light of the Corps overall project purpose[44]. Page S-1 of the FEIS stated that it was, "dropping alternatives that are no longer reasonable..." Further, page S-2 of the FEIS stated, "Following are brief descriptions of the reasonable[45,46] alternatives evaluated in the Final EIS" and the alternatives are those described above. The FEIS stated that "...the original marine options in the 1997 Draft EIS were based on improving service in Lynn Canal with the marine technology prevalent

[40] FEIS, Section 4, Environmental Consequences of the Alternatives, page 4-109. Alternative 3 does not affect any identified Steller sea lion haul out sites or designated critical habitat.
[41] FEIS, Appendix X, page X-109.
[42] "Practicability" is defined in the Section 404(b)(1) Guidelines at 40 CFR 230.10(a)(2) and considers "cost, existing technology, and logistics in light of the overall project purpose".
[43] FEIS, page S-2, Alternatives Evaluated in the Final Environmental Impact Statement, and Section 2.2.8 Original Marine Alternative 4, Options A through D. This also includes the No Action Alternative presented in the DEIS.
[44] Corps ROD, Section III, Overall Project Purpose.
[45] Reasonable is defined by the Council of Environmental Quality as Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.
[46] The ADOT used the term 'reasonable' as opposed to 'practicable' in its own practicability analysis, which is not the same analysis, which the Corps uses to determine practicability.

in the mid-1990s. All four options utilized the same vessel, the high-speed Wavepiercer catamaran, capable of carrying 105 vehicles. As with the highway alignment adjustments that occur to reduce impacts or utilize new information, new Alternatives 4A through 4D replace the original marine options from the 1997 Draft EIS. The original marine options are variations that are no longer relevant, and therefore were dropped from further consideration." The FEIS listed[47] a number of alternatives as 'reasonable' that were evaluated further in the FEIS: these are the alternatives briefly described above (see *Alternatives considered in the 2006 Final EIS*). Alternatives 4A, 4B, 4C, and 4D all provide fewer round-trips between Juneau and Skagway/Haines than Alternatives 2B, Alternative 3, Modified Alternative 3, or Modified Alternative 2B. Alternatives 4A, 4B, 4C, and 4D all provide longer travel times between Juneau and Skagway/Haines than Alternatives 2B, Alternative 3, Modified Alternative 3, or Modified Alternative 2B. During an October 26, 2006, meeting between the Corps and the ADOT, the ADOT stated that "Alternative 4C was not practicable because: 1) it would not meet demand or capacity, and 2) it does not lower user costs. Alternatives 4A, 4B, 4C, and 4D do not increase capacity when compared to the other alternatives including the No Action Alternative (See Factors Table).

The No Action Alternative and Alternatives 4A, 4B, 4C, and 4D all fail to sufficiently accommodate demand, and fail to provide sufficient flexibility, for travel between the Lynn Canal communities of Juneau, Haines, and Skagway. Therefore, the Corps concludes that the No Action Alternative, and Alternatives 4A, 4B, 4C, and 4D are not practicable in light of the Corps' overall project purpose.

Permanent Aquatic Losses:[48] Alternative 2B would result in the largest permanent acreage loss of aquatic habitat, which is primarily forested wetlands, but does include marine intertidal and subtidal waters. The functional values of the wetlands within the proposed highway corridor were investigated[49] and determined to include groundwater recharge, wildlife habitat, and nutrient transport. Placement of fill material into these aquatic areas would reduce these wetland functions to zero. Upon completion of the road construction, the developed areas might regain some habitat value (e.g. wildlife habitat) over time, but no wetland functions. This replacement of one habitat type with another would not be expected to occur in the short term.

The functional values along the highway corridor would cease immediately with land clearing operations with the possible exception of ground water recharge. The continued presence of humans and equipment would ensure that the project site was devoid of all habitat values, or 'zero-function'[50]. The resultant conversion of wetlands to uplands would be permanent.

Construction of a ferry terminal facility at the Katzehin River delta would require the permanent filling of approximately 6.5 acres of marine waters, plus the dredging of 4.4 acres of navigable waters of the U.S. Dredging, however, would only result in the modification of fish and wildlife habitat functions, and would be a temporary impact. The dredged material would be

[47] FEIS, Chapter 2, page 2-7, Table 2-1.
[48] FSEIS, Chapter 3, Section 3.12.3, and Chapter 4, Section 4.12.3.
[49] Juneau Access Improvements FEIS, Appendix O, Wetlands, Table 4-4
[50] Zero-function is defined here as having no vegetation or water sources present, and having only bare ground and therefore providing no habitat functions such as food sources, cover from predation, nesting sites, all of which is supportive of wildlife and/or fish populations.

used on site in the ferry terminal fill. The Katzehin terminal site would be recolonized with various faunal and floral species on the permanent structures in marine waters (piles, armor rock, floats, etc.)

The process of open-water disposal of waste rock into marine waters would initially kill[51] most plant and animal organisms at the points of impact/coverage on the ocean bottom. However, the discharged material could provide a multi-textured bottom substrate for a larger variety of marine floral and faunal organisms than currently inhabit the area and in turn would become substrate for recolonizing life forms.

Alternative 3 and Modified Alternative 3 would result in fewer wetland and marine acres permanently filled than Alternative 2B or Modified Alternative 2B.

Travel Time: Travel times for each alternative were expressed in the FEIS in terms of travel from Auke Bay to Skagway. The information given below was provided in Table 2, Appendix X[52].

	Alternatives[53]						
FACTOR	**No Action**	**2B**	**3**	**4A**	**4B**	**4C**	**4D**
Summer Travel Auke Bay to Skagway (hours)	3.8/9.1	3.0	4.2	4.1/9.1	3.8/9.1	6.3/9.1	5.3/9.1
Summer Travel Auke Bay to Haines (hours)	3.5/7.1	2.5	2.9	3.8/7.1	3.5/7.1	6.0-7.1	5.0-7.1

The differences in travel times range from 2½ hours to nearly 10 hours, with Alternative 2B providing the shortest travel time with Alternative 3 a close second. Travel times increase for Modified Alternative 3 during the six-week herring spawn window.

Alternative 2B would have a marine terminal located north of the Katzehin River and use ferry travel between the Katzehin marine terminal and Haines and Skagway to reduce the overall travel times between Juneau and Haines and/or between Juneau and Skagway.

The ADOT defined "flexibility and opportunity" in terms of numbers of round-trips per day, and provided the following supporting information:

	Alternatives						
FACTOR	**No Action**	**2B**	**3**	**4A**	**4B**	**4C**	**4D**
# of Round Trips per week from Auke Bay to Skagway	7	42	42	16	16	9	16
# of Round Trips per week from Auke Bay to Haines	8	56	84	16	30	9	16

Note that with Alternative 2B, the FEIS lists the numbers of round-trips possible from Auke Bay to Skagway and Haines. These are vehicle round trips. The FEIS stated that with the selection of Alternative 2B, no ferries would travel northward from Auke Bay, only from the Katzehin marine terminal.

[51] Plant burial or animal organisms by suffocation, blocking the gills with sediment.
[52] Draft Section 404/10 Permit Application, Draft Section 404(b)(1) Analysis, Wetlands Finding, page X-99.
[53] The times are presented in format: Fast Ferry / Mainliner Ferry. Also, staging (docking, maneuvering, etc., associated with ferry arrivals and departures are included in the ferry travel times.

However, the FEIS did state that "winter travel would be limited by road closures for avalanche control; however, one or more ferries would be available to shuttle vehicles and passengers in Lynn Canal on days when the highway is closed."[54]

Alternative 3 would have a ferry system to transport vehicles and people across Lynn Canal (Sawmill Cove to/from William Henry Bay), but not from Auke Bay to Skagway or Auke Bay to Haines. Modified Alternative 3 would provide transport from Auke Bay to William Henry Bay.

Meeting Vehicle Demand: According to FHWA and ADOT, Alternative 2B best accommodates the initial and the 30-year average daily traffic, summer travel, and total vehicle demand, when compared to the other alternatives.[55] [56]. Under Alternative 2B, and Modified Alternative 2B up to 670 vehicles (per day, 30th year annual average) would be accommodated, as compared to Alternative 3, and Modified Alternative 3, which would only accommodate up to 530 and 474 vehicles per day, respectively, a difference of 140 and 196 vehicles, respectively. The No Action Alternative and Alternatives 4A, 4B, 4C and 4D would each carry less than 30 per cent of the anticipated daily vehicle demand. This very low capacity to meet the anticipated daily demand makes the No Action Alternative, Alternative 4A, Alternative 4B, Alternative 4C, and Alternative 4D not practicable from a logistical perspective.

The peak travel time begins in the spring (peak season is May to September). This is the time during which Modified Alternative 3 would be implemented yearly. Modified Alternative 3 reduces the daily capacity, during the critical spring window, from 1008 vehicles daily to Haines to a maximum of 336 vehicles (See Summary Table). April (two weeks) and May (all) traffic is therefore limited to the 336 vehicle capacity to Haines. This logistical limiting factor forever limits travel to a number that is substantially less than the projected demand. This is a reduction of 672 vehicles a day. ADOT has also stated that the reduced capacity and the inability to meet demand would result in a decreasing demand. ADOT concluded that 9,575 fewer vehicles would be transported during the first year. ADOT must plan on this logistics restriction yearly. The presence, magnitude, or exact timing of the herring run can not be predicted by year. Even though herring only spawn once every fifth or sixth year in Berners Bay Modified Alternative 3 would result in a yearly reduction in capacity, not a once every fifth or sixth year reduction. Fuel delivery, crew schedules, and ferry schedules all must be planned and set in place well in advance. The logistics of running a ferry system are complicated by a move from one terminal to another terminal for the same run every year. This loss of capacity gets worse over time as the projected as the unconstrained demand increases. Auke Bay becomes a bottle neck six weeks a year, every year, reducing the ferry travel capacity in Lynn Canal each spring.

The FHWA indicated in their December 4, 2007, letter to the Corps, that Modified Alternative 3 would handle only one half of the overall demand by the 30th year of operation. The use of Modified Alternative 3 also increases the travel time from Juneau to Skagway. Half the people requiring ferry travel would be left behind each ferry cycle in the 30th year. This situation would not reduce the travel time for the majority of people traveling from Juneau to Skagway or from Juneau to Haines. The FHWA concluded that the

[54] FEIS, Chapter 2 (Project Alternatives), page 2-11.
[55] ADOT's letter dated October 8, 2007.
[56] FHWA's letter to the Corps, dated December 4, 2007.

increase in travel time to Skagway and the inability to meet the projected demand makes Modified Alternative 3 not practicable.

The Corps concludes that the combined problems of meeting capacity; the increased logistical support requirements to manage two east side ferry terminals in Lynn Canal for the same run; the reduction in capacity of 9,575 vehicles in year one; reduction in peak season capacity (May) and two weeks in April to a maximum of 336 vehicles daily; and the increasing failure to meet capacity over time all combine to render Modified Alternative 3 not practicable.

In contrast, Alternative 2B and Modified Alternative 2B will handle three-fourths of the overall demand initially and 72% by the 30th year. In addition, Alternative 2B, and Modified Alternative 2B, will provide substantially more spring time capacity (544 vehicles daily) than Modified Alternative 3 (336 daily) to Haines: more capacity to Skagway 636 versus 101 vehicles daily; require the operation of only one east side Lynn Canal Ferry terminal; and the short ferry distance from Katzehin to Haines and Skagway allows the ferry route to meet daily projections immediately. The shorter distance allows for eight daily trips from Katzehin to Haines to increase the carrying capacity, and reduce the wait time, and thus decrease the travel time. Alternative 2B and Modified Alternative 2B therefore, provides sufficient capacity to meet demand, provides flexibility, provides improved opportunity for travel, and reduces travel time between the Lynn Canal communities of Juneau, Haines, and Skagway as defined in the Corps' overall project purpose.

PRACTICABILITY CONCLUSION:

The No Action Alternative, Alternatives 4A, 4B, 4C and 4D would each carry less than 30 per cent of the anticipated daily vehicle demand. This very low capacity to meet the anticipated daily demand makes the No Action Alternative, Alternative 4A, Alternative 4B, Alternative 4C, and Alternative 4D not practicable from a logistical perspective.

Alternative 3 would have unacceptable adverse impacts on Endangered Species, and was not an acceptable alternative. Alternative 3 was replaced by Modified Alternative 3 at the recommendation of EPA to avoid impacts to endangered species.

Modified Alternative 3 was found not practicable from a logistical perspective. The combined problems of meeting capacity; the increased logistical support requirements to manage two east side ferry terminals in Lynn Canal for the same run; the reduction in capacity of 9,575 vehicles in year one; the reduction in peak season capacity (May) and two weeks in April to a maximum of 336 vehicles daily; and the increasing failure to meet capacity over time all combine to render Modified Alternative 3 not practicable.

Therefore, Alternatives 3, Modified Alternative 3, 4A, 4B, 4C, and 4D, were all determined to be not practicable after taking into consideration cost, existing technology, and logistics in light of the overall project purpose. Logistics and technology were the deciding factors in this analysis.

Alternative 2B has a permanent loss of 103 acres of waters of the U.S. Modified Alternative 2B has a permanent loss of 95 acres of waters of the U.S.

When the Alternative 2B derivatives were compared, Modified Alternative 2B was found to be the least environmentally damaging practicable alternative considering cost, existing technology, and logistics in light of the overall project purpose. Logistics and technology were the deciding factors in this analysis.

SUMMARY TABLE[57]

FACTOR	No Action	2B	2B Mod	3	3 Mod	4A	4B	4C	4D
ENVIRONMENTAL IMPACTS									
Number of river/stream crossings.	0	46	46	32	32	0	5	0	5
Wetland acres filled.	0	69.9	61.9	26.4	26.4	0	1.9	0	1.9
Other Waters of U.S. filled.	0	1.4	1.3	0	0	0	0	0	0
Total acres of marine waters filled.	0	182.1	46.9	11.6	11.6	1	2.9	1	2.9
Total acres of U.S. Waters filled.	0	253.4	110.1	<40	<40	<1	<5	<1	<5
Permanent loss of acres of U.S. Waters.	0	103.4	95.3	<40	<40	<1	<5	<1	<5
Essential Fish Habitat acres impacted.	0	36.4	36.4	12.9	12.9	0	3.2	0	3.2
COSTS									
Initial capital costs (millions).	0	258	NC[58]	268	280	131	142	111	103
30-life cycle costs (millions).	267	352	NC	375	385	495	482	326	313
TRAVEL TIMES									
Summer travel Auke Bay to Skagway (hours).	3.8/9.1	3.0	3.0	4.8	4.8	3.8/9.1	3.5/9.1	6.0/9.1	5.0/9.1
ROUND TRIPS									
# of ferry round trips per week from Auke Bay to Skagway.	7	42	42	42	42	16	16	9	16
# of ferry round trips per week from Auke Bay to Haines.	8	56	56	84	84	16	30	9	16
MEETING VEHICLE DEMAND									
Initial annual average daily traffic & total demand accommodated.	90 17.6%	380 74.5%	380 74.5%	310 60.8%	284 55.7%	140 27.4%	170 33.3%	100 19.6%	130 25.5%
30th year annual average daily traffic & total demand accommodated.	130 14.0%	670 72.0%	670 72.0%	530 57.0%	474 51.0%	220 23.6%	270 29.0%	150 16.1%	200 21.5%
Summer capacity to Haines (vehicles per day).	96	544	544	1008	1008 May 336	229	284	154	208
Summer capacity to Skagway (vehicles per day).	71	636	636	408	408 May 101	223	227	149	203

[57] The Summary Table displays data from agency input, conclusions reached in the previous sections of this ROD, and the FEIS, Appendix X, Part B, ADOT Revised Tables 1, 2, pages X-98 and X-99, and the Corps Public Notice.
[58] Costs Not Calculated (NC) but will be higher than those of Alternative 2B. Avoidance and minimization would increase construction costs.

IX. FINDINGS:

1. OTHER REQUIRED AUTHORIZATIONS:

   A. The Alaska Department of Environmental Conservation (ADEC) has issued a Certificate of Reasonable Assurance, dated June 26, 2006, with 10 conditions.

   B. The Alaska Department of Alaska Natural Resources (ADNR), Office of Project Management and Permitting, Alaska Coastal Management Program, has issued a Final Consistency Response (Concurrence), dated June 27, 2006. The ADNR, Office of Habitat Management and Permitting (OHMP) issued four fish habitat permits for the project on June 30, 2006. All the OHMP permits prohibited work below the ordinary high water of anadromous fish streams from March 15 to June 15 to protect out-migrating salmon.

2. COMMENTS RECEIVED:

   A. The ADOT responded by letter, dated June 12, 2006, addressing some of the comments received in response to the Corps Public Notice, dated April 21, 2006. The ADOT letter included a copy of the transcripts from the public hearings, which were held by the ADOT and the FHWA in accordance with National Environmental Policy Act (NEPA) regulations. The public hearings were held on February 16 and 17, 2005, in Juneau, Alaska, on February 23, 2005, in Haines, Alaska, and on February 24, 2005, in Skagway, Alaska (see case file, volume IV).

