US Army Corps
of Engineers
Alaska District

ANCHORAGE
Regulatory Division (1145)
CEPOA-RD
Post Office Box 6898
JBER, Alaska 99506-0898

Public Notice of Application for Permit

PUBLIC NOTICE DATE:	**December 29, 2022**
EXPIRATION DATE:	**January 30, 2023**
REFERENCE NUMBER:	**POA-2022-00526**
WATERWAY:	**Turnagain Arm**

Interested parties are hereby notified that a Department of the Army permit application has been received for work in waters of the United States as described below and shown on the enclosed project drawings.

All comments regarding this public notice should be sent to the address noted above. If you desire to submit your comments by email, you should send it to the project manager's email as listed below or to regpagemaster@usace.army.mil. All comments should include the public notice reference number listed above.

All comments should reach this office no later than the expiration date of this public notice to become part of the record and be considered in the decision. Please contact Estrella Campellone at (907) 753-2518, toll free from within Alaska at (800) 478-2712, or by email at estrella.f.campellone@usace.army.mil if further information is desired concerning this public notice.

APPLICANT: Karen Keesecker, Chugach Electric Association, Inc. (Chugach);
P.O. Box 16300; 1200 East 1st Avenue; Anchorage, Alaska 99519. Telephone (907) 762-4726.
Email: Karen_Keesecker@chugachelectric.com

AGENT: Paul McLarnon, HDR; 582 East 36th Avenue; Anchorage, Alaska 99503.
Email: paul.mclarnon@hdrinc.com

LOCATION: The project is located within T. 10 N, R. 1 E, Sections 21-24, 29, 30; T. 10 N, R. 2 E, Section 1; T. 10 N, R. 1 W, Sections 5, 9-10,14-15, 24-25; T. 11 N, R. 1 W, Section 32 of the Seward Meridian. The proposed project extends from the Indian Substation (Latitude 61.000456° N, Longitude 149.499293° W) to the Girdwood Substation (Latitude 60.941448° N, Longitude 149.171027° W), near Girdwood, Alaska.

PURPOSE: The purpose of this project is to serve the public interest by rebuilding and upgrading approximately 15 miles of existing 115kV transmission located between Girdwood and Indian. It would increase the transmission capacity to 230kV standards to maintain reliability and accommodate anticipated electrical load growth. Inspections conducted in 2007, concluded that the transmission line structures were nearing the end of their useful life and required replacement.

The entire transmission line is 90.4 miles and runs from Quartz Creek Substation near Kenai Lake to the substation in Anchorage, which was originally constructed to carry power from the Cooper Lake Hydroelectric Power Plant to Anchorage. Today, this line also carries power produced by the Bradley Lake Hydroelectric Facility and the Nikiski Combined Cycle Power Plant. In addition to Anchorage, the line also serves local distribution substations at Indian, Dave's Creek, Summit Lake, Hope, Portage, and Girdwood, and interconnects with the power grid for Seward, Kenai/Soldotna, and Homer.

PROPOSED WORK: The project proposes to rebuild the electrical transmission segment between Girdwood Substation to Indian Substation (15 miles), which would require placement of 15,000 cubic yards of gravel and riprap and 305 cubic yards of pipe and concrete in 1.97 acres of waters of the U.S., including wetlands.

Waters of the U.S.	Area (acre)	Access Platforms
Wetlands above HTL[1]	0.01	3
Waters between HTL and MHW[2]	0.67	11
Waters below MHW	1.29	
Total	1.97	15

[1]HTL: High Tide Line; [2]MHW: Mean High Water.

Proposed work in waters of the U.S. includes the following:

1. Remove old piles and wood frame structures. Foundations would be cut off at ground surface and concrete pads removed.
2. Install 55 new utility structures (steel or new wood frames) in waters of the U.S. H-poles or single poles once installed would reach heights up to 20 feet.
3. Installed 15 new towers up to 50 feet tall.
4. All work would take place within Chugach's powerline 100-foot right-of-way (ROW); the new transmission line would generally follow the ROW centerline. In most cases, each new structure would be placed near the removed structure, except where current design standards require a change in location due to hazard and/or siting constraints (e.g., new utility pole No. 24-7 would be set outside avalanche-prone areas).
5. Foundations for the new structures would be installed based on subsurface conditions and location.

6. Rock anchor foundations would be installed by drilling rods into solid rock. Rods would be encased with concrete in a 60-inch diameter steel casing, with a minimum reveal of 12-feet. An anchor plate would secure the new poles to the new rock-anchored foundation.
7. Equipment to install the rock anchor foundation would include an excavator for rock drilling, welding equipment, a crane-mounted pile driver, concrete pump, and concrete trucks.
8. It is anticipated the use of a 150-ton crane with a 25-foot turning radius to support the installation of structures at select sites directly adjacent or below Turnagain Arm HTL.
9. The 150-ton crane would support removal of old towers/piles/foundations, removal of existing conductor, construction of new foundations, and installation of towers, pile-driving, erection of steel structures, stringing, sagging, and clipping of the new conductor.
10. Access platforms would be required on 15 sites south of the highway to ensure the safe installation and operation of the crane.
11. In areas that do not have solid rock, the new towers would be installed using pipe piles dimensions 30-inch, 36-inch, or 42-inch diameter (approximately 40 to 45 feet in length) driven into the substrate with the crane-mounted pile-driver).
12. Wetlands would be crossed with low pressure ground equipment during winter months while the ground is frozen with 12-inches of ice cover and 12-inches of snow cover. If snow conditions cannot not be met, mats may be used. Otherwise, a combination of low-pressure ground equipment and/or distributed weight matting would be used.

All work would be performed in accordance with the enclosed plan (sheets 1-27), dated December 2022.

ADDITIONAL INFORMATION: The proposed project intersects lands owned by the Municipality of Anchorage (MOA), the Alaska Department of Natural Resources (ADNR), and private landowners. It would require a Title 16 Fish Habitat Permit from the Alaska Department of Fish and Game, a special use permit from the Chugach State Parks, and an authorization to conduct work along the right-of-way from the Alaska Department of Transportation and Public Facilities.

APPLICANT PROPOSED MITIGATION: The applicant proposes the following mitigation measures to avoid, minimize, and compensate for impacts to waters of the United States from activities involving discharges of dredged or fill material.

a. Avoidance and Minimization: Most of the construction and associated access improvements would be conducted during winter conditions when the ground is frozen, especially when operating equipment in wetlands. Installation of utility poles and towers below the MHW elevation of Turnagain Arm, as well as any drilling into rock below HTL would be conducted during low tidal cycles (in-dry conditions) to avoid potential impacts to the Cook Inlet beluga whales. When crossing wetlands, low pressure ground equipment would be used, preferably when the ground is frozen with 12-inches of ice cover and 12-inches of snow cover. When ideal ice and snow conditions cannot not be met, use of matting would be considered. If there are areas where a winter wetland

crossing is not possible and ground conditions are suitable per agency standards, Chugach shall utilize a combination of low-pressure ground equipment and/or distributed weight matting. Chugach would follow the Standard Operating Procedures/and select Operating Policy (SOP/OP) and other best management practices (BMPs) outlined in the ROW's Plan, as well as the requirements of other federal, state and local permits issued for the project. The Chugach's SOP/OP includes, among others, conditions to access routes and required points for work on the transmission line; restrictions on timing for access; specific equipment used for vegetation removal and surface work, equipment required for work on the transmission line and to cross wetlands and streams; actions to manage wildlife issues (wildlife encounters, interactions with bears, as well as nesting or injured/dead birds in compliance with the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, etc.); methods to cross streams (i.e., fording) and use of temporary culverts or bridges to minimize impacts to fish habitat, bank erosion, etc.; spills/leaks of hazardous material (e.g., fluids, fuel); as well as responsibilities of each party.

b. Compensatory Mitigation: Chugach is planning to conduct most of the construction work and associated access improvements during winter when the ground is frozen. Chugach has committed to employing numerous design measures to avoid impacts and minimize unavoidable impacts and is not proposing compensatory mitigation for unavoidable impacts on waters of the U.S.

WATER QUALITY CERTIFICATION: A permit for the described work will not be issued until a certification or waiver of certification, as required under Section 401 of the Clean Water Act (Public Law 95-217), has been received from the Alaska Department of Environmental Conservation (ADEC). The applicant/agent is coordinating directly with ADEC.

CULTURAL RESOURCES: The latest published version of the Alaska Heritage Resources Survey (AHRS) has been consulted for the presence or absence of historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places. There are cultural resources in the permit area and/or within the vicinity of the permit area. Consultation of the AHRS constitutes the extent of cultural resource investigations by the U.S. Army Corps of Engineers (Corps) at this time. The applicant has coordinated with State Historic Preservation Office (SHPO) between May 6, 2022, and June 6, 2022; based on this coordination, the Corps has made a No Adverse Effect determination for the proposed project. This application is being coordinated with the SHPO, federally recognized tribes, and other consulting parties. Any comments SHPO, federally recognized tribes, other consulting parties may have concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in our final assessment of the described work.

ENDANGERED SPECIES: The project area is within the known range of the beluga whale (*Delphinapterus leucas*) and its critical habitat.

We have determined the described activity would have no effect on the beluga whale and would have no effect on any designated or proposed critical habitat, under the Endangered Species Act of 1973 (87 Stat. 844). Therefore, no consultation with the National Marine Fisheries Service (NMFS) is required. Chugach is proposing to place fill below HTL and MHW during low tide conditions (in-the-dry) to create the access platforms and working areas for the crane. Once the access platforms and working areas are built, the piles would be driven into the substrate through the new fill (out of water). This would avoid potential impacts on beluga whales and its critical habitat during construction. However, any comments NMFS might have concerning endangered or threatened wildlife species or their critical habitat will be considered in our final assessment of the described work.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH).

The project area is within the known range of Chinook (Oncorhynchus tshawytscha), chum (Oncorhynchus keta), coho (Oncorhynchus kisutch), sockeye (Oncorhynchus nerka), and pink salmon (Oncorhynchus gorbuscha). Estuarine and marine waters in Turnagain Arm provide EFH and support all life stages for these species. Some of the freshwater streams, lakes, ponds, wetlands, and other water bodies crossed by the proposed project support Pacific salmon, as identified by the Alaska Department of Fish and Game Anadromous Waters Catalog.

Seven existing structures (24-1 through 24-7) that need to be replaced/rebuilt are in inundated waters of the U.S. (e.g., streams), of which six are also identified as freshwater EFH for Pacific salmon. Six of the proposed structures would be supported by two 36-inch diameter piles driven into the substrate, while structure No. 24-7 would be supported by three 50-inch diameter piles. A vibratory hammer, rather than an impact hammer, would be used to install foundations. The footprint for each foundation would eliminate a relatively small area providing EFH. Work in the Tidewater Slough area would occur during winter conditions; equipment crossing of stream is not anticipated (Project Description document attached). No structures would be installed in Bird Creek and equipment crossing is not anticipated.

We have determined the described activity would not adversely affect EFH in the project area.

TRIBAL CONSULTATION: The Corps fully supports tribal self-governance and government-to-government relations between federally recognized tribes and the federal government. Tribes with protected rights or resources that could be significantly affected by a proposed federal action (e.g., a permit decision) have the right to consult with the Alaska District on a government-to-government basis. Views of each tribe regarding protected rights and resources will be accorded due consideration in this process. This public notice serves as notification to the tribes within the area potentially affected by the proposed work and invites their participation in the federal decision-making process regarding the protected tribal right or resource. Consultation may be initiated by the affected tribe upon written request to the District Commander during the public comment period.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, reasons for holding a public hearing.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts, which the proposed activity may have on the public interest, requires a careful weighing of all the factors that become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The outcome of the general balancing process would determine whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur. The decision should reflect the national concern for both protection and utilization of important resources. All factors, which may be relevant to the proposal, must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria (see Sections 320.2 and 320.3), a permit will be granted unless the District Commander determines that it would be contrary to the public interest.