   B. FEDERAL AGENCIES

   Environmental Protection Agency (EPA):

   Comment letter dated June 12, 2006. The EPA's comments respective to the project centered on the 404(b)(1) Guidelines after describing the importance of the area as an aquatic resource of national importance (ARNI) in their cover letter. The EPA stated "The proposed highway may have substantial adverse effects on aquatic resources within the Berners Bay Land Use Designation II (LUD II) Management Area. This special area designation by Congress underscores the national importance of this area." The EPA concluded their letter by stating that "…EPA is committed to resolving these issues consistent with the process and timelines specified in the 1992 MOA [Clean Water Act Section 404(q) Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army]."

   ADOT RESPONSE TO EPA COMMENT LETTER: The ADOT provided a detailed response to the EPA letter, of June 12, 2006, on August 16, 2006 (their responses are provided below). Corps personnel also met with personnel from ADOT, FHWA, EPA, USFWS, and NMFS on July 17 and July 24, 2006, to discuss the EPA issues. ADOT stated that Congress did not designate the Berners Bay area as a wilderness, as they did with six other areas, when they enacted the Tongass Timber Reform Act of 1990. The Berners Bay area was also not designated as wilderness under the 1980 Alaska National Interest Lands Conservation Act. Congress, instead, designated this area as a LUD

II area which "specifically allows road construction to meet transportation needs identified by the State." The ADOT states that previous Alaska Governor Hickel indentified this need in 1994 and "both the Knowles and Murkowski administrations have pursued a project to meet this need." The ADOT further stated that they have minimized impacts to this area as the project would impact approximately 17 acres of wetlands within Berners Bay drainages, but less than one acre of this would be within the LUD II area.

EPA ISSUE #1: "…there is insufficient information at this time to nullify the presumption that practicable alternatives to the proposed road are available."

ADOT RESPONSE TO EPA ISSUE #1: The ADOT reiterated that the only practicable alternative is the proposed project, based primarily on cost, and they provided further documentation to support this statement. The ADOT included a copy of a May 12, 2003, letter from the Executive Office of the President Council on Environmental Quality (CEQ) to Secretary of Transportation (Mr. Norman Minetta) regarding a project's "purpose and need" statement. The CEQ letter states, "In the case of a proposal intended to address transportation needs, joint lead or cooperating agencies should afford substantial deference to DOT agency's articulation of purpose and need." The letter continues to state that if involved agencies have problems with the purpose and need statement then they should raise those issues immediately and elevate them to higher level decision makers for resolution. The ADOT states, "EPA chose not to elevate the issue" so the DEIS, FEIS, and the Corps' application included the unchanged purpose and need statement.

The ADOT explained that the state and user costs were an inseparable part of the transportation problem that the project was trying to address. ADOT included a pie chart that showed the high cost to maintain and operate the State ferry system, $136 million for 23 million miles traveled, versus the lower cost to maintain the State highways at $72 million for 2.4 billion miles traveled. ADOT concluded that it cost $5.91 per mile traveled to operate and maintain the ferry, and 3 cents per mile traveled to operate and maintain the State highways.

The ADOT also refuted the EPA allegation that costs cannot be considered in the purpose and need statement. The ADOT stated "nothing in the [404(B)(1) Guidelines nor in EPA memoranda precludes cost reduction in the project purpose, nor can EPA staff cite an EPA policy statement on this issue". Conversely, the ADOT included a June 11, 1999 letter from the EPA that was sent to the ADOT office in Fairbanks regarding the McCarthy Road in Wrangell-St. Elias National Park. The EPA letter states, "...we [EPA] may concur with a purpose and need statement for the McCarthy Road Improvement Project that indicates the following: Purpose: The purpose of the project is to provide improved surface access to McCarthy. Need: (1) to correct structural/ safety problems; (2) to reduce maintenance costs; and (3) to increase road capacity."

The ADOT also attached the EPA/Corps "Memorandum: Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements." The ADOT quoted

section 3.b. of the memorandum that states, "The determination of what constitutes an unreasonable expense should generally consider whether the projected cost is substantially greater than the costs normally associated with the particular type of project." The ADOT notes that "nothing in these statements precludes consideration of operation costs" and the FEIS clearly states that cost is part of the current transportation problem.

CORPS RESPONSE TO EPA ISSUE #1: The Corps concurs that at the time of EPA's 404(q) letter that EPA's issue statement was correct. The Corps has since compiled sufficient information to allow for an independent evaluation of the alternatives' practicability. Our independent analysis of the alternatives and the practicability determination is found within this ROD. See III - OVERALL PROJECT PURPOSE, VI - ALTERNATIVES CONSIDERED, and VIII - ANALYSIS OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE.

EPA ISSUE #2: "The federal government pays for most capital costs, whereas the state government and transportation users pay for most maintenance and operating costs. Consequently, conditioning the overall purpose on reducing state and user costs tilts the playing field towards the proposed project because roads generally have higher capital costs and lower maintenance and operating costs, whereas ferries generally have lower capital costs and higher maintenance and operating costs. The Guidelines level this uneven playing field by considering cost per se in the alternative analysis, regardless of who pays for those costs."

CORPS RESPONSE TO EPA ISSUE #2: The Corps concurs that within the State of Alaska the Federal Government has been paying a large share of the capital costs on large transportation projects. The State of Alaska has been responsible for paying the maintenance and operation costs on these projects. It is the Corps' responsibility to take into consideration the applicant's stated purpose for the project when establishing overall project purpose. The Corps cannot be so restrictive that the applicant's proposal is the only possible alternative or so broad that it makes the search for alternatives meaningless. After considering the applicant's stated project purpose and need, and considering EPA's comments the Corps defined the overall project purpose. The Corps did not include "reduction of state and user costs for transportation in the corridor". The overall project purpose was defined as: "To provide improved surface transportation with increased capacity to meet demand, provide flexibility, improved opportunity for travel, and reduced travel time between the Lynn Canal communities of Juneau, Haines, and Skagway." See II - APPLICANT'S PROPOSED PROJECT, and III - OVERALL PROJECT PURPOSE, in this ROD.

EPA ISSUE #3: "EPA recommends that DA clearly articulate its rationale for determining which of the action alternatives pass the basic purpose test."

CORPS RESPONSE TO EPA ISSUE #3: The 'basic purpose' test applies to the discharge of dredge and fill material into special aquatic sites, and the proposed project includes the discharge of fill material into other waters of the U.S., such as the proposed marine discharges into intertidal and subtidal waters. Where the activity

associated with the placement of fill material in a special aquatic site (in this instance wetlands) does not require access or proximity to or siting within the wetland in order to fulfill its basic purpose (e.g. the activity is not water dependent) the Guidelines pose two rebuttable presumptions: 1) practicable alternatives not involving wetlands are presumed to be available, and 2) practicable alternatives not involving discharges to wetlands are presumed to have less adverse impact on the aquatic ecosystem. The basic purpose of a road is ground transportation; the basic purpose of bridge abutment is to support structural crossing of an area (in this case a waterway), e.g., a bridge; the basic purpose of a staging area is to provide a work space. A road does not need siting in special aquatic sites to fill the basic purpose of providing a transportation corridor for vehicles. While the ferry alternatives considered may be water dependent because the ferry uses water to reach other land, the Corps does not authorize ferry operations; nor does the Corps authorize bridges over navigable waters, only those discharges of dredged of fill material associated with bridge construction (e.g. bridge abutments, concrete poured for the pilings/piers) located in waters of the U.S. Only the ferry dock (the Corps would be authorizing the dock in waters of the U.S. for ferries) requires siting in wetlands because the wetlands, which must be crossed, are located in or adjacent to the waterway that the ferry would use. Bridge abutments may need to be near the water, if the bridge is crossing water; however, they do not require siting in waterways and can be pulled back from the water by making the bridge spans longer. None of the Corps authorized activities except the ferry terminals require access or proximity to, or siting within, a wetland to fulfill their basic purpose; therefore, they are not water dependent.

The definition of overall project purpose is used to determine if an alternative is practicable in light of the overall project purpose. The Guidelines define practicable to mean: "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes" [40 CFR 230.3(q)]. The Corps established the overall project purpose for the project. See III - OVERALL PROJECT PURPOSE, and Corps response to EPA Issue #2, in this ROD.

Section 10 of the Rivers and Harbors Act of 1899 applies to the construction of any structure in, under, or over any navigable water of the United States, the excavating from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters. The substantive evaluation criteria for this authority is the Corps' public interest review (33 CFR Part 320.4(a)) and NEPA.

EPA ISSUE #4: "Therefore, if DA determines that any of the other action alternatives are capable of achieving the basic project purpose, then any such alternative is also practicable." This statement followed a long narrative about how the EPA disagreed with the ADOT by including state (operation and maintenance) costs and user costs in their project purpose since the EPA believes only capital costs can be considered in the alternatives analysis.

ADOT RESPONSE TO EPA ISSUE #4: The ADOT stated in their response letter that the LEDPA is the proposed project, Alternative 2B. They explained that the ferry Alternatives (4A-4D) do not meet the project purpose and are not practicable based on cost. They stated that Alternative 3 would be "more environmentally damaging than Alternative 2B when considering the value of the aquatic resources that would be impacted."

CORPS RESPONSE TO EPA ISSUE #4: Because an alternative is capable of achieving the basic project purpose does not mean that it is automatically a practicable alternative. The practicability of an alternative is a separate question that must be answered, hence, the discussion found in VIII - ANALYSIS OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE, in this ROD. For an example one could propose a 51 mile road built on pilings in marine waters from Cascade Point to Katzehin as meeting the basic project purpose, providing a transportation corridor. However, the road on pilings alternative would not be practicable when costs were evaluated. The pilings alternative would end up being astronomically expensive. The Corps in its practicability determination and evaluation took costs into consideration. However, capital costs, construction costs, operation and maintenance costs, and life cycle costs were not a deciding factor in the practicability determination. The practicability determinations for the Project were made on whether the alternatives were available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes. Logistics and technology were the deciding factors in this analysis.

The Corps completed a review and analysis of all alternatives as defined by the Guidelines, and found that the No Action Alternative and Alternatives 4A, 4B, 4C, and 4D all fail to sufficiently accommodate demand, and fail to provide sufficient flexibility, for travel between the Lynn Canal communities of Juneau, Haines, and Skagway. Therefore, these alternatives were not practicable in light of the Corps' overall project purpose.

Alternative 3 was found to adversely impact endangered species. The Corps concluded that the combined problems of meeting capacity; the increased logistical support requirements to manage two east side ferry terminals in Lynn Canal for the same run; the reduction in capacity of 9,575 vehicles in year one; the reduction in peak season capacity (May) and two weeks in April to a maximum of 336 vehicles daily; and the increasing failure to meet capacity over time all combined to render Modified Alternative 3 not practicable after taking into consideration cost, existing technology, and logistics in light of the overall project purposes. Logistics and technology were the deciding factors in this analysis.

Alternative 2B has a permanent loss of 103 acres of waters of the U.S. Modified Alternative 2B has a permanent loss of 95 acres of waters of the U.S.

It was concluded that Modified Alternative 2B is the least environmentally damaging practicable alternative considering cost, existing technology, and logistics in light of the overall project

purpose. Logistics and technology were the deciding factors in this analysis. For these reasons, Modified Alternative 2B is the LEDPA. See III - OVERALL PROJECT PURPOSE, VI - ALTERNATIVES CONSIDERED, and VIII - ANALYSIS OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE, in this ROD.

EPA ISSUE #5: "…if DA determines that any of the other action alternatives are practicable, then the proposed disposal sites for the discharge of dredged or fill material must be specified as failing to comply with the requirements of the [Section 404(b)(1)] Guidelines (40 CFR 230.12(a)(3)(i))."

CORPS RESPONSE TO EPA ISSUE #5: A disposal site analysis was completed for the Project. ADOT agreed that it was possible to reduce the footprint of the marine water waste disposal area from the 150 acres in Alternative 2B to 14.8 acres in Modified Alternative 2B. The waste rock disposal footprint was then restricted to locations "A & B" and "C & D". The 150 acre waste rock disposal area was reviewed by NMFS as part of the Corps Public Notice. The 14.8 acre site is with in the reviewed area. No EFH issues exist with the 14.8 acre site. In addition, waste rock from the road cuts was incorporated into the construction of the road prism. The design changes further reduced the volume of material that needed to be wasted in marine waters to 430,000 cy. No upland sites were found practicable for waste rock disposal. See VI - ALTERNATIVES CONSIDERED, Part C, in this ROD.

EPA ISSUE #6: "We also recommend that DA perform an independent evaluation of whether any of the action alternatives in the FEIS, or any combination or variation thereof, are practicable and less damaging."

CORPS RESPONSE TO EPA ISSUE #6: The Corps completed its own independent evaluation of the alternatives found in the FEIS. The Corps then completed a practicable analysis and determination in accordance with the Guidelines. See VI - ALTERNATIVES CONSIDERED Parts A, B, and C, and VIII - ANALYSIS OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE, in this ROD.

EPA ISSUE #7: "…EPA recommends that DA restate the project purpose by excluding any reference to state costs and user costs. We also recommend that DA perform an independent evaluation of whether any of the action alternatives in the FEIS, or any combination or variation thereof, are practicable and less damaging."

CORPS RESPONSE TO EPA ISSUE #7: The Corps agrees and defined the overall project purpose, excluding state and user costs. See Corps response to EPA Issue #2, #3, #4, #5, #6.

EPA ISSUE #1 FROM ELEVATION, 21 MAY 2008 LETTER: "The Draft ROD does not evaluate a variation of Alternative 3 (hereinafter referred to as "Alternative 3B"), which EPA recommended on April 17, 2008. In light of new information regarding a proposed ferry terminal at Yankee Cove, EPA recommends that DA consider modifying Alternative 3 by: 1) moving the ferry terminal from Sawmill Cove (in Berners Bay) to Yankee Cove (outside of Berners Bay); 2) eliminating the 5.2 mile road segment from Echo Cove to Sawmill

Cove; and 3) replacing the M/V Aurora with an existing fast ferry (e.g., the M/V Fairweather or the M/V Chenega) to provide faster ferry service between Haines and Skagway. Alternative 3B is less environmentally damaging than Alternatives 2B, Modified 2B, 3, 3A, 4B and 4D because it avoids all environmental impacts within the Berners Bay area, which EPA previously identified as an Aquatic Resource of National Importance. Alternative 3B also appears to be practicable because it is available and capable of being done considering cost, technology and logistics in light of overall project purposes. More specifically: it meets the project purpose by substantially increasing capacity (i.e., number of vehicles per day) and flexibility (i.e., number of round trips per day), and decreasing travel time (i.e., number of hours per one way trip); it does so at a reasonable cost using existing technology; and it solves the logistical problem associated with Alternative 3A."

CORPS RESPONSE TO EPA ISSUE #1 FROM ELEVATION: EPA first suggested Alternative 3B, Yankee Cove, mentioned above during informal consultation procedures by e-mail from an EPA staffer on April 18, 2008. The suggestion was included in an informal consultation table to show issues resolved and unresolved between the two agencies. We informally told EPA that it was unnecessary to include a new alternative in our ROD. The Project FEIS contains an analysis of alternatives and we have used those, with appropriate variation in our 404(b)(1)analysis in this ROD. EPA formalized their request for Yankee Cove analysis by letter of May 21, 2008, signed by the Region 10 Administrator. The following analysis is supplied at the request of EPA, and is not from the Project FEIS.