The Corps is soliciting comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

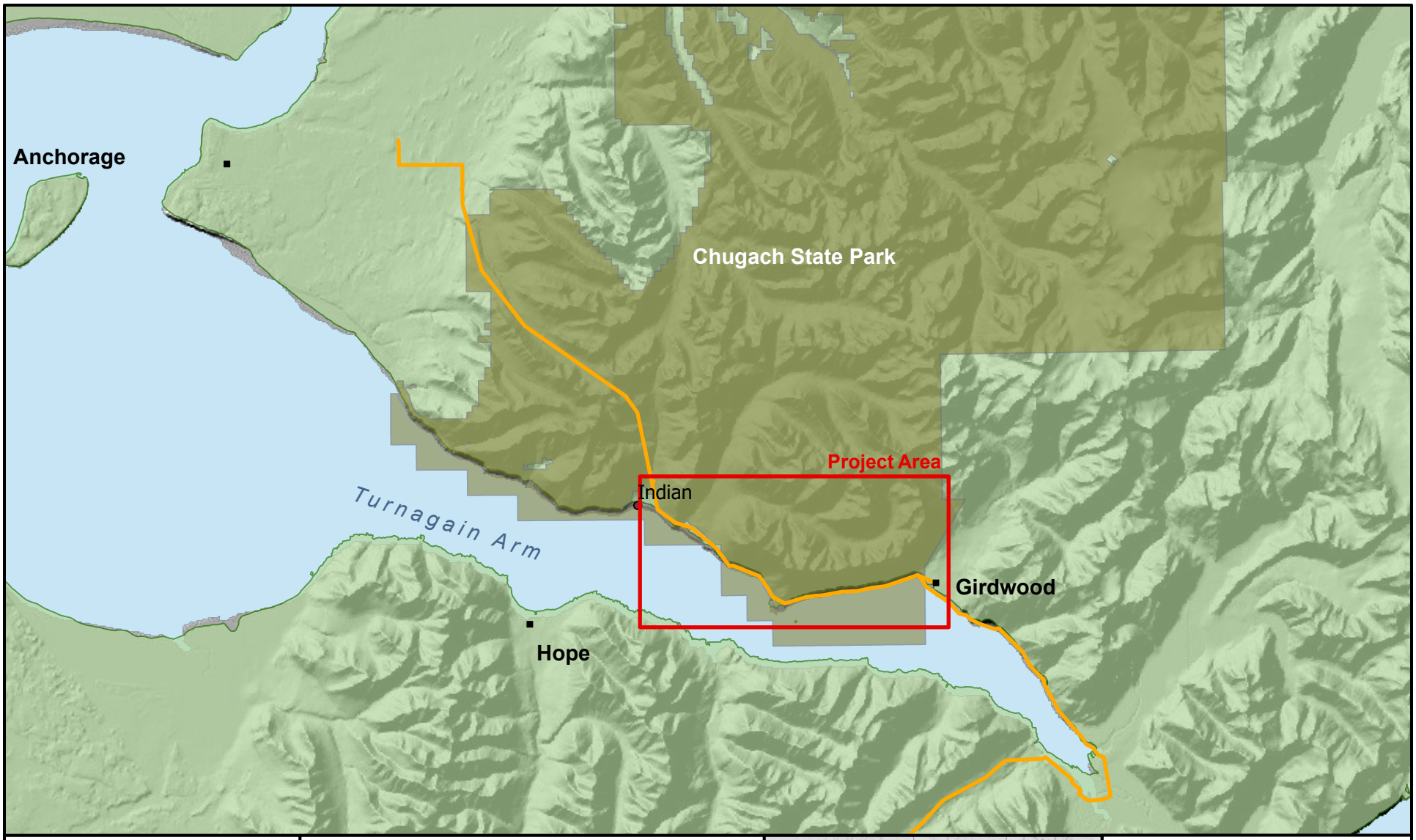
AUTHORITY: This permit will be issued or denied under the following authorities:
(X) Perform work in or affecting navigable waters of the United States – Section 10 Rivers and Harbors Act 1899 (33 U.S.C. 403).

(X) Discharge dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). Therefore, our public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

Project drawings are enclosed with this public notice.

District Commander
U.S. Army, Corps

Enclosures



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Vicinity Map - SHEET 1 OF 27

DATE: December 2022

0 2 4 Miles

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

Quartz Creek Transmission Line

Chugach State Park

WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM

Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Project Overview- SHEET 2 OF 27

DATE: December 2022

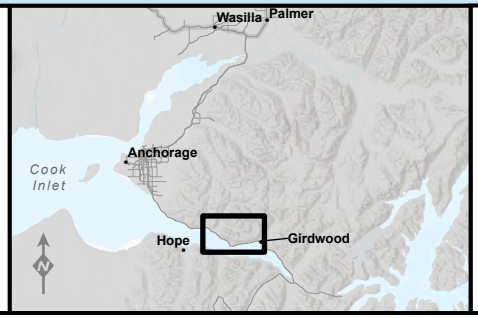
0 0.55 1.1 Miles

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Substation
- Seward Highway
- Quartz Creek Transmission Line

Project Element

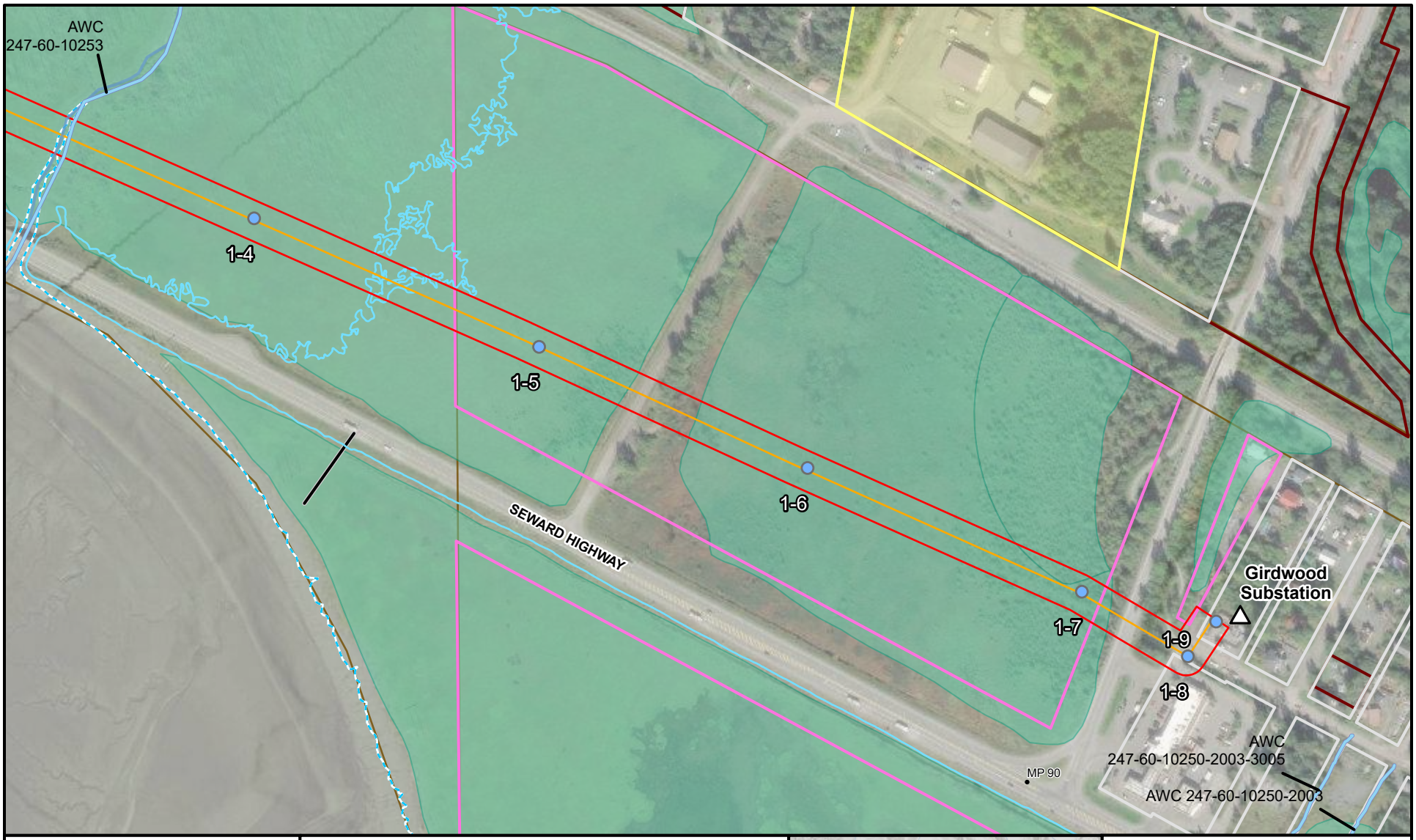
- Replace Existing Structure
- Install New Structure
- Retain Existing Utility Pole



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 3 OF 27

DATE: December 2022

0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream

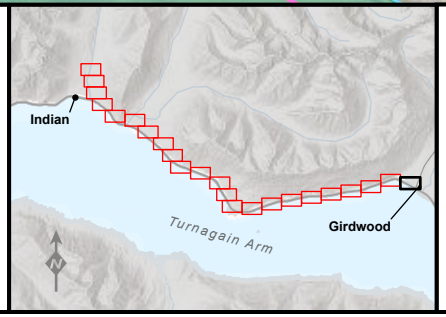
Project Element

- Replace Transmission Line
- Transmission Line ROW
- Platform Fill in WOTUS
- Replace Existing Structure
- Substation

- Anadromous Waters Catalog Stream (2022)
- Wetland
- ARRC ROW
- Existing Access

Land Ownership

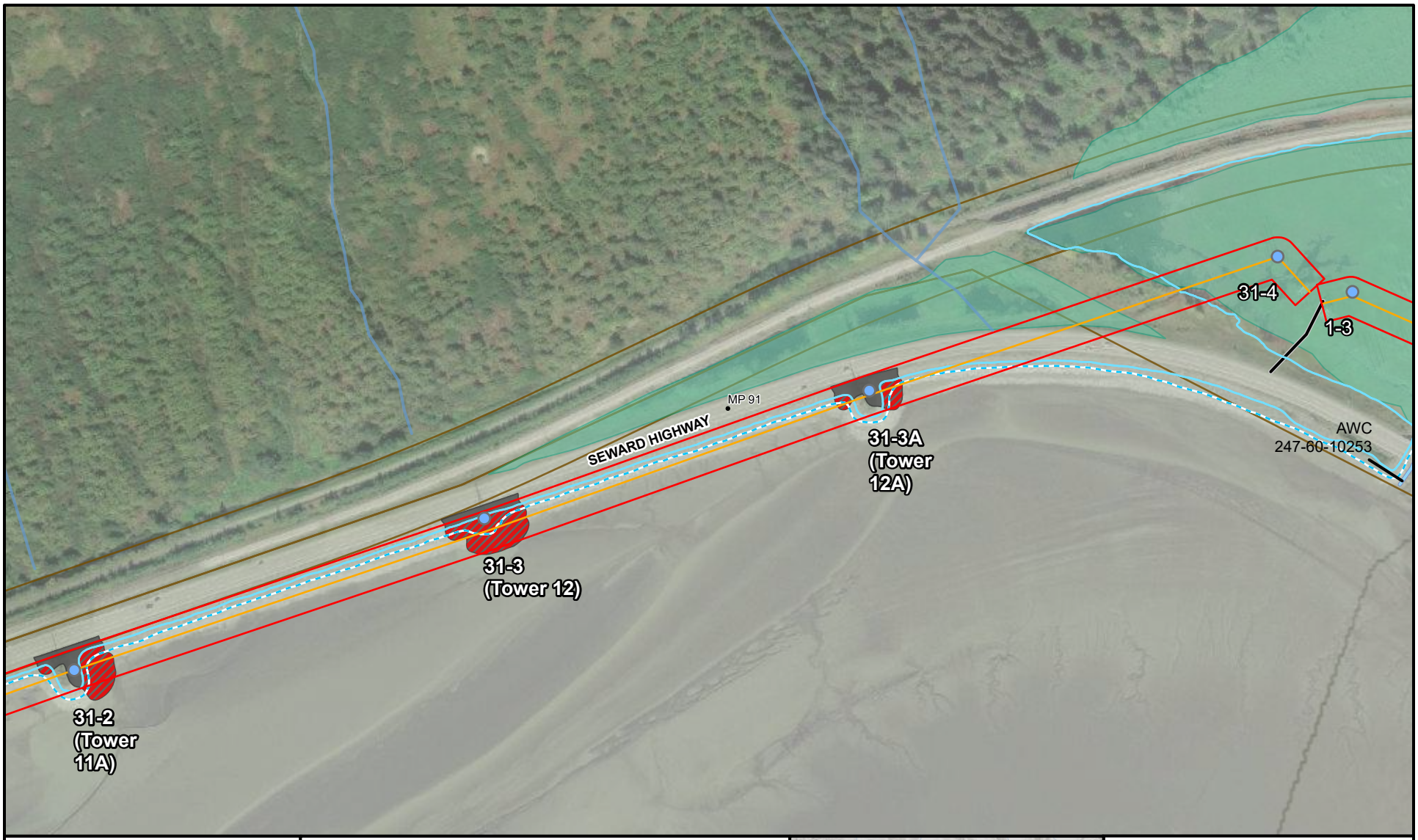
- MOA
- Mental Health Trust Land
- Private
- State