Yankee Cove, Alternative 3B, was only suggested after Coeur Minerals, the operator of the Kensington Gold Mine, proposed that Yankee Cove function as a passenger ferry terminal for the Kensington Mine. Coeur Minerals proposed the use of Yankee Cove to eliminate the use of the Cascade Point Terminal. Coeur Minerals predicted that 20% of the time they will fly crews by helicopter to the mine site rather than taking the passenger ferry from Yankee Cove to Slate Creek Cove. Coeur Minerals proposed a helicopter pad at Yankee Cove for the transport of mine workers when the seas are too rough to transit.[59]

Yankee Cove is a small bight located on Lynn Canal, and is exposed to winter storms. Yankee Cove is completely exposed to the southeast and has only minimal protection from the north. There currently is a dock facility located on site. The current dock facility, owned by the Yankee Cove Development Company, consists of a bulkhead with a barge landing, and a 20-foot by 80-foot timber dock. Yankee Cove is located at the mouth of Bessie Creek, which has an anadromous fish run.[60] *There is a constructed reef for fish habitat in close proximity to the Yankee Cove facility permitted to NMFS.*

Passenger ferries proposed for the Kensington Mine are personnel transport vessels that are 100' length by a 30' beam. These

[59] DA permit application for the Kensington Gold Mine received on April 24, 2008.
[60] Kensington ROD dated March 29 2006

passenger ferries require a dock with a ramp for workers to walk down, and a depth of -10 MLLW. [61]

A vehicular AMHS ferry terminal requires a minimum depth of 20 feet under keel (sea bottom of at least -25 feet MLLW). The existing Yankee Cove facility can not be used by the AMHS. The exposure problem would be unacceptable at Yankee Cove, as the State would need a twin berth facility to overnight and service two approximately 250-foot long vehicle ferries (42 vehicles each) requiring a minimum depth of 20 feet under keel. Furthermore, because the AMHS facility would need to provide stern berths, vessels would need to back up to the facility while completely exposed to a SE wind and swell. A permanent State ferry terminal requires adjacent land for staging vehicles before boarding, parking for ferry workers, a maintenance facility, and public rest rooms. There is very little available land adjacent to Yankee Cove, and most of it is privately owned. Much of the available land is currently in use by the Adlersheim Lodge business, and there likely will be additional requirements for parking for mine workers; or buses used for transport; in addition to maintenance facilities for the mine passenger ferries; and a helicopter landing pad. A State ferry terminal for any alternative must be a National Highway System link; and all legal vehicle traffic must be accommodated. Access to Yankee Cove is currently via a steep, single lane road with a hairpin turn that cannot accommodate buses, RVs, or long trucks. The limited amount of land between the highway and the shore and the elevation of the highway preclude creating a standard access. For a vehicular ferry ADOT would have to have a separate facility. The current facility in Yankee Cove is not adequate for the AMHS.[62]

In addition to the difficulty in locating a AMHS vehicle ferry terminal at Yankee Cove, there is the problem of the extra distance from Yankee Cove to William Henry Bay (as compared to the Sawmill Cove to William Henry Bay distance) that would be traversed. The approximately 4.2 nm longer distance would add approximately 34 minutes to each circuit. This precludes an eight-hour crew from making more than two round trips, or a 12-hour crew from making more than three trips. Therefore, daily trip frequency in summer would be at most eight trips, and in winter three trips, based on the parameters established for evaluating all alternatives. This would result in a lower level of demand generated and accommodated. It is not just a matter of using a larger vessel to provide the same level of capacity. ADOT stated that reducing capacity and the inability to meet demand results in a decreasing demand. The new alternative suggested by EPA would have the same or greater effect on total demand that was demonstrated with Alternative 3 modified at 55.7% initially, and 51% after 30 years (see summary table page 24 ROD). The alternative 3M reductions were due in part to six weeks of terminal change, and less frequent ferry trips. Operation from Yankee Cove would result in year around reductions in the ability to meet demand not just for six weeks.[63]

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[61] Original Goldbelt DA permit application for Cascade Point.
[62] Email to Corps from ADOT dated May 23, 2008.
[63] Ibid

The Corps concludes that the changes described for Alternative 3 modified and Alternative 3B are so similar as to have the same resultant impact on capacity. The combined problems of meeting capacity; the reduction in year one capacity; and the increasing failure to meet capacity over time all combine to render Alternative 3B not practicable.

The Corps also concludes that the environmental impacts would be substantially similar for the ferry terminals in Modified Alternative 3 and Alternative 3B. There are no significant new circumstances or information relevant to environmental concerns bearing on the proposed action or its impacts. The elimination of the road construction in Alternative 3B to Sawmill Cove would eliminate any fill placement in Berners Bay.

The earliest Juneau Access investigation of potentially feasible routes for highways and ferry connections in Lynn Canal was in the May 1994 Juneau Access Improvements Reconnaissance Engineering Report. With regard to a ferry terminal on the Juneau road system to access a West Lynn Canal Highway alternative (later to be identified as Alternative 3), the report identifies Echo Cove as a possible terminal site, but states "sites at either Bridget Cove or Sawmill Cove appear to merit consideration during further studies". Smaller coves or bights were not recommended for consideration because they were obviously too small and too exposed. On June 16, 1994 the DOT&PF Regional Preconstruction Engineer directed the Pre-design Group Chief to "study selective sites between Auke Bay and Berners Bay for placement of a shuttle ferry terminal", based on the anticipated need for an interim terminal that would also fit well with the three build alternatives being studied at that time. On June 22, 1994 the Regional Reconnaissance Engineer investigated four sites with the AMHS Port Captain, the Marine Facilities Supervisor, and the Regional Geologist. The sites selected for investigation (Cascade Point, Sawmill Creek South, Sawmill Creek, and Sawmill Cove) were selected based on "Approach Characteristics, Turning Basin Characteristics, Water Depths, Exposure to Wind and Waves, Access to Proposed Land Route, Adjacent land Features, Access to Water, Sewer, and Electricity, and General Beach Alignment". Note that Bridget Cove and Echo Cove (originally identified in the Reconnaissance Report) were not selected for further evaluation, because of exposure, shallow water depth, and poor turning basin characteristics for Bridget Cove and poor turning basin characteristics and shallow water depth for Echo Cove, as they would meet other criteria such as access to the land route.[64]

Yankee Cove was not considered suitable for an AMHS ferry terminal as well as other small bays and bights along Lynn Canal. The Project FEIS contains reference to the 1994 selection criteria report at section 2.1 Alternative Screening.

Using a fast ferry between Haines and Skagway for a west side highway alternative would make only a small difference in the total travel time between Juneau and Skagway. The "at speed" distance (11.4 nm) for the Haines-Skagway ferry is such that traveling at 32

[64] Ibid.

knots rather than 15 knots only reduces the travel time by at most 24 minutes. The total travel time would still be longer than for the fast ferry trip under the No Action Alternative.[65]

EPA ISSUE #2 FROM ELEVATION, 21 MAY 2008 LETTER: "The analysis of the Least Environmentally Damaging Practicable Alternative (LEDPA) in the draft ROD does not identify clear criteria and thresholds for determining which alternatives are practicable. Thus, the draft LEDPA analysis tends to emphasize favorable facts that support the draft conclusion and overlook unfavorable facts that may lead to a different conclusion. For example, the draft ROD determines that Alternatives 3 and Modified 3 (i.e., 3A) fail to satisfy the project purpose, in part because these alternatives meet the 30 year forecast demand to a lesser degree than Alternatives 2B and Modified 2B. However, Alternatives 3, 3A and 3B provide significant transportation improvements over the no action alternative. In fact, Alternatives 3, 3A and 3B outperform Alternatives 2B and Modified 2B on the number of round trips per day and the number of vehicles per day between Juneau and Haines. In light of these facts, and in the absence of clear criteria or thresholds, DA could conclude that Alternatives 2B and Modified 2B fail to satisfy the project purpose. Therefore, EPA recommends that the final ROD identify clear criteria and thresholds for determining which alternatives are practicable. For example, one such criterion could be that an alternative must at least partially meet a majority (two or more) of the three purpose elements (i.e., capacity, flexibility and travel time) to satisfy the overall project purpose. This criterion is similar to Criterion III on page 2-1 of the Final Environmental Impact Statement. In addition, DA could establish minimum thresholds for each purpose element to satisfy the overall project purpose (e.g., a five-fold increase in number of vehicles per day, a five-fold increase in the number of round trips per day, and a ten percent decrease in travel time). The analysis of the LEDPA in the draft ROD does not identify clear criteria, and thresholds for determining which alternatives are practicable."

CORPS RESPONSE TO ISSUE #2 FROM EPA ELEVATION: We disagree with EPA's assertions and conclusions in their letter of May 21, 2008 on our LEDPA analysis. We concluded in this ROD, in Section VIII:

No Action Alternative, Alternatives 4A, 4B, 4C and 4D would each carry less than 30 per cent of the anticipated daily vehicle demand. This very low capacity to meet the anticipated daily demand makes the No Action Alternative, Alternative 4A, Alternative 4B, Alternative 4C, and Alternative 4D not practicable from a logistical perspective.

Alternative 3 would have unacceptable adverse impacts on Endangered Species, and was not an acceptable alternative. Alternative 3 was replaced by Modified Alternative 3 at the recommendation of EPA to avoid impacts to endangered species.

Modified Alternative 3 was found not practicable from a logistical perspective. The combined problems of meeting capacity; the

[65] Ibid.

increased logistical support requirements to manage two east side ferry terminals in Lynn Canal for the same run; the reduction in capacity of 9,575 vehicles in year one; the reduction in peak season capacity (May) and two weeks in April to a maximum of 336 vehicles daily; and the increasing failure to meet capacity over time all combine to render Modified Alternative 3 not practicable.

Therefore, Alternatives 3, Modified Alternative 3, 4A, 4B, 4C, and 4D, were all determined to be not practicable after taking into consideration cost, existing technology, and logistics in light of the overall project purpose. Logistics and technology were the deciding factors in this analysis.

Alternative 2B has a permanent loss of 103 acres of waters of the U.S. Modified Alternative 2B has a permanent loss of 95 acres of waters of the U.S.

When the Alternative 2B derivatives were compared, Modified Alternative 2B was found to be the least environmentally damaging practicable alternative considering cost, existing technology, and logistics in light of the overall project purpose. Logistics and technology were the deciding factors in this analysis.

The Corps finds there is adequate explanation and analysis in the ROD to determine the practicability of all the alternatives.

The Corps concluded above in the response to Elevation Issue #1 that Modified Alternative 3 and Alternative 3B are so similar as to have the same resultant impact on capacity. Since there is no advantage to Alternative 3B over Modified Alternative 3 with respect to practicability there is no value in or need to analyze Alternative 3B further.

EPA appears to have misunderstand part of our LEDPA analysis under Section VIII, in this ROD. An examination of the chart below taken from Section VIII of the ROD shows that EPA, in an attempt to make a point, does not tell the complete story:

	Alternatives						
FACTOR	**No Action**	**2B**	**3**	**4A**	**4B**	**4C**	**4D**
# of Round Trips per week from Auke Bay to Skagway	7	42	42	16	16	9	16
# of Round Trips per week from Auke Bay to Haines	8	56	84	16	30	9	16

The number of trips between Auke Bay and Skagway and between Auke Bay and Haines is established by ferry round trips in the no action alternative. To say that one alternative outperforms another based solely on this one chart is not using all the available information. In the chart, more ferry trips in alternative 3 or 3M does not mean that the 30th year annual average daily traffic & total demand is accommodated. The number of trips does not equate to meeting capacity. (A discussion of capacity, frequency, travel time, by alternative is found in the FEIS pages 2-9 through 2-25. Analysis in the FEIS is found on pages 4-38 through 4-40, pages 4-

85 through 4-88, pages 4-118 through 4-120, pages 4-138 through 4-140, and ADOT Revised Tables 1 and 2. Also see the summary table in ROD.)

The Corps does not believe it appropriate to use the criterion and elements found in Section 2.1 of the FEIS for the 404(b)(1) LEDPA analysis. While Section 2.1 is fully compliant with NEPA, it is not entirely suitable for our Section 404(b)(1) analysis; thus we developed a separate 404(b)(1) analysis in this ROD to determine the practicability of the alternatives.

Section 2.1 of the FEIS used the following four criterions.

"•Criterion I - Cost/Technical Feasibility and Common Sense. Using professional judgment and cost data from previous analyses, the alternatives were screened to determine if they would be economically and/or technically feasible or go against common sense.

•Criterion II - Appropriateness and Unnecessary Variations. Alternatives were screened to determine if certain variations were unnecessary to consider a full spectrum of alternatives.

•Criterion III - Purpose and Need. To be reasonable, an alternative must at least partially meet a majority (three or more) of the five Purpose and Need elements. Alternatives were screened with regard to the Purpose and Need elements as follows:
•Element 1 - Meet Future Capacity Needs. An alternative should provide sufficient capacity to meet the projected traffic demand for that mode.
•Element 2 - Provide Flexibility and Opportunity for Travel. An alternative should provide for more round-trips per day from Juneau to Haines and Skagway than the No Action Alternative.
•Element 3 - Reduce Travel Time. An alternative should have a quicker one-way travel time from Juneau to Haines/Skagway than the travel time of the No Action Alternative.
•Element 4 - Reduce State Annual Costs for Transportation in Lynn Canal. An alternative should have estimated annual maintenance and operations (M&O) costs that are less than the 1997 M&O estimated costs for the No Build Alternative. (The 2004 No Action Alternative M&O cost estimates were unknown at the time of this screening.)
•Element 5 - Reduce User Cost. An alternative should have a lower one-way travel cost from Juneau to Haines/Skagway than the current cost under the No Action Alternative. (The No Action Alternative costs were estimated from the summer 2003 AMHS ferry schedule.)

•Criterion IV - Environmental Factors. This screening process used information regarding specific social environment, physical environment, and biological environment impacts to determine if an alternative has an impact so great that it should not be considered reasonable. These environmental impact factors included cultural resources, lands protected by Section 4(f) of the Transportation Act, Congressionally designated wilderness, Wild and Scenic Rivers, bald eagle nest trees, threatened and endangered species, and special aquatic sites. Note: The strongest test of capacity/demand is the degree to which an alternative provides capacity to meet the

total demand (including latent demand) in the corridor. However, it is not reasonable to design the marine segment of an alternative to meet the total demand when it is clear that actual demand is affected (reduced) by user cost and time delay associated with that mode. Designing for full demand even though it is not expected would unrealistically drive up the costs of the alternative. Therefore, each alternative was designed to meet the projected 30-year average daily summer travel demand for the limiting marine segment of the alternative."

Considering EPA's comments and looking only at the "elements" above it is apparent that two of the elements (#4 and #5) are cost elements which are not part of the Corps' overall project purpose determined under 404(b)(1). The Corps overall project purpose is "To provide improved surface transportation with increased capacity to meet demand, provide flexibility, improved opportunity for travel, and reduced travel time between the Lynn Canal communities of Juneau, Haines, and Skagway." As explained in this ROD, our determination of overall project purpose is consistent with EPA's earlier comments. See III - OVERALL PROJECT PURPOSE, See VIII - ANALYSIS OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE, in this ROD. In our analysis, for an alternative to be practicable it had to be able to satisfy the overall project purpose. We used a rigorous, effective analysis, fully compliant with the 404(b)(1) Guidelines, to determine the LEDPA. We considered the factors of cost, logistics, and existing technology in light of the overall project purpose. We looked at flexibility, demand, capacity, opportunity for travel, and reduced travel times. See Section VIII of the ROD, and the individual headings: Practicability Determination, Permanent Aquatic Losses, Travel Time, and Meeting Vehicle Demand. No further refinement is required.

Special Conditions Recommended by the EPA:

The EPA recommended eight special conditions. The substance of the EPA's recommendations which are necessary to satisfy the public interest criteria, have been edited and/or reworded and would be incorporated into the Corps permit, if authorized, except where noted.

Suggested EPA Condition #1: The measures in the document[66], "Mitigation Commitments Relevant to Section 404 of the Clean Water Act" shall be followed.

CORPS RESPONSE TO EPA CONDITION #1: The Corps agrees to carry this condition. This condition is found in the compensatory mitigation special conditions. The use of in lieu fees is allowed by Corps and EPA mitigation policy. In lieu fees must be paid to a fund for which the Corps has a working agreement. This condition is in compliance with the April 10, 2008, Final Compensatory Mitigation Rule issued jointly by EPA, and the Corps. The new rule gives the Corps two years to work with and correct agreements completed prior to the April 10, 2008 rule. The Corps will review all in lieu fee

[66] The referenced document was an attachment to the application, submitted to the Corps on March 3, 2006.

agreements in Alaska in compliance with the new rule. See DA special conditions #4a-h, and #32.

Suggested EPA Condition #2: "Replace the proposed road fill between the Antler River and the Lace River with a causeway on pilings."

ADOT RESPONSE TO EPA CONDITION #2: The ADOT stated that it would be cost prohibitive to bridge the entire 5,700-foot wide peninsula as a bridge would cost an additional $25 million at $4,400 per foot.

CORPS RESPONSE TO EPA CONDITION #2: This condition will not be carried on the Corps' permit. The Corps believes that adding a piling supported causeway for the whole peninsula has little wetland benefit. The original wetland studies and the 1997 DEIS, used existing NWI maps for most of the project area, but there were several locations where delineations were done. It was decided that field wetland delineations should be made at several locations to verify the existing NWI maps:
** Slate Creek - there were two determinations, one east of the creek and one west of the creek.*
** Antler River mouth - there were two determinations east of the river.*
** Lace/Berners River delta - one determination on an island.*
** Katzehin River mouth - there was one determination at the proposed bridge crossing of a special aquatic site, and two determinations north of the river. The wetland field determinations for these four areas were performed during the summer of 2004 in accordance with methods presented in the 1987 Corps of Engineers Wetlands Delineation Manual. Based on this delineation data ADOT agreed to extend the proposed bridges on the peninsula. ADOT agreed to extend the proposed bridges, and bridge an additional (anadromous) stream and adjacent wetlands that were discovered during the wetland delineation in 2006. With the plan change no wetlands would be filled on the peninsula. ADOT submitted revised drawings to the Corps. See sheet 51 of 103 of the plans.*

Suggested EPA Condition #3: If the Antler River to Lace River causeway is found not practicable, "then extend the proposed bridges for the Antler and Lace Rivers so as to avoid placing fill material in any adjacent wetlands."

ADOT RESPONSE TO EPA CONDITION #3: ADOT stated that the project, as originally applied for, would have resulted in impacting 2.6 acres of wetlands. The ADOT recently delineated this area and found that the wetlands were not as extensive as shown on the National Wetland Inventory maps. In addition, ADOT agreed to extend the bridges and bridge an additional (anadromous) stream that was discovered during the wetland delineation so that no wetlands would be impacted on the peninsula. The ADOT submitted revised drawings to the Corps showing this change. See August 16, 2006 letter to Corps. Also see sheet 51 of 103 of the plans.

CORPS RESPONSE TO EPA CONDITION #3: We agree to carry this condition. See DA special condition #11.

Suggested EPA Condition #4: "Install one additional wildlife underpass at the most appropriate location between the proposed Katzehin River Bridge and the proposed Katzehin ferry terminal."

ADOT RESPONSE TO EPA CONDITION #4: The ADOT states that the Katzehin River Bridge would extend at least 100 feet inland to provide a wildlife underpass. However, they note that this area, which is all uplands, is a known brown bear travel corridor so they have agreed to install an additional underpass once the Alaska Department of Fish & Game (ADF&G) determines the best location for it.

CORPS RESPONSE TO EPA CONDITION #4: The Corps has determined that this condition would not mitigate for impacts to waters of the United States. A special condition for underpasses for brown bears will not be required on the Corps permit. Migration corridor locations for bears are more appropriately controlled by ADF&G, USFS, and USFWS.

Suggested EPA Condition #5: Applicant should work with the communities of Juneau, Haines, and Skagway to develop a beneficial use for the 1.4 million cy of excess waste rock instead of wasting it into deep water.

ADOT RESPONSE TO EPA CONDITION #5: The ADOT stated that it would be cost prohibitive to haul the waste rock to an upland area in the above communities as it would cost $38 million ($27/cy) to barge, unload, transfer, and pile, which is 3-10 times more than rock available in those communities. However, they did state that it would be practicable to barge the rock for a concurrent marine project so they will work with the above communities as well as the communities of Gustavus and Hoonah to determine if there is such a project. If not, the large diameter rock would be placed randomly below the -10 foot contour so that it will add habitat complexity, creating irregular surfaces and many surfaces, and creating vegetated shallows. They note that the "NMFS has concurred that side casting in the areas designated will mimic natural slides in talus areas" so they did not request alteration of the plan or any compensatory mitigation for the rock disposal.

CORPS RESPONSE TO EPA CONDITION #5: Modified Alternative 2B changed disposal to two confined disposal areas in Lynn Canal. The confined disposal site reduces the acreage of filled marine water from 150 acres down to 14.8 acres. See VI - ALTERNATIVES CONSIDERED, Part C, in this ROD. See DA special condition #27.

Suggested EPA Condition #6: Adjust the priority list for the use of in lieu fees for compensatory mitigation by replacing the Pullen Creek project with the Strawberry Creek fen preservation project.

ADOT RESPONSE TO EPA CONDITION #6: The ADOT agreed that the Pullen Creek restoration project should not be as a high priority as the Strawberry Creek preservation project, but they will disburse mitigation funds to whatever project(s) the Corps permit requires.

CORPS RESPONSE TO EPA CONDITION #6: The Corps is not going to carry this condition. The existing in lieu fee agreements with Seal Trust and the Conservation Fund dictate how in lieu funds are to be spent. This is in compliance with the April 10, 2008, Final Compensatory Mitigation Rule issued jointly by EPA and the Corps.

Suggested EPA Condition #7: Require an additional in lieu fee payment of $440,000 to provide compensatory mitigation for the 70 acres of wetland impact on a 2:1 basis.

ADOT RESPONSE TO EPA CONDITION #7: The ADOT agreed to provide compensatory mitigation for wetland impacts on a 2:1 basis, but they disagreed with the amount of in lieu fees. ADOT explained that the in lieu fee valuation in the FEIS for the 70 acres of wetland impacts was $235,200, which was based on the value the ADOT used for lower value wetlands on other transportation projects in southeast Alaska. The original value was $2,800 per acre, but this was increased 20% to $3,360 per acre to account for inflation and this was "based on an isolated forested wetland value of $1,680 per acre." They further state, "Resource agency staff have pointed out that while much of the palustrine wetlands that would be impacted are of lower value, forested wetlands adjacent to anadromous fish streams are higher in value, as are the scrub/shrub wetlands near Sawmill Creek." They stated the average cost of higher value parcels in southeast Alaska is $5,520 per acre or $10,500 per acre on a 2:1 basis. ADOT said they would use this value for the 13.7 acres of high value wetland impacts (0.7 acre at Sawmill Creek and the remainder at Slate Creek and Cove) resulting in a partial in lieu fee of $143,850. They stated that final design has reduced the other wetland impacts to 51 acres, which would result in a partial in lieu fee of $171,360 (at $3,360 per acre) for a total in lieu fee of $315,200 for wetland impacts. This would be added to the previously committed in lieu fee of $780,000 for marine water impacts.

CORPS RESPONSE TO EPA CONDITION #7: The use of in lieu fees is allowed for in the April 10, 2008, Final Compensatory Mitigation Rule issued jointly by EPA and the Corps. The Corps agrees to carry a condition requiring in lieu fee mitigation to compensate for wetland losses. The Corps has determined an in lieu fee amount of $440,000 is appropriate for the freshwater wetland impacts of the project. The calculations follow: 65.71 acres of low value wetlands at $3,360 an acre at a two to one ratio equals $441,571. This calculation is equal to the value requested by EPA. Earlier Corps calculations for ILF included 0.2 acre of marine fill which was also included in the EFH ILF numbers. Earlier calculations by the Corps showed a total of $452,000. To avoid double charging for the 0.2 acre ($12,000) this value was subtracted from the $452,000. The marine and freshwater losses have been separated within the special conditions. The $440,000 ILF figure can be used for wetland restoration, enhancement, preservation or land acquisition for the unavoidable adverse impacts to fresh water aquatic resources. See DA special condition #4a.

FHWA has agreed to pay an additional $780,000 to compensate for EFH marine loss. "Mitigation Commitments Relevant to Section 404 of the Clean Water Act" was attached to an ADOT letter of March 3,

spawning period). Under this scenario, Alternative 3 is clearly less damaging to the aquatic ecosystem than Alternative 2B.'

The Corps used this confirmation by EPA to formulate Modified Alternative #3. See ALTERNATIVES CONSIDERED Part A., of this ROD.

U.S. Fish and Wildlife Service:

Comment letter, dated May 18, 2006. The ADOT did not provide a written response to this USFWS letter. The USFWS stated their opposition to the proposal and to Alternatives 2, 2B and 2C[67], and their support for the less environmentally damaging alternatives (1, 4A, and 4C). The USFWS addressed these concerns by recommending the following special conditions[68].

Suggested Condition #1: Require "compensatory mitigation for the loss of the 70 acres [of wetlands] in the form of habitat protection/reclamation (e.g. habitat acquisition through in lieu fees or permanent road obliteration in high value brown bear habitat)."

Suggested Condition #2: If the above condition is not included in any permit issued then the Corps is to notify the USFWS "in accordance with the local procedures agreed to by our respective agencies."[69]

CORPS RESPONSE TO USFWS Conditions #1 and #2: The Corps agrees to carry a condition for in lieu fee compensatory mitigation. See EPA condition #7 response for the calculations. Therefore, Condition request #2 does not apply. See DA special condition #4a-h.

National Marine Fisheries Service:

Comment letter dated July 6, 2006. The NMFS stated that the proposal "...has the potential to affect the ecologically important habitat of Berners Bay. Berners Bay is a regionally important estuary that supports a variety of ecological functions for the natural communities of Lynn Canal and northern southeast Alaska." The NMFS offered their assistance to the Corps in evaluating other practicable alternatives "...that would achieve the overall project purpose and minimize adverse impacts to the aquatic ecosystem."

The NMFS also recommended two modifications of the Essential Fish Habitat mitigation plan, which is found in the document *"Mitigation Commitments Relevant to Section 404 of the Clean Water Act."* NMFS stated that they no longer support funding for the Pullen Creek restoration project and noted that "...other important ecological wetland functions that will be lost or reduced as a result of wetland fill remain unmitigated..." with the current proposed plan.

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[67] Alternatives 2 and 2C were eliminated prior to publication of the FEIS.

[68] The USFWS letter, dated May 18, 2006, pages 1 and 2.

[69] Since the USFWS did not include any Section 404(q) language in their comment letter, the 'local procedures' indicated would not require the Corps' project manager to coordinate with the USFWS regarding the Corps' response to the USFWS' request. "Local procedures" are an outgrowth of Section 404(q) if there is no Section 404(q) language then no local procedures are required.

2006. This compensation was discussed in the FEIS, dated January 18 2006. Page 4-57 of the FEIS quotes NMFS' EFH conservation recommendation to "Provide compensatory mitigation to compensate for the loss of intertidal, subtidal habitats" and states a commitment to the compensatory mitigation plan. Page 5-11 of the FEIS details the commitment for compensatory in lieu fee for unvegetated intertidal/subtidal fills. FHWA and ADOT accept the in lieu fee acreage calculations. The marine EFH requirements have been added as a special condition. See DA special condition #4b.

Special Conditions #4c-h address total ILF requirements for the 404 permit and how to deal with potential DA permit modifications.

Suggested EPA Condition #8: "...incorporate the revised compensatory mitigation plan by reference as a special condition of the 404 permit."

CORPS RESPONSE TO EPA CONDITION #8: The Corps agrees that compensatory mitigation is appropriate and an in lieu fee payment of $440,000 shall be required. The applicant has also agreed to an Essential Fish Habitat mitigation plan found in the document "Mitigation Commitments Relevant to Section 404 of the Clean Water Act." The applicant has agreed to minimization measures, project changes, and to follow best management practices during construction. The fills in waters of the U.S. were further minimized by Modified Alternative 2B by reducing open water disposal, and wetland fill. The total ILF amount required under Section 404 of the Clean Water Act for the Project is found in two parts: $440,000 (wetlands)) + $780,000 (EFH marine water) = $1,220,000. No further compensatory mitigation beyond these requirements is required. See DA special condition #4.

Email, dated August 27, 2007, from EPA:

The EPA stated: "…that absent any new and compelling information, EPA's comments on modified Alternative 3 remain the same…. If the Corps provides new information to EPA in response to our comments, we will consider such information and may provide additional comments to the Corps at that time."

Corps Response to the EPA email: The Corps initiated this contact on August 20, 2007, by asking for EPA's position on 'modified' alternative 3…." The Corps sent this email to the EPA:

> *"The Corps published a Public Notice for this project on April 21, 2006. The EPA responded to the Corps on June 12, 2006, expressing their concerns…: 'EPA generally agrees with these findings, with the following exceptions. The applicant's proposed conservation measures for Alternatives 4B and 4D would allay EPA's concerns about potential impacts on herring spawning in Berners Bay. Alternatives 4B and 4D include ferry service from Berners Bay in the summer and from Auke Bay in the winter. To avoid impacts on herring spawning, ferry operations in Berners Bay would not begin until after the herring spawning period. The same conservation measures could be applied to Alternative 3 (i.e., ferry service from Berners Bay year round, except ferry service from Auke Bay during the 2-3 week herring*

Comment letter dated August 24, 2007. The Corps requested the NMFS' position with respect to a Modified Alternative 3, in a letter dated August 20, 2007:

> "A modified Alternative 3.....would appear to be less damaging to the aquatic environment, and may be practicable. Therefore, what would be your agency's position with respect to the EPA's suggested modification of Alternative 3? That is, should ADOT select Alternative 3 instead of Alternative 2B, and the alternative was modified to avoid herring spawning areas and times within Berners Bay, would the National Marine Fisheries Service view this as preferable or not, and why? For example, would NMFS totally object to a modified Alternative 3?"

The NMFS reminded the Corps that in the NMFS' letter dated July 6, 2006, that the NMFS had

> "...offered to 'assist the Corps in evaluating other alternatives determined to be practicable that would achieve the project purpose and minimize adverse impacts to the aquatic environment'."

Their letter went on to state that the ADOT had addressed this issue in the SDEIS, dated March 21, 2005:

> "This alternative could be combined with components of other alternatives to develop a blended alternative that is less damaging to EFH."

The NMFS' letter also stated "A modification of Alternative 3 to avoid herring spawning areas and times within Berners Bay could reduce potential adverse effects to living marine resources." The NMFS' letter went on to remind the Corps that should the ADOT reselect a new alternative, both the EFH and the ESA would need to be reevaluated as appropriate.

CORPS RESPONSE TO NMFS: ESA consultation was completed for this project. (See ESA discussion immediately below.) The Corps also completed a detailed review of the alternatives for the proposed project including Modified Alternative 3 and Modified Alternative 2B. See VI - ALTERNATIVES CONSIDERED, VIII - ANALYSIS OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE, in this ROD. See DA special condition #4, #31, and #32.

ENDANGERED SPECIES ACT (ESA) CONSULTATION PROCESS:

The Corps initiated[70] informal consultation pursuant to Section 7 of the ESA with the NMFS, stating that the Corps had determined that the project was not likely to affect threatened and endangered species (humpback whale and Stellar sea lions) within the project area [Lynn Canal and Berners Bay].

Comment letter dated May 10, 2006, from the Southeast Alaska Conservation Council (SEACC), the Auk Kwaan (a native tribe), the Lynn Canal Conservation, and the Sierra Club refuted the above

[70] via Corps public notice, dated April 21, 2006

statement. This letter was a "Notice of Intent to sue under the ESA and Administrative Procedure Act for failure to initiate formal consultation with regard to Stellar sea lion critical habitat in the Juneau Access Improvement Project Area" and was addressed to the Corps and the USFS. The letter included a May 10, 2006, letter to the FHWA informing them that litigation[71] would be initiated if they do not complete formal consultation regarding the project's impacts upon Stellar sea lion critical habitat. They stated that the ESA regulations require formal consultation if a federally funded or authorized project "…'may affect' critical species or habitats." They noted that the FEIS states that "…the area of critical habitat around Gran Point 'includes all the land and water within a 3,000-foot radius' of the haul out…" and that the proposed road would come within 300 feet of the haul out. Further, they stated that the NMFS has expressed uncertainty on the effectiveness of the proposed mitigation measures by NMFS stating that they have "…'limited experience' with the effects of construction noise 'and the likely response by Stellar sea lions to human activity in such close proximity to such an important haul out.'" The SEACC letter concluded that this clearly shows that the project "may affect" the Stellar sea lion and that formal consultation is required by the ESA. The SEACC letter to the Corps states, "Similarly, the ESA mandates formal consultation before the Army Corps of Engineers decides whether to issue a permit pursuant to 404 of the Clean Water Act."

The Corps wrote a letter to the NMFS on June 27, 2006, regarding the Corps' ESA responsibilities. The Corps stated it "…reviewed the biological assessment for the Stellar sea lion prepared by the FHWA and the Stellar sea lion technical report (Appendix S) in the EIS and find them acceptable for Corps regulatory purposes and our ESA responsibilities." The Corps noted that "…12 conditions have been agreed to by ADOT and the FHWA to avoid potential impacts to humpback whales and Stellar sea lions." The Corps requested the NMFS provide their written ESA comments on this project and a statement on whether formal consultation pursuant to Section 7 of the ESA was required.

However, on December 29, 2006, Golder Associates[72] prepared and submitted to the ADOT (who subsequently provided the Corps with a copy), a document entitled Final Report, Lynn Canal Highway, Phase I, Zone 4 Geotechnical Investigation. This report indicated the potential presence of a hazard to the road alignment at Gran Point, one of the Steller sea lion haul out areas. This new information might have had substantial consequences on the alignment of the proposed road, and needed to be addressed. This prompted NMFS to request that the FHWA and the Corps each revisit their respective biological assessments. In response, the FHWA responded to NMFS that FHWA would respond to NMFS' request as the lead Federal agency and on behalf of the Corps. FHWA provided a response concerning the Golder report to NMFS with respect to ESA on June 17, 2007.

[71]On August 16, 2006, SEACC and other environmental organizations filed suit in the Federal District Court of Alaska against the FHWA and the USFS for violations of the ESA and other environmental laws.

[72]Golder Associates, Incorporated, 1750 Abbott Road, Suite 200, Anchorage, AK 99507-3443.