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 4 OF 27

DATE: December 2022

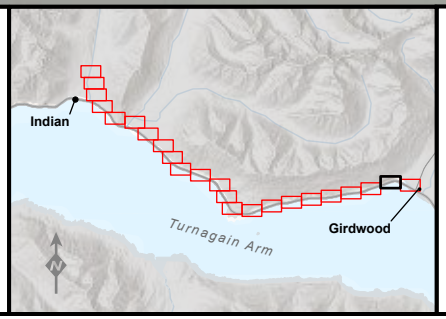
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream

Project Element

- Replace Transmission Line
- Transmission Line ROW
- Crane Access Platform
- Platform Fill in WOTUS
- Replace Existing Structure
- Anadromous Waters Catalog Stream (2022)
- Wetland
- ARRC ROW
- Existing Access



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
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SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM

Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 5 OF 27

DATE: December 2022

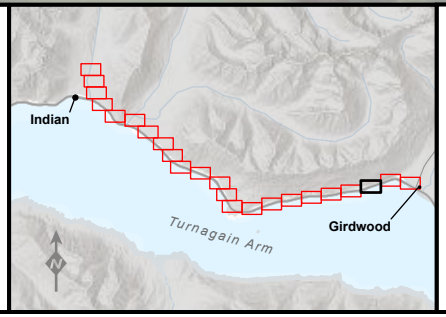
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream
- Wetland
- ARRC ROW

Project Element

- Replace Transmission Line
- Transmission Line ROW
- Crane Access Platform
- Platform Fill in WOTUS
- Replace Existing Structure



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
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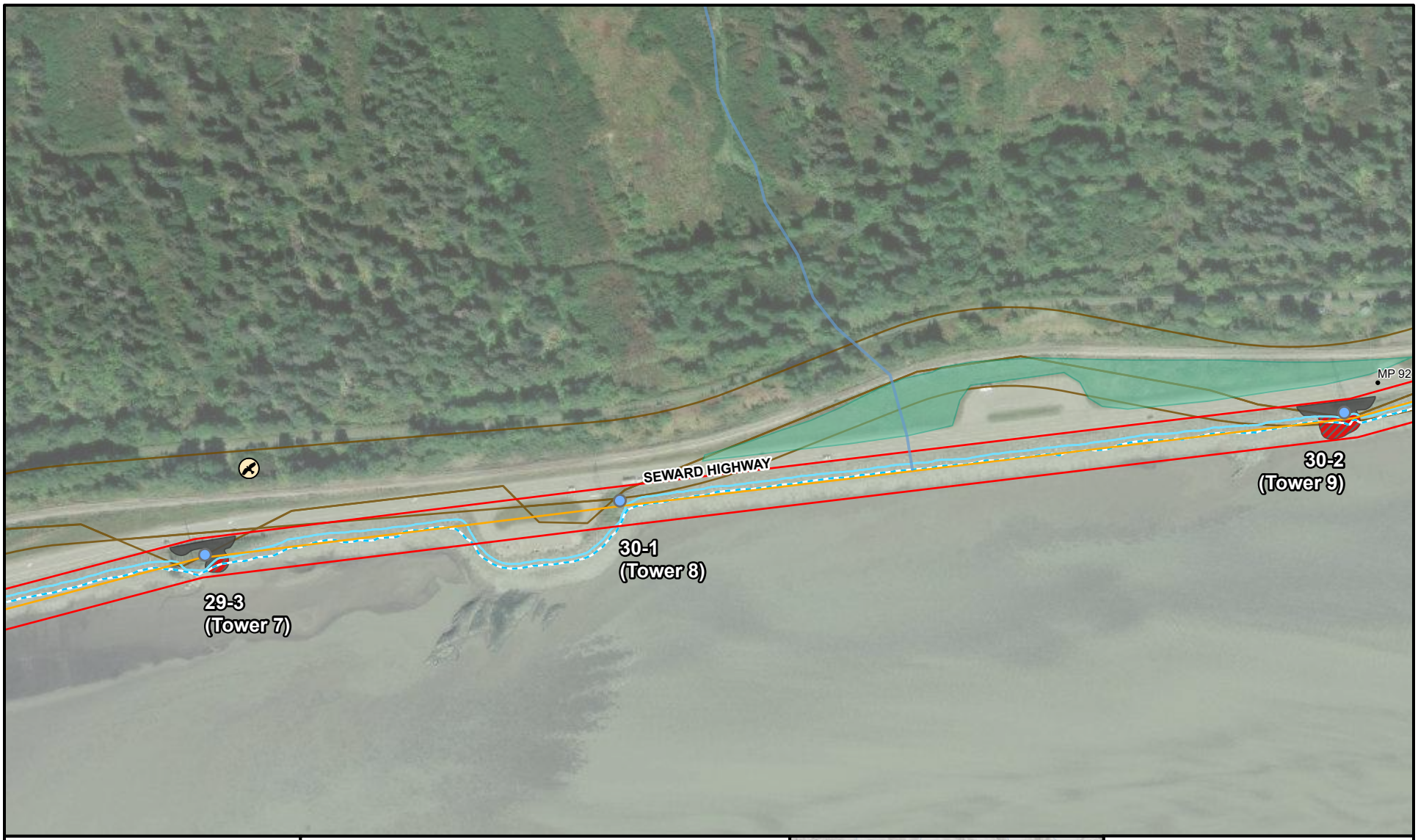
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 6 OF 27

DATE: December 2022

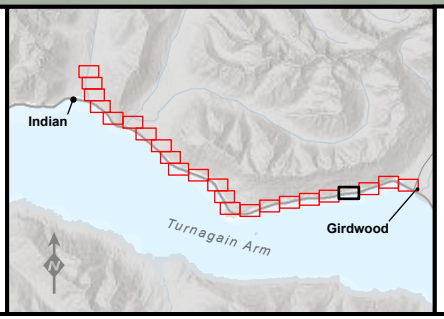
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream

Project Element

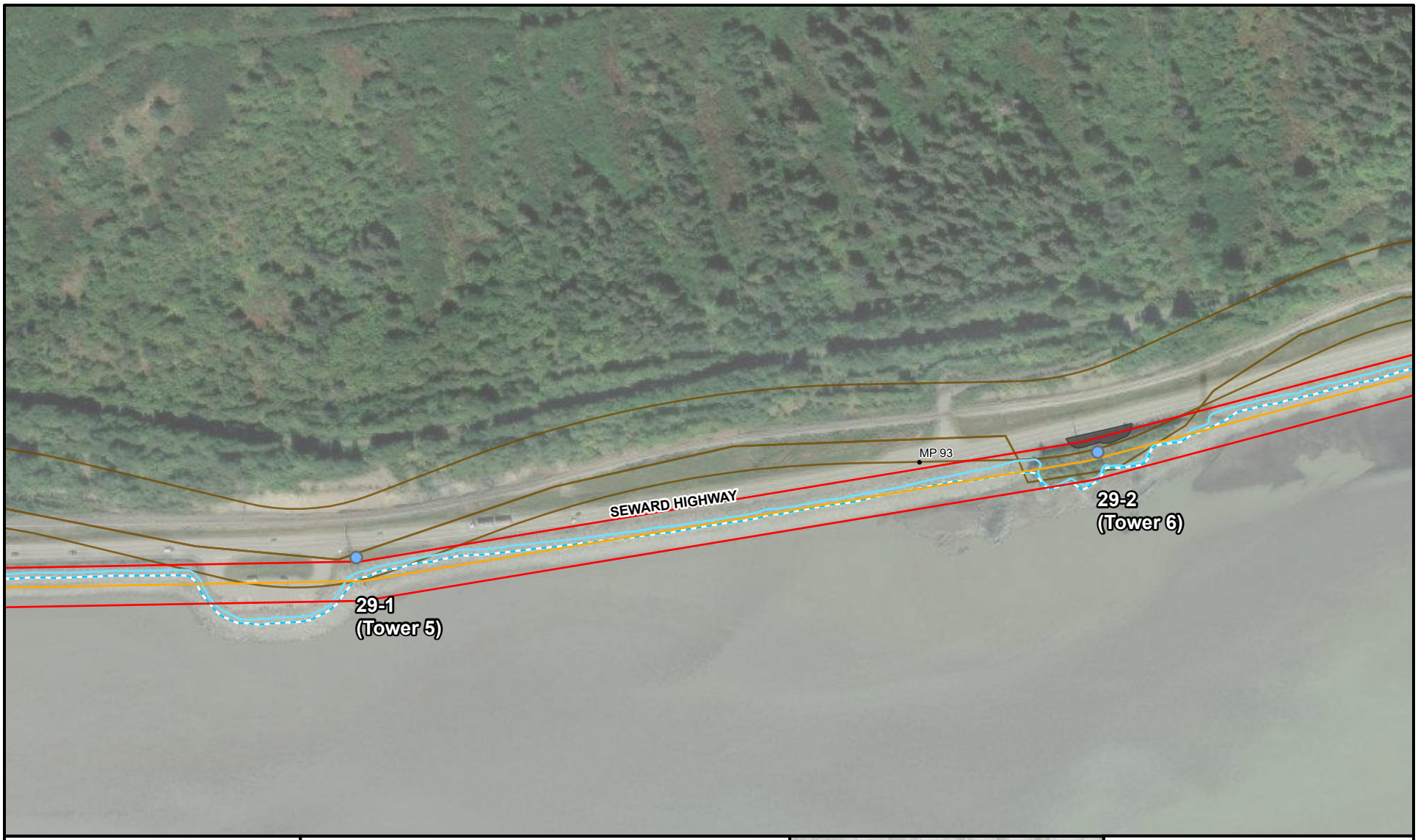
- Replace Transmission Line
- Transmission Line ROW
- Crane Access Platform
- Platform Fill in WOTUS
- Replace Existing Structure
- Wetland
- ARRC ROW
- Known Eagle Nest



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 7 OF 27

DATE: December 2022

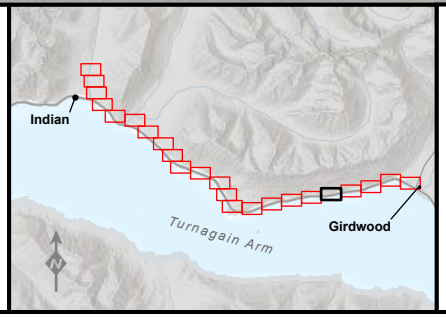
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

Mean High Water (17.8 ft)
High Tide Line (24.9 ft)
ARRC ROW

Project Element

Replace Transmission Line
Transmission Line ROW
Crane Access Platform
Platform Fill in WOTUS
Replace Existing Structure