The NMFS responded to the FHWA in a letter dated August 7, 2007, stating that "With respect to the Corps' Federal responsibilities pursuant to the ESA, NMFS concurs with the Corps' determination that the activities associated with the Project are not likely to adversely affect the endangered humpback whale, the threatened eastern distinct population segment (eDPS) of Steller sea lion, the endangered western distinct population segment (wDPS) of Steller sea lion, or Steller sea lion critical habitat within the action area." The letter went on to state, "This concludes NMFS consultation with the Corps under section 7 of the ESA." The letter did not convey any request for special conditions or recommendations to either the Corps or to the FHWA.

C. **STATE: Alaska Department of Natural Resources (ADNR):**

The only comment letter received from the ADNR was the May 19, 2006, letter from the State Historic Preservation Officer (SHPO). The SHPO stated that the project was located in three historic districts and that two linear features (Jualin Mine Tram and Comet/Bear/Kensington Railroad) are eligible for inclusion in the National Register of Historic Places would be intersected by the project. They stated this was previously stated in an October 5, 2005, letter addressed to the FHWA and to the ADOT and that the SHPO concurred that these properties would not be adversely affected provided they were avoided by having an archaeologist flag them prior to work and the properties were documented with photographs by the FHWA after the project is completed. The ADOT confirmed in their June 13, 2006, response letter that the SHPO recommendations would be followed.

CORPS RESPONSE TO ADNR: FHWA has agreed to comply with all of SHPO's requirements.

D. **CITY AND BOROUGH OF JUNEAU:**

The City and Borough of Juneau (CBJ) General Assembly[73] found the project to be "consistent with the CBJ Land Use Code and the CBJ Comprehensive Plan" with several conditions previously recommended by the CBJ Planning Commission.

Condition #1: Underpasses will be included for the two identified major brown bear migration corridors on the isthmus between the Lace and Antler Rivers.

CORPS RESPONSE TO CBJ CONDITION #1: The Corps has determined that this condition would not mitigate for impacts to waters of the United States. A special condition for underpasses for brown bears will not be required on the Corps permit. Migration corridor locations for bears are more appropriately controlled by ADF&G, USFS, and USFWS.

Condition #2: All anadromous fish streams will be crossed by bridges. Streams that can be crossed with 130-foot or shorter bridges will not have any structures or fill in the stream channel.

[73] July 29, 2006.

CORPS RESPONSE TO CBJ CONDITION #2: This condition will be carried by the Corps. The aquatic resources (anadromous fish) at risk are a direct result of the Corps permit action. See DA special condition #5.

Condition #3: In appropriate habitat, nesting surveys for Trumpeter Swans and Queen Charlotte Goshawks will be conducted prior to construction. Clearing will be avoided in the vicinity of active nests.

CORPS RESPONSE TO CBJ CONDITION #3: The Corps will not require surveys of species that are not indentified as endangered or part of EFH. The survey is more appropriately handled by USFS, USFWS, and the applicant.

Condition #4: ADOT will fund wildlife monitoring studies to assess impacts and manage populations for mountain goats, moose, bear, wolverines, eagles, and sea lions. If goat monitoring identifies areas where pregnant nannies congregate in late winter or early spring, ADOT will coordinate with the Alaska Department of Fish and Game to avoid construction from January through April in those areas to the extent feasible.

CORPS RESPONSE TO CBJ CONDITION #4: The Corps will not make it part of the DA permit to require ADOT to fund wildlife monitoring studies to assess impacts and manage populations for mountain goats, moose, bear, wolverines, eagles, and sea lions. Wildlife surveys are more appropriately handled by USFS, USFWS, NMFS, and ADOT. Study requirements mandated by the ESA act are part of conditions proposed by the Corps.

Condition #5: No construction will occur in April or May within one mile of identified harbor seal haul outs.

CORPS RESPONSE TO CBJ CONDITION #5: The Corps will not carry this condition. This condition was not recommended by NMFS, the recognized expert on marine mammals. The Corps defers to NMFS in this matter.

Condition #6: ADOT will coordinate with the USFWS to avoid impacts on eagle nesting trees. No construction will occur within 330 feet of an eagle nest tree, and no blasting will occur within 0.5 mile of an eagle nest, during the March 31 to May 31 nest selection period unless agreed to by the USFWS. If a nest is active, no construction blasting will occur within these distances until after August 31, unless the USFWS approves a plan to avoid impacts while operations continue, and ADOT has obtained variances from the CBJ.

CORPS RESPONSE TO CBJ CONDITION #6: The Corps agrees to carry a condition on Eagle avoidance on our permit. An Eagle condition was written in concert with USFWS, the recognized Federal expert on eagles. The Corps defers to the USFWS on how to write the eagle condition. See DA special condition #6.

Condition #7: No in-water work is permitted between March 15 and June 15 in anadromous waters.

CORPS RESPONSE TO CBJ CONDITION #7: The Corps agrees to carry a timing window for in water work. The USFWS and ADF&G have established such a timing window. These experts have recommended a window of April 15 to June 15. The Corps defers to the experts in this matter and will use the window of April 15 to June 15. See DA special condition #7.

Condition #8: The Best Management Practices in CBJ 49.70.1080(b)(7)(A) through (G) shall be employed during construction of the project.

CORPS RESPONSE TO CBJ CONDITION #8: This condition will not be carried by the Corps as written. Best Management Practices have been established by FHWA for the road construction. The Corps will require the Best Management Practices of FHWA to be followed for the Project. See DA special condition #9.

Condition #9: The road alignment in Berners Bay provides for a shoreline buffer of naturally-occurring trees and vegetation between 50 and 1,000 feet (and more) wide. This alignment shall be retained and in no case shall the buffer be less than 50 feet.

CORPS RESPONSE TO CBJ CONDITION #9: The Corps will not carry this condition. The Corps does not have jurisdiction for fill placed in upland areas. Only a portion of the route in Berners Bay is within Corps jurisdiction. ADOT has designed and routed the road to provide buffers around Berners Bay. The Corps agrees that placing fill in Berners Bay under Corps jurisdiction would be a disposal of fill in waters of the United States. Disposal of fill in Berners Bay will not be permitted, See response to Condition #10 immediately below. The Corps will leave routing of the road to the land manager and land owner in uplands. See CBJ Condition #10.

Condition #10: No material will be side cast into Berners Bay during construction.

CORPS RESPONSE TO CBJ CONDITION #10: This condition will be carried by the Corps. This permit condition is warranted and supported by the comments of EPA. The waters of Berners Bay have been labeled an "Area of National Importance" (ARNI) by EPA. EPA determined this area to have special and unique aquatic resources. The disposal of fill in the intertidal or subtidal area would put this special area at risk. Therefore, fill placement or waste rock disposal in the Berners Bay ARNI will not be authorized. See DA special condition #8.

Condition #11: Multi-span bridges will be used across the Lace and Antler Rivers at the head of Berners Bay. These bridges will be constructed with piers spaced at least 130 feet apart to minimize impacts to water flow and circulation patterns and will be designed to avoid salt marshes and inter-tidal flats.

CORPS RESPONSE TO CBJ CONDITION #11: The Corps will not carry this condition on the permit. ADOT has committed to bridge all anadromous streams on the whole Project. The project as originally applied for would have resulted in impacting 2.6 acres of wetlands in this area. An on site delineation was performed according to

the 1987 manual for this area. The delineation found that the wetlands were not as extensive as shown on the National Wetland Inventory maps. In addition, ADOT agreed to extend the bridges here and bridge an additional (anadromous) stream that was discovered during the wetland delineation. As a result no wetlands would be filled on the peninsula.

Condition #12: No road pullouts and road facilities, such as restrooms, will be constructed in wetland areas. All construction camps, staging sites, borrow pits, and waste areas between Slate Creek and Sweeny Creek will be located on upland areas.

CORPS RESPONSE TO CBJ CONDITION #12: The Corps will not carry this condition on the permit. The Corps required ADOT to avoid and minimize wetland fill for the Project. A rigorous look at the proposal has been completed by the Corps to find compliance with the Guidelines. The wetlands proposed to be filled within Modified Alternative 2B are the minimum required to complete the Project. Road fills were restricted to the road prism. Road width and cuts (with backfill) in wetlands were proposed to meet FHWA safety standards.

Condition #13: ADOT will not construct boat launch ramps in any location along the highway route.

CORPS RESPONSE TO CBJ CONDITION #13: The Corps will not carry this condition on the permit. ADOT would have to apply to the Corps for a permit to construct a boat launch below High Tide Line. There is no boat launch as part of the Corps permit application.

Condition #14: A barrier shall be placed along the road segments crossing the Antler and Lace Rivers and adjacent wetlands where necessary to prevent access to tide flats by off-road vehicles.

Corps Response to CBJ Condition #14: The Corps will not carry this condition on the permit. The Corps does not regulate or have jurisdiction for off road vehicles. The Corps will leave off road vehicle regulation to the land manager.

Condition #15: The location of wildlife underpasses shall be field verified by the ADF&G and USFS experts before locations are finalized.

Corps Response to CBJ Condition #15: All of the bridges over the anadromous streams will act as underpasses for wildlife. The Corps will not carry this condition on the permit. The Corps does not regulate or have jurisdiction for underpasses. The Corps will leave the location, design, and need for animal underpasses to the USFS, USFWS, and ADF&G.

Condition #16: In-water construction shall be limited to times when eulachon are not migrating or spawning in the area, and impacts are minimized to migrating adult salmon, at ADF&G's discretion.

Corps Response to CBJ Condition #16: The Corps agrees to carry a timing window. The USFWS and ADF&G have established such a timing

window. The experts have asked for a window from April 15 to June 15. The Corps defers to the experts in this matter and will use this April 15 to June 15 timing window. See DA special condition #7.

Condition #17: ADOT shall work with ADF&G and NMFS to design a monitoring program that will determine the impacts of the bridges and road construction and use on the east side of Berners Bay and in the Antler River.

Corps Response to CBJ Condition #17: The Corps will not carry this condition on the permit. ADOT has agreed to work with NMFS on impact monitoring.

Condition #18: To mitigate for the loss of wetland functions, including water flows and quality, water retention devices, oil/water separators and/or Best Management Practices that mimic current flow patterns shall be designed and installed along the east shoreline of Berners Bay to act as filters to clean the water.

Corps Response to CBJ Condition #18: The Corps will not carry this condition on the permit. The Corps instead has the authority to allow for compensation of wetland losses by the use of in lieu fee payments. The use of in lieu fees is allowed by the April 10, 2008, Final Compensatory Mitigation Rule issued jointly by EPA and the Corps. The Corps agrees to carry a condition requiring in lieu fee mitigation for wetland losses. The Corps has determined an in lieu fee amount of $440,000 is appropriate for the impacts of the project. In addition, FHWA has agreed to pay $780,000 to compensate for EFH marine loss. See DA special condition #4a-h.

Condition #19: The Measures to Minimize Harm identified in the April 3, 2006, FHWA Record of Decision on the Juneau Access Road shall be incorporated as elements of the project.

Corps Response to CBJ Condition #19: The Corps agrees to carry this condition. See DA special condition #9.

The following six conditions were approved in the July 12, 2006, CBJ Board of Adjustment "variance request to allow construction of Juneau Access Road within 330 feet of 3 trees with eagle nests."

Condition #1: Construction activities in the vicinity of the bald eagle nests will be coordinated with the United States Fish and Wildlife Service to determine the need for alignment changes (for newly discovered nests), blasting plan changes, or other measures to avoid impacts to eagles.

Condition #2: On-the-ground nest surveys will be conducted before clearing takes place to confirm the location of trees with eagle nests.

Condition #3: No construction will occur within 330 feet of an eagle nest, and no blasting will occur within 0.5 mile of an eagle nest during March 1 to May 31 nest selection period unless agreed to by the United States Fish and Wildlife Service. If a nest is active, no construction or blasting will occur within these

distances until after August 31, unless the United States Fish and Wildlife Service approves a plan to avoid impacts while operations continue.

Condition #4: In areas where clearing occurs to within 100 feet of a nest tree, Permittee and the United States Fish and Wildlife Service will jointly assess the potential for windthrow and Permittee will stabilize the tree or adjacent trees, if determined.

Condition #5: During construction, Permittee and the United States Fish and Wildlife Service will assess the sufficiency of natural screening between the highway and any eagle nests below the elevation of the road within the 330-foot zone. Additional screening will be developed, if necessary.

Condition #6: Permittee will continue to fund the United States Fish and Wildlife Service's aerial surveys for a period of five years to assess the impact, if any, of the project on the Lynn Canal bald eagle population.

CORPS RESPONSE TO CBJ CONDITIONS #1-#5: CBJ conditions apply only within the CBJ boundary. Project construction extends beyond the CBJ boundary. To ensure eagle protection beyond the CBJ boundary one condition was written for bald eagles and will be carried on the Corps permit: "Permittee shall coordinate with the U.S. Fish & Wildlife Service (USFWS) to avoid impacts on eagle nesting trees, in accordance with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Permittee shall also abide by the National Bald Eagle Management Guidelines at http://www.fws.gov/migratorybirds/baldeagle.htm." See DA special condition #6.

CORPS RESPONSE TO CBJ CONDITION #5: This condition will be carried by the Corps. The surveys of the eagles will ensure that the species is not adversely impacted by the Project. The bald eagle is not a listed or candidate species under the Endangered Species Act in Alaska. However, the Bald Eagle Protection Act of 1940 prohibits the disturbance of eagles and places enforcement of the act with the USFWS. See DA special condition #10.

E. **ORGANIZATIONS and COMPANIES:**

Southeast Alaska Conservation Council [SEACC]:

Comment letter dated May 10, 2006. SEACC had the following statement: "On May 10, 2006, the undersigned groups submitted a 60-day notice letter pursuant to section 11(g) of the Endangered Species Act (ESA), 16 U.S.C. § 1540(g), to FHWA and NMFS. That letter explains that FHWA violated the ESA and the Administrative Procedure Act, 5 U.S.C. § 706, by failing to initiate formal consultation with regard to Steller sea lion critical habitat in the Project area."

Comment letter dated June 12, 2006[74]. SEACC commented that the Corps public notice was premature since project designs are

[74] SEACC Letter, dated June 12, 2006, with attachments.

incomplete so the Corps cannot grant a permit until final plans become available. SEACC also contended that the Corps had not entered into consultation pursuant to the Endangered Species Act (ESA)[75], nor had the Corps adequately considered less environmentally damaging practicable alternatives to the project.

SEACC stated that "To grant a permit on the basis of the information provided in the application would violate not only the Clean Water Act, but also the National Environmental Policy Act and the Endangered Species Act. The Corps must deny the permit application."

Issue #1: "Because the Auke Bay ferry Alternatives [1, 4A, and 4C] are less environmentally damaging practicable alternatives, the Corps cannot grant a Section 404 permit for the proposed road."

Issue #2: "Granting a Section 404 permit is not in the public interest."

Issue #3: "The mitigation measures proposed in the permit application are inadequate."

Issue #4: "The Corps cannot approve a permit application based on incomplete designs."

Issue #5: "The Corps cannot rely on the Environmental Impact Statement prepared by the Alaska Department of Transportation and approved by the Federal Highway Administration."

Issue #6: "Granting a Section 404 permit for the Project will impact designated critical habitat for Stellar sea lions, and the Corps must consult with NMFS."

Issue #7: "ADOT's application for a Section 404 permit for the Project does not meet the requirements of the Clean Water Act, NEPA, or the Endangered Species Act. The Corps must deny ADOT's permit application."

CORPS RESPONSE TO SEACC'S JUNE 12, 2006 LETTER, WITH RESPECT TO THE SEVEN ISSUES ABOVE: The Corps determined that the Department of the Army permit application received from ADOT was complete in accordance with 33 CFR Part 325. The public notice solicited input from the public, private, and institutional sectors on the proposed DA permit application. FHWA, as the lead federal agency, initiated ESA consultation with NMFS for the project. In addition, the Corps sent a letter to the NMFS to confirm that FHWA had completed consultation pursuant to the Endangered Species Act. NMFS responded to FHWA in a letter dated August 7, 2007, stating that "With respect to the Corps' Federal responsibilities pursuant to the ESA, NMFS concurs with the Corps' determination that the activities associated with the Project are not likely to adversely affect the endangered humpback whale, the threatened eastern distinct population segment (eDPS) of Steller sea lion, the endangered western distinct population segment (wDPS) of Steller sea lion, or Steller sea lion critical habitat within the action

[75] See IX.2.B, Endangered Species Consultation Process, above.

area." The letter went on to state, "This concludes NMFS consultation with the Corps under section 7 of the ESA." The Corps completed all Essential Fish Habitat consultation with NMFS. FHWA agreed to pay $780,000 to compensate for EFH marine loss and completed a document "Mitigation Commitments Relevant to Section 404 of the Clean Water Act", attached to an ADOT letter of March 3, 2006. This compensation was discussed in the FEIS, dated January 18 2006. Page 4-57 of the FEIS quoted NMFS' EFH conservation recommendation to "Provide compensatory mitigation to compensate for the loss of intertidal, subtidal, and wetland habitats" and stated a commitment to the compensatory mitigation plan. The Corps completed an independent review of all of the alternatives and an analysis of the environmental impacts of the project, and then determined compliance with the 404 (b)(1) guidelines. There are five alternatives described in the FEIS, plus the Corps' Modified Alternative 3, and Modified Alternative 2B which would be less environmentally damaging than the Alternative 2B. Alternative 3, Modified Alternative 3, 4A, 4B, 4C, and 4D, all failed to satisfy one or more of the components of the overall project purpose. It was concluded that Modified Alternative 2B was the least environmentally damaging practicable alternative considering cost, existing technology, and logistics in light of the overall project purpose. Logistics and technology were the deciding factors in this analysis. For these reasons, Modified Alternative 2B is the LEDPA. The Corps was a cooperating agency in the preparation of the EIS and the Corps used the data, information and adapted the FEIS for the Project except for the 404(b)(1) draft analysis found in Appendix X of the FEIS completed by FHWA. See III - OVERALL PROJECT PURPOSE, VI - ALTERNATIVES CONSIDERED, and VIII - ANALYSIS OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE, in this ROD. See DA special condition #4a-h.