WATERWAY: Cook Inlet, Turnagain Arm

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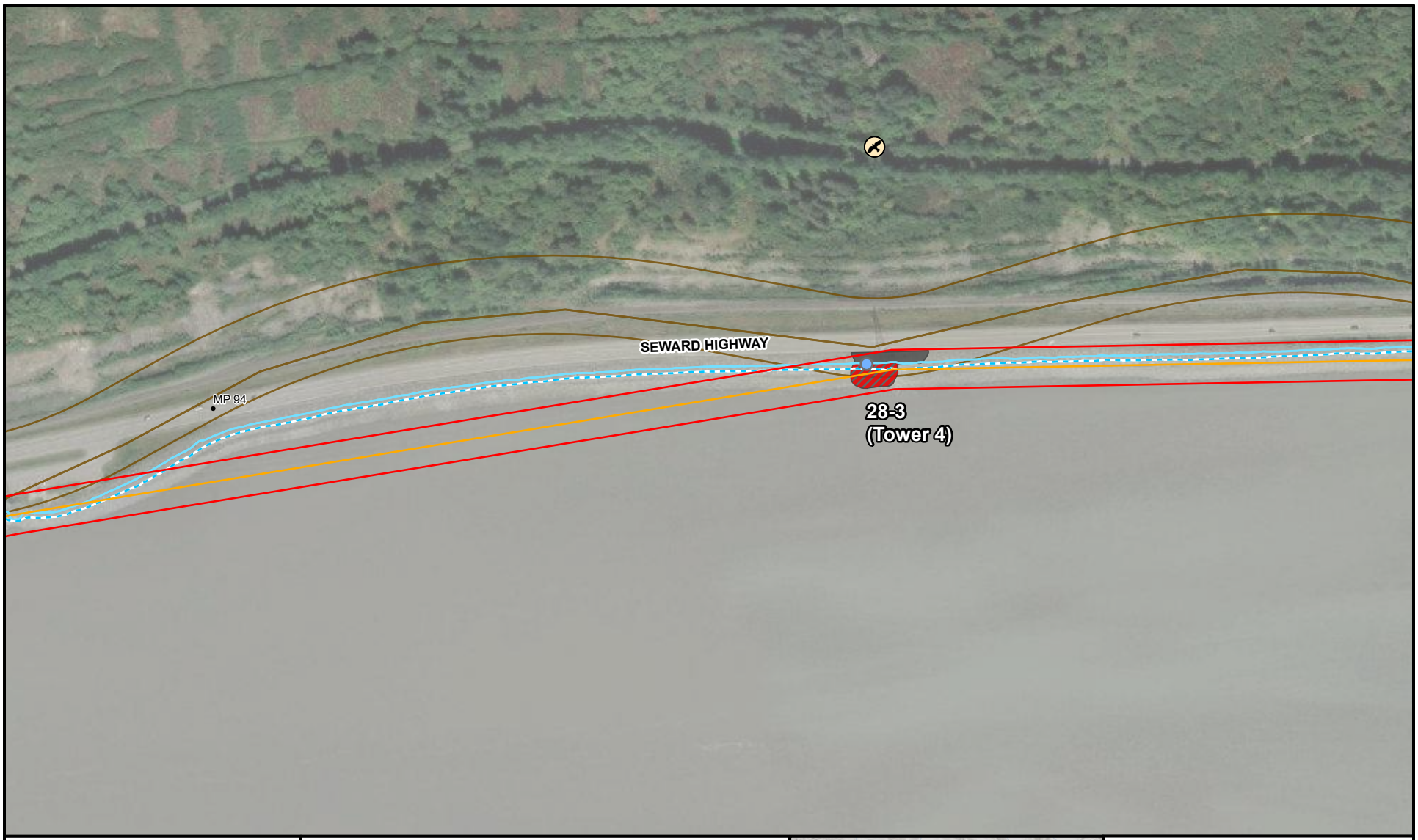
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 8 OF 27

DATE: December 2022

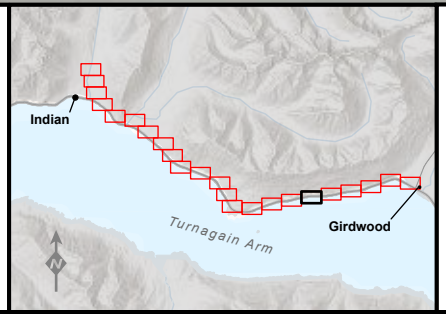
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)

Project Element

- Replace Transmission Line
- Transmission Line ROW
- Crane Access Platform
- Platform Fill in WOTUS
- Replace Existing Structure
- ARRC ROW
- Known Eagle Nest



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SEC 19, T10N, R2E, SM
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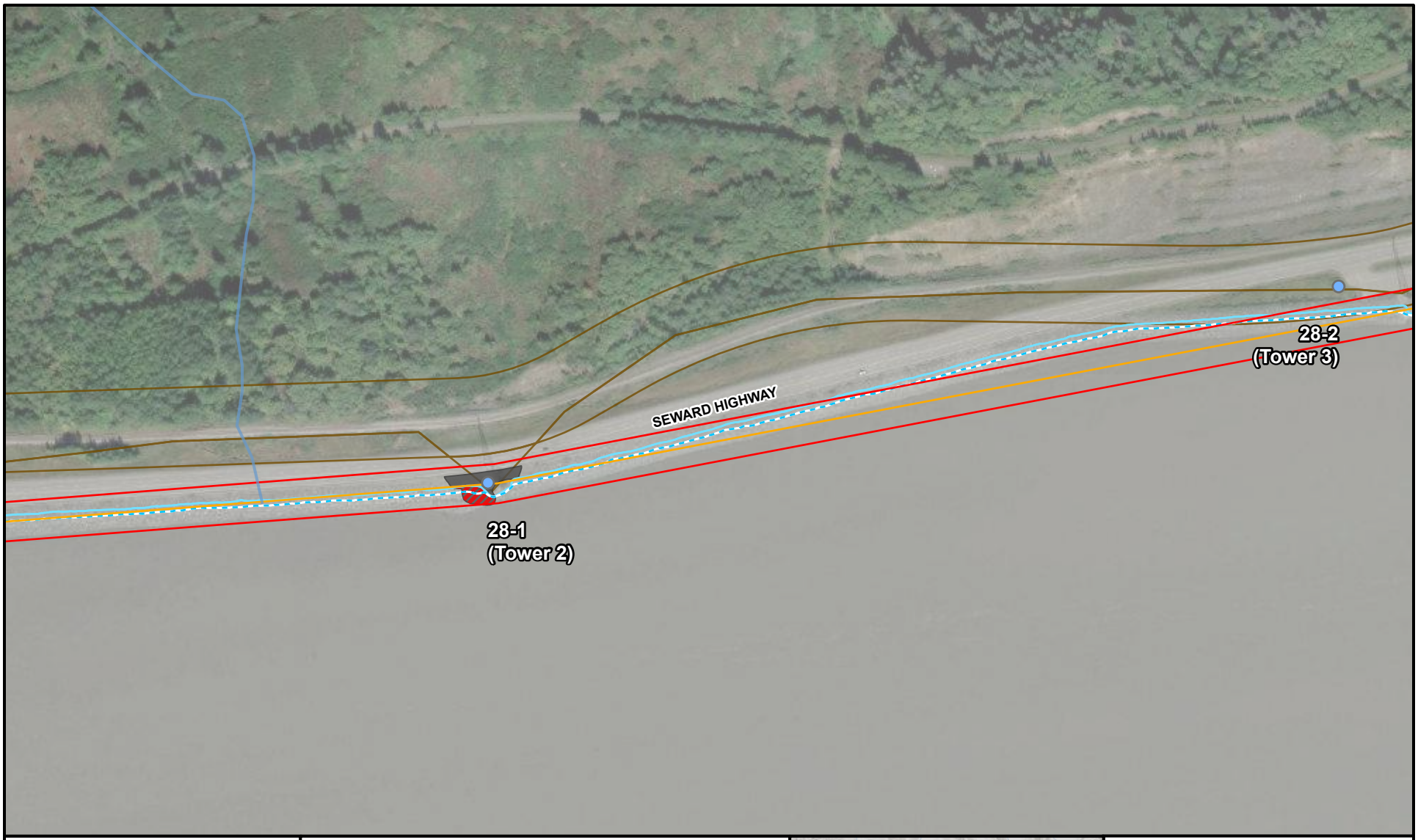
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 9 OF 27