Comment letter dated November 29, 2007.

Issue #1: "…we are concerned that neither Alaska DOT nor the Corps has provided any opportunity to the public to review and analyze the significant new information relating to the environmental impacts and cost of this project that has arisen over the last year."

Issue #2: "That EIS has significant defects and does not contain sufficient information to assess the extent of the environmental impacts associated with dredging and filling specifically relevant to the Corps' analysis."

Issue #3: "Specifically, Alaska DOT's EIS does not take into account significant geologic hazards identified in a report released to the public in late January 2007. *Golder Assoc., Inc., Final Report, Lynn Canal Highway Phase I Zone 4 Geotechnical Investigations (Dec. 2006)."*

Issue #4: "That EIS has significant defects and does not contain sufficient information to assess the extent of the environmental impacts associated with dredging and filling specifically relevant to the Corps' analysis"

Issue #5: "…ADOT's EIS does not take into account significant geologic hazards identified in a report released to the public in late January 2007."

Issue #6: "The hazards identified in the Golder Report will affect the alignment of the road and its impacts to wetlands and wildlife."

Issue #7: "Alaska DOT recently issued an updated financial plan for the project. See Alaska DOT, *Juneau Access Improvements Financial Plan 2007 Annual Update* (Oct. 2007)." "According to that plan, the proposed project is expected to cost $374 million, an increase of 37% in less than two years."

Issue #8: "A road through Berners Bay to Sweeny Creek, the portion of the project for which Alaska DOT now has sufficient funding available, does not meet the purpose and need for the project."

Issue #9: "The new information described in the Golder Report affects the analysis of the environmental impacts of the project as well…." And, "Without knowing where the road alignment will ultimately lie, the Corps cannot know how many acres of wetlands will be impacted…"

Issue #10: "The proposed project included development throughout Berners Bay, the primary spawning grounds for Lynn Canal herring. The Corps' decision to allow dredging and filling in that area could affect herring."

Issue #11: "The Corps should require Alaska DOT to provide this significant new information in a new permit application and should assess that information in accordance with NEPA. We request that the Corps issue a new public notice, based on a complete permit application incorporating the new information, providing a fair opportunity for public involvement in assessing the public interest in this permit application."

ADOT RESPONSE TO SEACC: The ADOT responded to SEACC's comment letter, dated November 29, 2007, stating that both the ADOT and the FHWA understood SEACC's concerns, but that the additional and more detailed information prepared for the selected alternative is a normal part of the process, and believes that none of the results merited additional NEPA analysis or further practicability analysis under the Clean Water Act. ADOT's letter addressed the eleven itemized the issues in the SEACC letter as follows, below.

The Golder Report: The report resulted in changes to the proposed road alignment, but would result in less excavation, less excess material, less deep water disposal and no increase in Corps' jurisdictional fills.

The JAP's Financial Plan 2007 Annual Update: The ADOT stated that the SEACC letter "…reflects the mistaken notion that large transportation projects should not be permitted, or initial construction funded, unless the entire cost of the project is immediately available." DOT responded that "…one of the purposes of the Annual update is to provide information as to how the

project will be developed over time to match changes in cost and available funding."

The 2007 Petition to List Lynn Canal Distinct Population Segment of Pacific Herring under the Endangered Species Act: The ADOT responded to this issue as follow: "The proposed action would not result in dredged or fill material in Berners Bay, and the alignment for the segment along the east shore of Berners Bay has been designed to be as far from the shoreline as practicable, maintaining a vegetation buffer between the water and the highway…. Also, a petition to list a species does not compel any action from a federal agency other than evaluation of the petition by the federal agency with jurisdiction, in this case the National Marine Fisheries Agency."

CORPS RESPONSE TO SEACC'S NOVEMBER 29, 2007, WITH RESPECT TO THE ELEVEN ISSUES ABOVE: The Corps agrees with the ADOT's response to SEACC's concerns. The Endangered Species Act consultation process was completed by FHWA and addressed the concerns raised in the Golder Report. The Corps public notice initiated the Corps consultation under the ESA. The ESA consultation was completed by FHWA as the lead Federal Agency. The Golder report was completed after the Corps Public Notice. According to Corps SOP "if the project impacts are similar to or less than the original submittal the Corps will proceed with a decision with out issuing another Public Notice". In this case ADOT reviewed the Golder document, and determined that the information would change the proposed road alignment, but would result in less excavation, less waste rock, less deep water disposal, and no increase in the Corps' jurisdiction. Under CFR 33 CFR 325.2(a)(2) the District Engineer will issue a revised public notice if in his view there is a change in the application data that would affect the public's review of the proposal. The Golder report did not result in any substantial application data. Therefore, the Corps determined a revised public notice was not warranted. ADOT estimates for the cost of roadway construction continue to rise. The increases are not because of one report or one piece of information. We feel the FEIS adequately analyzed the impacts of the proposed action and alternatives. Neither the Golder report nor the increased costs changed this conclusion. The time between the SEIS and the Corps ROD has resulted in higher construction costs for all of the alternatives. The escalating costs of steel, concrete, and equipment will elevate the final costs for all alternatives. This rapid inflation of construction costs, equipment, operation, and maintenance will affect all alternatives equally. It was concluded that Modified Alternative 2B was the least environmentally damaging practicable alternative considering cost, existing technology, and logistics in light of the overall project purposes. Logistics and technology were the deciding factors in this analysis. See III - OVERALL PROJECT PURPOSE, VI - ALTERNATIVES CONSIDERED, and VIII - ANALYSIS OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE, in this ROD.

Lynn Canal Conservation, Inc. [LCC][76]:

[76] See Section IX.2.G. Responses.

The LCC stated[77] opposition to the proposed project. They stated the issuance of a 404 permit would be "contrary to the public interest because benefits do not outweigh detriments of the project." They further stated that "It is premature for the Corps to issue a permit because most of the project design is still in preliminary stages." LCC explained how the ferry alternatives, compared to the proposed project, would meet or exceed the project purpose and needs for capacity to meet demand, increased travel opportunity, reduced travel times, and reducing state and user costs. LCC also expressed their concern over essential fish habitat, including the 1.4 million cy of waste rock to be disposed of in deep water, public health and safety concerns, and impacts on Stellar sea lions, bald eagles, and wetlands. The LCC concluded that the Corps should deny the requested 404 permit based on the following reasons: "design information is mostly incomplete (including design through a critical habitat for a threatened [ESA] species); there has been no formal ESA consultation with NMFS; impacts to fish and EFH; the detriments of the project far outweigh any real or perceived benefits; the project is not economical; the project would harm the aesthetics of Lynn Canal, a world class visitor destination; the project has significant environmental consequences and Auke Bay marine alternatives have no significant environmental consequences; impacts to fish and wildlife are unnecessary; the project would diminish the safety of the traveling public; the project would compromise routine and emergency healthcare options; and the project is contrary to the public interest."

CORPS RESPONSE TO LCC: The Corps determined that the project as designed could be evaluated. A complete application was supplied to the Corps and a public notice was therefore issued. The NMFS consultation on EFH resulted in an agreement titled "Mitigation Commitments Relevant to Section 404 of the Clean Water Act." All EFH responsibilities were completed by the Corps for this project. ESA coordination and consultation was completed to the satisfaction of the USFWS and NMFS. Modified Alternative 2B resulted in a reduction of the design footprint and in the reduction of waste rock requiring disposal. The Corps determined that the ferry alternatives were not practicable in light of the overall project purpose. Also, see Corps response to the SEACC comment letters, dated June 12, 2006, and November 29, 2007, and . See III - OVERALL PROJECT PURPOSE, VI - ALTERNATIVES CONSIDERED, and VIII - ANALYSIS OF THE LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE, in this ROD.

Lynn Canal Transportation Project (LCTP)[78]:

The LCTP coordinator wrote that their organization, consisting of business people from Haines, and Skagway, was opposed to the project since it was not in the public interest and a better, more economical, alternative existed. They explained that it is in the best interest of the public to preserve and improve the mass transit ferry system and not in the public interest to increase our dependence on the individual automobile. Further, they stated, it

[77] LCC Email, dated May 22, 2006.
[78] Letter addressed to the ADOT, and copy furnished to the Corps, dated June 12, 2006.

is not in the public interest to move away from a popular viable public transportation system, especially with rising fuel prices, and it's "not in the public interest to build a road that the EIS admits is more expensive than the present ferry system." The LCTP concluded that they "commissioned one of the developers who designed the Interisland Ferry Authority (IFA) to see if a similar ferry authority could operate ferry service in the Lynn Canal. Their findings prove that a ferry system can be designed and run on a break even or better basis, using the existing rider ship and fares of the AMHS." LCTP states that they provided the ADOT this information, but the ADOT refused to evaluate it in the EIS for an unknown reason.

The LCTP stated that they found the following economic data flaws in the FEIS:

- Overstates annual cost of the No Action and Marine Alternatives;
- Overstates capital investment in Marine Options;
- Underestimates traffic for Marine Options;
- Does not reflect overall cost savings to travelers and the community;
- Does not reflect potential differential cost;
- Understates cost of highway alternatives;
- Highway operating costs do not reflect all costs; and
- Unknown economic implications on AMHS and State transportation budget when the majority of the AMHS is lost if proposal goes through.

The LCTP also submitted a preliminary business plan, which they submitted to the ADOT earlier that shows a ferry system can be operated in Lynn Canal that "meets traffic demand, provides excellent schedules and service and operates with little or no need for state subsidies." The plan was written by one of the architects for the Interisland Ferry Authority (IFA), a public corporation organized under Alaska's Municipal Port Authority Act in 1997 and based out of Craig, Alaska on Prince of Wales Island. The following table shows the current prices and distances for comparable ferry runs between these two ferry systems:

FERRY SYSTEM	PORTS	DISTANCE (MILES)	FARE: 1 ADULT PASSENGER	FARE: <19' VEHICLE
AMHS	JUNEAU-HAINES	80	$36	$83
AMHS	JUNEAU-SKAGWAY	97.5	$48	$108
IFA	KETCHIKAN-HOLLIS	51	$37-summer $30-winter	$85-summer $70-winter
IFA	COFF-PETERSBURG[79]	58	$58	$133

CORPS RESPONSE TO LCTP: All comments were forwarded to ADOT and FHWA. The Corps asked FHWA if the traffic study and cost analysis

[79] This run is from Coffman Cove on POW Island to the ferry terminal on South Mitkof Island and requires a 22-mile bus ride for $22 to Petersburg for those without a vehicle. This ferry only operates from May to September.

for alternatives found in the FEIS met all established norms. FHWA assured the Corps that all assumptions for costs and evaluations in the FEIS were based on acceptable standards. Construction costs were based on the costs at the time. No costs were understated or exaggerated. Today the costs of steel, concrete, and fuel have gone up. New cost evaluations will be completed yearly for State projects. In addition, ADOT and FHWA revisited their cost and calculations for Modified Alternative 3. The State found costs were increasing since the FEIS was completed, but they found no errors in their assumptions. The costs for all alternatives are increasing as steel, fuel, and concrete costs escalate. The increases affect all alternatives. All dollar evaluations were left in like years for comparison purposes. The State further explained that they are bound by union labor contracts on the ferries which make direct private and government comparisons difficult.

The Corps notes based on the above table, the IFA system is charging slightly higher fares for shorter distances traveled than the AMHS system is charging (as of 2006).

Also, see Corps response to the SEACC comment letters, dated June 12, 2006, and November 29, 2007.

F. **INDIVIDUALS:**

The Corps received 257 comment letters from individuals, private companies, and other organizations in response to the Corps public notice. The comments, sometimes more than one per comment letter, have totals of 87 for and 170 against. Several individuals sent more than one comment letter and 29 responses were form letters with a total of 152 different signatures opposing the project.

CORPS RESPONSE TO INDIVIDUALS: See Corps responses to SEACC June 12, 2006, SEACC November 29, 2007, LCC and LCTP.

X. General Evaluation [33 CFR 320.4(a)]: Public Interest Review:

1. **The relative extent of the public and private need for the proposed work.** The public need is for an efficient method of providing an all-weather surface transportation system in Lynn Canal between the communities of Juneau, Haines, and Skagway.

2. **The practicability of using reasonable alternative locations and/or methods to accomplish the objective of the proposed structure or work.** The Corps determined that in light of the 404(b)(1) Guidelines, the overall project purpose as: "to provide improved surface transportation with increased capacity to meet demand, provide flexibility, improved opportunity for travel, and reduced travel time between the Lynn Canal communities of Juneau, Haines, and Skagway." The Corps considered mainline ferries, fast ferries, different ferry dock locations, and a road on the west side with two different ferry connections. All of the alternatives failed to meet one or more of the following criteria: increased capacity to meet demand; provide flexibility; improve the opportunity to travel; or reduce travel time; and therefore were found not practicable. It was found that Modified Alternative 2B was the

least environmentally damaging practicable alternative. There are no other reasonable and practicable alternative methods and/or locations that would accomplish the purpose of the proposed action and which would be less damaging to the aquatic environment.

3. **The extent and permanence of the beneficial and/or detrimental effects that the proposed structures or work may have on the public and private uses which the area is suited.**[80] The proposed road would have a number of permanent benefits, to include providing the capacity to meet traffic demand, reduce travel time, provide flexibility and improve travel between the Lynn Canal communities of Juneau, Haines, and Skagway. The road would also be beneficial by increasing viewing opportunities to see wildlife, marine flora, fauna, and provide additional recreational opportunities.

   Detrimental effects would include the increased access to historical, archaeological sites, bald eagle nest sites[81], and potential impacts to threatened and/or endangered species. Additionally, the project would result in the permanent loss of 95.3 acres of aquatic habitat[82]. The FEIS determined that Alternative 2B would not significantly restrict subsistence uses.[83]

XI. Evaluation of the Discharge of Dredge and Fill Material in Accordance with 404(b)(1) Guidelines:

1. Evaluation of Compliance with the Guidelines, 40 CFR § 230.10 (a)-(d)

(An * is marked above the answer that would indicate noncompliance with the Guidelines. No * marked signifies the question does not relate to compliance or noncompliance with the Guidelines. An "X" simply marks the answer to the question posed.) All chapter, Section, and Appendix references are made to the FEIS, dated January 2006)

(See FEIS 4.3, for the following items).

a. Alternatives Test.

Preliminary:	*Yes* *	*No*
(i) Are there available, practicable alternatives to the proposed discharge, which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences?	☐	☒

The No Action Alternative, Alternative 3, Modified Alternative 3, 4A, 4B, 4C and 4D were determined to have failed the Corps' overall project purpose and therefore were not practicable. Modified Alternative 2B was determined to be the least environmentally damaging practicable alternative.

		*
(ii) The selected practicable alternative involves a discharge into other locations in waters of the United States?	☒	☐
(iii) If the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?	☒	☐ *

[80] FEIS, Section 4, primarily Chapters 4.1.1 (Land Use and Recreation), 4.1.2 (Visual Resources), 4.1.4 (Socioeconomics), and 4.1.5 (Transportation).
[81] Approximately 45 bald eagle nesting sites would be indirectly impacted by the road.
[82] Special aquatic sites, and other waters of the U.S.
[83] FEIS, page 4-38.

b. Special restriction. Will the discharge:

(i) Violate State water quality standards? (See 4.3.9.)	☐ *	☒
(ii) Violate toxic effluent standards (under Section 307 of the Act)? (See 4.3.9, Appendix K.)	☐ *	☒
(iii) Jeopardize endangered or threatened species or their critical habitat? (See 4.3.17, ESA consultation).	☐ *	☒
(iv) Violate standards set by the Department of Commerce to protect marine sanctuaries? Not applicable: there are no marine sanctuaries in the project area. (See 4.3.17, Appendixes B, F, N, and S.)	☐ *	☒
(v) Evaluation of the information in the FEIS indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s). (See 4.3.9, Appendix K.)	☒	☐ *

(X) Based on the above information, the material is not a carrier of contaminants.

( ) The levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

( ) Acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the limits of the disposal site.

c. Other restrictions. Will the discharge contribute to significant degradation of "waters of the United States" through adverse impacts to:

	Yes	No
(i) Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites? (4.3.12, 4.3.13, 4.3.15.)	☐ *	☒
(ii) Life stages of aquatic life and other wildlife? (See 4.3.15, Appendix N, Q, and S.)	☐ *	☒
(iii) Diversity, productivity and stability of the aquatic life and other wildlife or wildlife habitat or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy? (See 4.3.13 to 4.3.15, Appendix O.)	☐ *	☒
(iv) Recreational, aesthetic and economic values? (See 4.3.5, Appendix H.)	☐ *	☒

d. Will all appropriate and practicable steps (40 CFR § 230.70-77, Subpart H) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?	☒	☐ *

2. Factual Determinations, 40 CFR § 230.11

The determinations of potential short-term or long-term effects of the proposed discharges of dredged or fill material on the physical, chemical and biological components of the aquatic environment included items a – h, below, in making a finding of compliance or non-compliance.

Subpart C: Potential Impacts on Physical & Chemical Characteristics of the Aquatic Ecosystem; (See 4.3.8.)
Subpart D: Potential Impacts on Biological Characteristics of the Aquatic Ecosystem; (See 4.3.13-4.3.17.2.)
Subpart E: Potential Impacts on Special Aquatic Sites; (See 4.3.12, Appendix O.)
Subpart F: Potential Impacts on Human Use Characteristics. (See Appendix F.)

There is potential for short-term or long-term adverse effects (in light of Subparts C-F, listed above) of the proposed discharge as related to:

	YES	NO
a. Physical substrate determinations (See 4.3.8.)	☒	☐
b. Water circulation, fluctuation and salinity determinations (See 4.3.9, Appendix K.)	☒	☐
c. Suspended particulate/turbidity determinations (See 4.3.9.)	☒	☐
d. Contaminant determinations (See 4.3.11.)	☐	☒
e. Aquatic ecosystem structure and function determinations (See 4.3.12.)	☒	☐
f. Proposed disposal site determination (disposal sites and/or size of mixing zone (See 4.3.)	☒	☐
g. Determination of cumulative effects on the aquatic ecosystem. (See Appendix U.)	☒	☐
h. Determination of secondary effects on the aquatic ecosystem. (See Appendix U.)	☒	☐

3. Technical Evaluation Factors, 40 CFR § 230 Subparts C-F

a. Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)

(For the following, refer to 4.3.9, and Appendix K.)

	Yes	No	N/A
1. *Substrate*	☒	☐	☐
2. *Suspended particulates/turbidity*	☒	☒	☐
3. *Water*	☒	☐	☐
4. *Alteration of current patterns and water circulation*	☒	☐	☐
5. *Alteration of Normal Water fluctuations/hydroperiod.*	☒	☐	☐
6. *Alteration of salinity gradient .*	☐	☐	☒

b. Potential Impacts on the Biological Characteristics of the Aquatic Ecosystem (Subpart D)

1. *Threatened and Endangered species (§230.30) (See 4.3.17, and Appendix S.) The NMFS concluded ESA consultation on August 7, 2007, agreeing with the Corps that the proposed action would not adversely affect any endangered and/or threatened species in the project area..*	☐	☒	☐
2. *Aquatic Food Web (§230.31) (See4.3.13, and Appendix N.)*	☐	☒	☐
3. *Other wildlife (See 4.3.15).*	☐	☒	☐

c. Potential Impacts on Special Aquatic Sites (Subpart E)

1. *Wetlands (See 4.3.13, Appendix O.)*	☒	☐	☐

2. *Sanctuaries and refuges (See 4.3.15-4.3.17.2, Appendix S.)*	☐	☐	☒
3. *Mud Flats (See 4.3.12-4.3.14, Appendix O.)*	☐	☐	☒
4. *Vegetated Shallows (See 4.3.12-4.3.14, Appendix O.)*	☐	☐	☒
5. *Coral reefs (See 4.3.12-4.3.14, Appendix O.)*	☐	☐	☒
6. *Riffle and pool complexes (See 4.3.12-4.3.14, Appendix O.)*	☐	☐	☒

d. Potential Effects on Human Use Characteristics (Subpart F)
Description of Social Environment [Base condition]:

1. Effects on municipal and private water supplies (See 4.3.9, Appendix K)	☐	☐	☒
2. Recreational and Commercial fishing impacts (including subsistence fishing) (See 4.3.1.3, Appendix F)	☒	☐	☐
3. Effects on water-related recreation (See 4.3.1.4, Appendix F)	☒	☐	☐
4. Aesthetics (See 4.3.3, Appendix G).	☒	☐	☐
5. Effects on parks, National and historic monuments, National seashores, wilderness areas, research sites, and similar preserves. (See 4.3.4, 4.3.1.4)	☐	☒	☐

4. Evaluation of Dredged or Fill Material, Subpart G, 40 CFR § 230.60

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material: (checked boxes apply).

1. ☒ Physical characteristics (receiving waters, bottom sediments, slurry constituents).
2. ☒ Hydrograph in relation to known or anticipated sources of contaminants.
3. ☐ Results from previous testing of the material or similar material in the vicinity of the project.
4. ☐ Known, significant, sources of persistent pesticides from land runoff or percolation.
5. ☒ Spill records for petroleum products or designated (§311 of CWA) hazardous substances.
6. ☐ Other public records of significant introduction of contaminants from industry, municipalities or other sources.
7. ☐ Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities.

b. An evaluation of the information above indicates that there is reason to believe the proposed dredged or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites. The material meets the testing exclusion criteria. ☒ Yes ☐ No ☐ Unknown
(See 4.3.11.), fill material is not a carrier of contaminants.

c. Is the discharge site adjacent to the extraction site and subject to the same sources of contaminants, or are the materials at the two sites substantially similar? ☒ Yes ☐ No ☐ Unknown
(See 4.3.), fill material is similar and not a carrier of contaminants.

d. If there is a high probability that the material proposed for discharge is a carrier of contaminants are there constraints available that are acceptable to the permitting authority, and the Regional Administrator, to reduce potential contamination to acceptable levels at the disposal site? ☐ Yes ☒ No
(See 4.3.9, Appendix K.)

V. Disposal Site Determination, 40 CFR §230.11(f)

For the following factors, refer to FEIS, Appendix K, 4.3.9. The following factors, as appropriate, have been considered in evaluating the disposal site.

1. Depth of water at the disposal site ☒
2. Current velocity, direction, and variability at disposal site ☒
3. Degree of turbulence ☒
4. Water column stratification ☒
5. Discharge vessel speed and direction ☐
6. Rate of discharge ☒
7. Dredged material characteristics ☒
8. Other factors affecting rates and patterns of mixing ☒

An evaluation of the appropriate factors in V. a. above indicates that the disposal site and/or size of mixing zone is acceptable. ☒ **Yes** ☐ **No**

6. Findings of Compliance or Non-compliance, 40 CFR § 230.12

a. ☐ On the basis of these Guidelines (Subparts C through G), the proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines.

b. ☒ On the basis of these Guidelines (Subparts C through G), the proposed disposal site for the discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines with the inclusion of the appropriate and practicable discharge conditions to minimize pollution or adverse effects to the affected aquatic ecosystem.

c. ☐ The proposed disposal site for discharge of dredged or fill material does not comply with the Section 404(b)(1) Guidelines for the following reasons:

1. There is a less damaging practicable alternative ☐
2. The proposed discharge will result in significant degradation of the aquatic ecosystem ☐
3. The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem ☐
4. There does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with these Guidelines ☐

7. SUBPART A – GENERAL

Dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystem of concern.

8. SUBPART B – COMPLIANCE WITH THE GUIDELINES

The actions proposed by ADOT for the Project would involve the discharge of fill material into special aquatic sites as well as into other waters of the U.S. in order to develop an open-water marine disposal site, a marine ferry terminal facility, and a highway connecting Juneau to the Katzehin River area.

Ferry Terminals. The ADOT assumed that the majority of each marine facility would be constructed on fill discharged into marine waters. Upland locations

are not available to substitute for the proposed discharge sites (preferred alternative) which would accomplish the project's purpose and need and result in fewer acres of impacts to waters of the U.S.

Construction of the Access Road. The Guidelines state: "Where the activity associated with a discharge which is proposed for a special aquatic site does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not 'water dependent'), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise." [84] The applicant has clearly demonstrated that the discharge of dredged and fill material into wetlands (special aquatic site) is the LEDPA considering overall project purpose. Alternative 3, Modified Alternative 3, 4A, 4B, 4C, and 4D, were determined not to be practicable after taking into consideration cost, existing technology, and logistics in light of the overall project purpose. Logistics and technology were the deciding factors in this analysis. It has been demonstrated that Modified Alternative 2B is the LEDPA in compliance with the 404(b)(1) Guidelines.

9. SUBPART C - POTENTIAL IMPACTS ON PHYSICAL AND CHEMICAL CHARACTERISTICS OF THE AQUATIC ECOSYSTEM

Applicable information about direct, indirect and cumulative environmental impacts of the proposed project[85] and alternatives related to substrate, suspended particulates/turbidity, water, current patterns and water circulation, and normal water fluctuations, was discussed in Section 4.0 of the FEIS, which considered the resource values for the project. The individual affected resources are discussed in detail in Section 3.0 of the FEIS. The FEIS anticipated that adverse impacts to these characteristics would be relatively minor.

Restricting the discharge of waste rock into two or more locations in Lynn Canal (or other contiguous navigable waters such as Chilkoot Inlet) would not result in a hazard to navigation, and would result in minimal impact to U.S. navigable waters. The introduction of unwashed blasted rock into Lynn Canal at any location would result in an increase of total suspended solids, i.e., turbidity, during the discharge[86]. This turbidity would be temporary since the discharge would quickly settle, and not remain in suspension, and therefore, not drift for long distances.

10. SUBPART D - POTENTIAL IMPACTS ON BIOLOGICAL CHARACTERISTICS OF THE AQUATIC ECOSYSTEM

Pertinent information about direct, indirect and cumulative impacts of the proposed project and all of the project's components and alternatives related to threatened and endangered species, fish, aquatic organisms, and other wildlife was discussed in Chapter 4.0 of the FEIS. The discharge of fill material into waters, of the U.S., including wetlands, in conjunction with

[84] 40 CFR Part 230.10(a)(3), Subpart B, Compliance with the Guidelines.
[85] The proposed project includes components described in the Corps' public notice, dated April 21, 2006, and Section II of this ROD.
[86] See XI.2.d. in this ROD or in the FEIS, 4.3.11.

the construction of the project's marine dock facilities, highway and material stockpiles would result in an impact to living organisms directly underneath the discharged material. The discharge of fill material for the road construction would not result in major permanent modifications to the area's food web. There would be temporary and permanent impacts to wildlife, such as waterfowl, deer, bear, and small mammals: by burial of the special aquatic sites (e.g., wetlands) within and adjacent to the road alignment and by the direct displacement of wildlife from the habitat.

11. SUBPART E - POTENTIAL IMPACTS ON SPECIAL AQUATIC SITES

Special aquatic sites that would be impacted by the proposed project are palustrine forested wetlands which are typical in Southeast Alaska. There would be approximately 62 acres of this type lost in the project area.

Information about the functions and values associated with the area's wetlands (and other waters of the U.S.) was discussed in the FEIS' Appendix N, Essential Fish Habitat, and Appendix O, Wetlands Technical Report. The impact upon wetlands was discussed in Section 4 of the FEIS, under each of the 2006 FEIS alternatives described in Section VI of this ROD. The FEIS recognizes that large portions of Southeast Alaska are wetlands, and that the wetland types within the project site are not unique to Southeast Alaska. The projected wetland losses have been avoided and minimized. Compensatory in lieu fee mitigation for wetlands losses has been proposed by the agencies and agreed to by the applicant and the Corps for unavoidable losses. Special conditions will be added to the permit. See DA special conditions #4a-h, and #32.

12. SUBPART F - POTENTIAL IMPACTS ON HUMAN USE CHARACTERISTICS

Human use characteristics that would be affected by the proposed project include, but would not be limited to, transportation, fisheries, water-related recreation, aesthetics, and recreational areas. Pertinent information about potential impacts of the proposed work on human use characteristics is found in Section 4 of the FEIS and under each of the 2006 FEIS alternatives described in Section VI of this ROD. Anticipated impacts, both beneficial and detrimental, ranged from relatively minor impacts to water-related recreation to moderate long-term impacts to aesthetics.

13. SUBPART G - EVALUATION AND TESTING

There is no reason to believe that any of the material to be discharged into waters of the U.S. would be contaminated.

14. SUBPART H - ACTIONS TO MINIMIZE ADVERSE EFFECTS

Actions proposed to minimize potential adverse effects for each available alternative were discussed in Section 5 of the FEIS and under each of the 2006 FEIS alternatives described in Section VI.A. of this ROD. Actions to minimize adverse impacts to waters of the U.S. were identified[87].

The following special conditions would append to the Corps permit. Rationale is included for special conditions:

[87] Example: Use of trestle bridges over moderately sized drainages and waterways versus culverts and fill.

1. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.

Rationale: This condition is required by the Corps of Engineers, Appendix A to Part 325 Part B Special Conditions, and are intended to ensure free navigation for the public and reduce impacts to the public interest, per [33 CFR 320.4(r) and 33 CFR 320.4(o)(3)]. Note the rationale for special conditions 2, and 3 below remains the same.

2. You must install and maintain, at your expense, any safety lights and signals prescribed by the United States Coast Guard (USCG), through regulations or otherwise, on your authorized facilities. The USCG may be reached at the following address and telephone number: Commander (dpw), 17th Coast Guard District, P.O. Box 25517, Juneau, Alaska 99802; (907) 463-2272.

3. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

4. In-Lieu-Fee Compensatory Mitigation:

a. The permittee shall pay the sum of $440,000 as In-Lieu Fee (ILF) for wetland restoration, enhancement, preservation or land acquisition for the unavoidable adverse impacts to fresh water aquatic resources. This compensatory mitigation amount of $440,000 is based on June 2006 dollars and shall be adjusted for the rate of inflation to the year in which payment is made to the ILF operator. The method for determining inflation shall be the same as those used by FHWA to determine project costs.

b. The permittee shall pay the sum of $780,000 as an ILF to offset for the loss of 32.0 acres of unavoidable adverse impacts to intertidal and subtidal marine waters (EFH) of the United States. The $780,000 is compensatory mitigation required under Section 404 of the Clean Water Act. This compensatory mitigation amount of $780,000 is based on June 2006 dollars and shall be adjusted for the rate of inflation to the year in which payment is made. The method for determining inflation shall be the same as those used by FHWA to determine project costs.

c. Therefore, the total ILF amount required under Section 404 of the Clean Water Act for the Project is found in two parts: (4a: $440,000) + (4b: $780,000) = $1,220,000.

d. Total payment to the ILF operator shall be made for special condition 4a prior to any construction. Construction is defined as ground breaking or land clearing activity with heavy equipment, the placement of fill material in waters of the U.S. or work within waters of the U.S.

e. Payment or fund expenditures for special condition 4b shall be made in accordance with the Essential Fish Habitat mitigation plan, found in the document, *"Mitigation Commitments Relevant to Section 404 of the Clean Water Act."*

f. If project modifications result in a footprint increase in low-value fresh water jurisdictional wetlands, and the footprint increase is less than five acres, an ILF increase is not required. If the jurisdictional low-value wetland fill footprint exceeds 66.9 acres (61.9 + 5.0 = 66.9 acres) for the project, the amount of additional mitigation shall be determined independently, and shall be in addition to the amount in special condition 4a ($440,000).

g. If project modifications result in a footprint increase impacting marine or high-value jurisdictional habitat areas, the amount of additional mitigation shall be determined independently, and shall be in addition to the amount in special condition 4b ($780,000).

h. If project modifications are requested by ADOT an approved DA permit shall be in hand prior to placing fill or structures in jurisdictional waters of the U.S. A permit modification is required if the plans vary from those permitted by the DA. Special Conditions 4a through 4g address mitigation requirements not DA permit requirements.

Corps Rationale: A condition on mitigation was recommended by CBJ. This condition shall ensure compliance with our ILF agreements and Corps policy, per 33 CFR 320.4(r) and 40 CFR 230.70 and the new mitigation rule of April 10, 2008. This condition is required to ensure compliance with the permit condition recommended by the U.S. Environmental Protection Agency in their letter of June 12, 2006, to mitigate for impacts to waters of the U.S.

5. All anadromous fish streams will be crossed by bridges. Streams that can be crossed with 130-foot or shorter bridges will not have any structures or fill placed below the ordinary high water mark of the stream channel.

Corps Rationale: This condition was recommended by CBJ. This condition will assure that anadromous stream circulation patterns are preserved to accommodate resident fish movements, per 33 CFR 320.4(r) and 40 CFR 230.74(d).

6. Permittee shall coordinate with the U.S. Fish & Wildlife Service (USFWS) to avoid impacts on eagle nesting trees, in accordance with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Permittee shall also abide by the National Bald Eagle Management Guidelines at http://www.fws.gov/migratorybirds/baldeagle.htm.

Corps Rationale: An eagle condition was recommended by CBJ. This condition is required to ensure protection to the bald eagle in compliance with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. This condition was coordinated with the USFWS.

7. No in-water work is permitted between April 15 and June 15 in anadromous waters. Marine water work can only occur if there is a complete tide out event during this window.

Corps Rationale: The condition was recommended by CBJ. This condition is also required to ensure compliance with Alaska Department of Natural Resources' Office of Habitat Management and Permitting's fish habitat permits for the project. This condition ensures that fish movements are not hampered by in water construction, per 33 CFR 320.4(r) and 40 CFR 230.74(d).

8. No fill material shall be side cast into Berners Bay during construction.

Corps Rationale: This condition was a permit condition recommended by CBJ. This condition is required to ensure that the Project would not have adverse effects on the ARNI within the Berners Bay Area. Berners Bay has been designated an ARNI by EPA. This condition is required to ensure that the construction activities do not waste rock into marine waters, per 33 CFR 320.4(r).

9. The Measures to Minimize Harm identified in the April 3, 2006, Federal Highway Administration's Record of Decision for the Project shall be incorporated as elements of the project. If there is any conflict between FHWA's Measures to Minimize Harm and conditions of DA permit, the conditions of the DA permit shall be controlling.

Corps Rationale: This condition is required to ensure compliance with the permit conditions recommended by CBJ. This condition is required to ensure that the construction activities do not waste material into waters of the U.S. per 33 CFR 320.4(r).

10. The permittee will continue to fund the U.S. Fish & Wildlife Service's aerial surveys for a period of five years after all construction is completed to assess the impact, if any, of the project on the Lynn Canal bald eagle population.

Corps Rationale: This condition is recommended by CBJ. This condition is also required to ensure protection to the bald eagle in compliance with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

11. Permittee shall construct the proposed bridges for the Antler and Lace Rivers so as to avoid placing fill material in any contiguous wetlands.

Corps Rationale: This condition is required to ensure compliance with the permit condition recommended by the U.S. Environmental Protection Agency in their letter of June 12, 2006, to mitigate for impacts to waters of the U.S. The CBJ also had recommendations for this stretch of construction. This condition is required to minimize adverse environmental impacts, per 33 CFR 320.4(r) and 40 CFR 230.74(a).

12. For project segments not yet fully designed, the permittee shall submit to the Corps, for review and approval, detailed plan sheets that reflect the contract plans and specifications for all work involving fill placement in waters of the United States, including wetlands. The submission shall be at least 30 days prior to contract advertisement and at least 90 days prior to initiation of construction, whichever provides a greater review period. "Construction," as used here, is defined as groundbreaking or land-clearing activity with heavy equipment, or the placement of fill material within 50 feet of waters of the United States. Plans sheets and any accompanying specifications shall delineate all fill footprints in waters of the U. S., including wetlands and provide site-specific details on the fill quantities, fill footprints and construction methods (e.g. culvert installation in streams for road crossings) in sufficient detail for permit compliance inspections by the Corps. The permittee shall demonstrate how the Department of the Army permit conditions and authorization has been incorporated into the plans and specifications. Submittals from the applicant, and or approvals from the Corps may be completed in multiple phases.

Corps Rationale: This condition is required to ensure that the project plans and construction methodologies comply with all terms and conditions of the Corps permit, and the work evaluated in the FEIS, per 33 CFR 325.1.

13. The permittee shall notify the Corps, in writing, at least 30 days prior to the proposed construction of any offsite disposal areas associated with this project and shall submit a preliminary jurisdictional determination to the Corps for verification no waters of the U.S., including wetlands are involved. Construction of the new waste sites shall not commence until the Corps has determined in writing, that the disposal sites and methods of disposal do not require additional Corps authorization.

Corps Rationale: This condition is required to ensure compliance with the permit conditions recommended by CBJ on avoiding wetland activities. This condition is required to ensure that the project plans and construction methodologies comply with all terms and conditions of the Corps permit, and the work evaluated in the FEIS, per 33 CFR 325.1.

14. The permittee shall delineate by staking, flagging and/or marking with other observable methods the construction area limits prior to commencing construction in each area. The permittee shall notify the Corps, in writing, a minimum of 14 days before construction in each area, of the date when staking of that area will be available for Corps inspection. The permittee shall arrange for an inspection of the delineated limits with the Corps. The delineated limits shall be maintained throughout construction to prevent equipment encroachment and/or fill material placement beyond the project-authorized footprint.

Corps Rationale: This condition is required to ensure compliance with the permit conditions recommended by CBJ on avoiding unnecessary wetland activities. This condition is required to ensure the construction limits do not exceed the permitted footprint throughout construction, per 33 CFR 320.4(r).

15. A pre-construction meeting shall be held between the permittee, the Corps, and the prime contractor(s) whose work is subject to this permit, at least 14 days prior to construction activities, placement of fill material, in waters of the U. S., including wetlands. A minimum notice of a ten working days shall be provided to the Corps. The purpose of the meeting shall be to discuss the work authorized under this permit and the environmental mitigation measures required for compliance, in addition to serving as a forum for open discussion on the above, to identify problem areas, and to answer questions that attendees may have. The permittee shall insure that all contractors and workers whose work is subject to this permit are advised of its terms and conditions. All contractors whose work is subject to this permit shall be given a copy of this permit and required to keep a copy on-site.

Corps Rationale: The condition is added to ensure that the contractor(s) working for ADOT&PF are fully informed of all permit terms and conditions and do not exceed the authorized footprint, or encroach into adjacent waters of the U.S. per 40 CFR 230.74(b) 33 CFR 320.4(r) and 33 CFR 326.4.

16. Construction activities in wetland areas shall be kept to a minimum and shall not exceed the clearing limits. Vehicles traversing wetlands shall be confined to the minimum corridor necessary to conduct the work. Heavy equipment operating in wetlands outside the fill footprint shall be operated

on mats of sufficient size and material(s) to minimize soil disturbances, and to allow complete removal of the mats without further soil disturbances after construction.

Corps Rationale: This condition is required to ensure compliance with the permit conditions recommended by CBJ on avoiding unnecessary wetland activities, per 33 CFR 320.4(r).

17. 'Certified' seed mixtures shall be used where seeding is required for erosion control and/or revegetation. Seed collection may be made from the surrounding or regional area for revegetation purposes but not for short-term erosion control purposes. The purpose of the use of certified seed mixtures is to ensure that a high standard of pure live seed is utilized, and to avoid or minimize the contamination of the seed mixture with noxious weed and/or weed seed.

Corps Rationale: This condition is required to reduce invasive and weed seeds from encroaching on the project area, and to ensure a cover crop for erosion protection, per 33 CFR 320.4(r) and 40 CFR 230.72(a)(1).

18. All road cut and fill areas, and waste material disposal sites shall be limited to the minimum required to complete the work and shall be properly stabilized concurrently with material placement to prevent sediment-laden runoff from entering natural surface waters.

Corps Rationale: This condition is required to ensure compliance with the permit conditions recommended by CBJ on avoiding unnecessary wetland activities. This condition is added to ensure water quality standards are met outside of the project work site, and that pollutants do not leave the work area, per 33 CFR 320.4(r), 40 CFR 230.76(b), and 40 CFR 230.73(c).

19. The permittee shall implement and maintain effective erosion and sediment control measures before, during, and after construction. Filled wetland areas shall be aggressively monitored and maintained to prevent erosion and sediment from entering water bodies.

Corps Rationale: This condition is added to ensure water quality standards are met outside of the project work site, and that pollutants do not leave the work area. Juneau is a high rain fall area and aggressive and timely erosion practices are necessary to ensure on-site containment of runoff, per 33 CFR 320.4(r) and 40 CFR 230.73(c).

20. All filled areas in stream corridors shall be treated for revegetation within 30 days of completion of road-stream crossings and within the growing season in which the construction occurs. If construction of a stream crossing is completed after the growing season, the disturbed stream banks shall be stabilized by other means for the winter and revegetation treatments shall occur at the beginning of the following growing season. At the end of one full growing season, live vegetative cover shall be equal to or greater than 25 percent of the surrounding undisturbed live vegetative cover density and 75 percent after three years.

Corps Rationale: The purpose of this stipulation is to minimize erosion and prevent runoff from entering streams. This will confine and reduce suspended particulates/turbidity to the work area where settling, removal and/or treatment can occur, to ensure on site containment of runoff, per 33 CFR 320.4(r) and 40 CFR 230.73(c).

21. Natural wetland drainage and inundation patterns shall be maintained through the incorporation of adequately sized (diameter and length), sloped and spaced culverts and/or bridges. The permittee shall be responsible for annual monitoring, maintenance, and/or repair, and/or replacement of all culverts and bridges for the life of the project to insure that natural wetland drainages and inundation patterns are maintained. Upslope ponding shall be considered an indicator of non-compliance with this condition.

Corps Rationale: This condition is required to ensure that road design does not interfere with stream flow and that water passage is designed to accommodate fluctuating water levels allowing both low and high water flows to pass and maintain circulation patterns, per 33 CFR 320.4(r) and 40 CFR 230.74(d).

22. All culverts and bridges shall be designed, installed, and maintained so they do not interfere with free and unobstructed passage of all life stages of fish (both anadromous and resident) present in the stream under reasonably expected flow levels. In addition, the culverts shall be placed in and aligned with the natural stream channel and hydraulic gradient.

Corps Rationale: This condition ensures that culverts and bridges are designed to accommodate circulation and fish movements, per 33 CFR 320.4(r) and 40 CFR 230.74(d). This allows for fish protection if any resident fish are found in additional streams crossed by the road. All anadromous streams are proposed to be bridged.

23. Gravel and streambed material shall be used in the bottoms of fish-passage culverts.

Corps Rationale: This condition will assure that roads and channel spanning structures are designed to accommodate circulation and resident fish movements, per 33 CFR 320.4(r) and 40 CFR 230.74(d). All anadromous streams are proposed to be bridged.

24. Temporary fills in wetlands shall be placed on geotextile mats or other suitable materials of sufficient thickness to facilitate the removal of the fill material to the maximum extent practicable when it is no longer needed for construction. No natural earthen material shall be removed from under the geotextile mat when the temporary fill is removed.

Corps Rationale: This condition is required to ensure that the appropriate protective device is used to sufficiently minimize adverse environmental impacts, per 33 CFR 320.4(r) and 40 CFR 230.74(a).

25. All construction in anadromous fish streams shall take place when stream disturbances would have the least impact on anadromous fish species. All in-water anadromous fish stream construction activities shall be coordinated with the Alaska Department of Natural Resources, Habitat Division. Construction work that occurs above the ordinary high water mark area of the stream and does not include in-water construction may be conducted throughout the year.

Corps Rationale: This condition is required to ensure compliance with the permit conditions recommended by CBJ on avoiding unnecessary impacts to fisheries. This condition is required to prevent the indirect or direct loss or damage to wildlife resources, per 33 CFR 320.4 (c) and 33 CFR 320.4(r).

26. In-water work areas, except for stream crossings by construction equipment and pile driving, shall be isolated from flowing waters in all fish bearing streams.

Corps Rationale: This condition is required to ensure compliance with the permit conditions recommended by CBJ on avoiding unnecessary impacts to fisheries. This condition is required to avoid disruptions of spawning or migration and other biologically critical time periods as per 33 CFR 320.4(r) and 40 CFR 230.75(e).

27. Permittee shall work with the communities of Juneau, Haines, and Skagway to develop, to the extent practicable, a beneficial use for the estimated 0.4 million cy of waste rock that would otherwise be discharged into marine waters. The permittee's "Beneficial Use Evaluation" shall include, but is not limited to, the construction of artificial reef habitat in Lynn Canal.

Corps Rationale: This condition is required to reduce the disposal of fill material into waters of the United States. This condition is required to ensure compliance with 40 CFR 230.1, and satisfy the Environmental Protection Agency.

28. During pile driving activities in the Lynn Canal, the Chilkoot Inlet and Berners Bay, a vibratory hammer and/or a reverse rotary drill shall be used to the extent practicable. If impact hammers are needed to drive steel piles, NMFS shall first be provided with a description of why vibratory hammers cannot be used. Driving near-shore pilings shall occur only during periods of low tides when the site is dewatered.

Corps Rationale: This condition is required to ensure compliance with the Marine Mammal Protection Act, Endangered Species Act, and is required to prevent the indirect or direct loss or damage to wildlife resources as per 33 CFR 320.4 (c) and 33 CFR 320.4(r).

29. Riprap shall be placed along stream banks as necessary to maintain stream bank integrity, and shall in fish bearing streams include the use of bioengineering techniques to improve habitat value of the riprap, such as incorporation of willow stakes or other locally available vegetation.

Corps Rationale: This condition is required to confine erosion to a small area where settling can occur, and to encourage the rapid growth of a cover crop, per 33 CFR 320.4(r) and 40 CFR 230.73(c).

30. A copy of an as-built survey shall be provided to the Corps for all fills (roads, pads, etc) placed in waters of the U.S., including wetlands, as well as culverts and bridges over freshwater streams each year after implementation of the work authorized by this permit, and upon completion of the project, a final as-built survey shall be submitted within one year, or within one month from the date of surveys required for other Federal or state offices, whichever is earlier.

Corps Rationale: This condition is added to ensure that the project plans and construction methodologies comply with all terms and conditions of the Corps permit, per 33 CFR 326.4.

31. All conditions and agreements found in the National Marine Fisheries Service September 27, 2005, Endangered Species Act Section 7 consultation letter shall be followed by ADOT and its contractors.

Corps Rationale: This condition is added to ensure compliance with the Endangered Species Act.

32. The applicant shall supply a yearly update to the Corps of Engineers on mitigation work completed and in lieu payments made according to the *Essential Fish Habitat mitigation plan, found in the document "Mitigation Commitments Relevant to Section 404 of the Clean Water Act."*

Corps Rationale: This condition is also required to ensure compliance with EFH coordination agreement between the FHWA in the FEIS. This will also ensure that EFH mitigation will be completed.

XII. Compliance with Environmental Requirements:

The issuance of a permit for the proposed project is in compliance with applicable environmental requirements. The development of the DEIS, SEIS and the FEIS was accomplished in accordance with the National Environmental Policy Act of 1969, as amended. Recommendations of the USFWS prepared pursuant to the Fish and Wildlife Coordination Act of 1958, as amended, have been fully considered in the permit decision. Coordination with the NMFS pursuant to EFH and Section 7 of the Endangered Species Act of 1973, as amended, has been completed. An evaluation of the discharge of dredge and fill material as required by Section 404(b)(1) of the Clean Water Act, 40 CFR 230, has been completed. The discharge complies with the guidelines, with the inclusion of the appropriate and practicable conditions to minimize pollution and the adverse effects to the affected ecosystem. The Alaska Department of Natural Resources has issued a Coastal Zone Management Consistency Determination, and ADEC has issued a Certificate of Reasonable Assurance, with conditions. Both of these documents will be incorporated into and become part of the Corps' permit.

XIII. Section 176(c) of the Clean Air Act General Conformity Rule Review:

The proposed project has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. The project area is located in an air quality attainment area where the State Implementation Plan (SIP) does not contain any transportation control measures. Therefore, conformity procedures do not apply to this project, and a conformity determination is not required per 40 CFR 51.[88]

XIV. Determination:

I find that the issuance of the Corps permit, as described by regulations published in 33 CFR Parts 320 through 330, with the scope of work as described in this document is based on a thorough analysis and evaluation of all issues set forth in this ROD. Although the FEIS was published in January 2006, there are no substantial changes to the proposed action and there are no significantly new circumstances or information relevant to environmental concerns bearing on the proposed action or its impacts. There are no less environmentally damaging, practicable alternatives available to Alaska Department of Transportation and Public Facilities that will achieve the

[88] FEIS, Air quality, page 4-51

purposes for which the work is being proposed; the proposed work is deemed to comply with established Federal, State and local laws, regulations, and codes; the issuance of this permit is consistent with National Policy, statutes, and administrative directives; and on balance, issuance of a Corps' permit to ADOT for the proposed work is not contrary to the public interest. As explained above, all practicable means to avoid and/or minimize environmental harm from the selected, permitted alternative has been adopted and required by terms and conditions of this permit.

13 June 2008

Kevin J. Wilson
Colonel, Corps of Engineers
District Commander

Date

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