DATE: December 2022

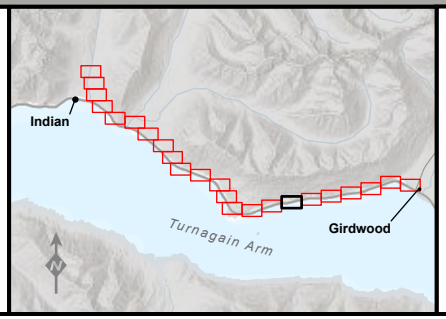
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream
- ARRC ROW

Project Element

- Replace Transmission Line
- Transmission Line ROW
- Crane Access Platform
- Platform Fill in WOTUS
- Replace Existing Structure



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
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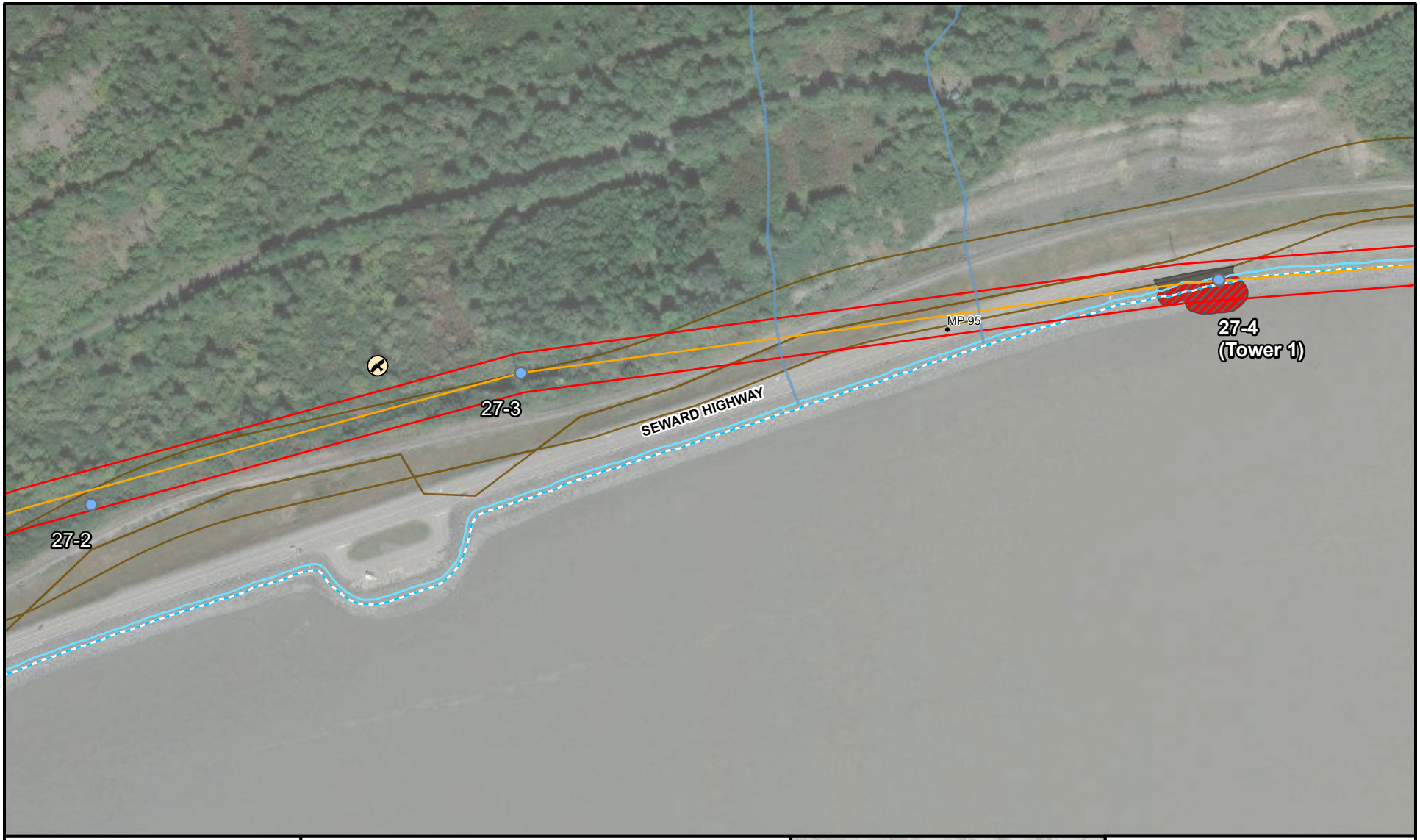
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 10 OF 27

DATE: December 2022

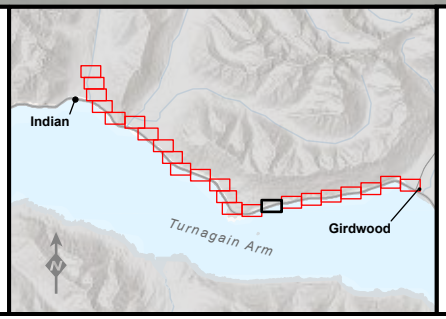
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream

Project Element

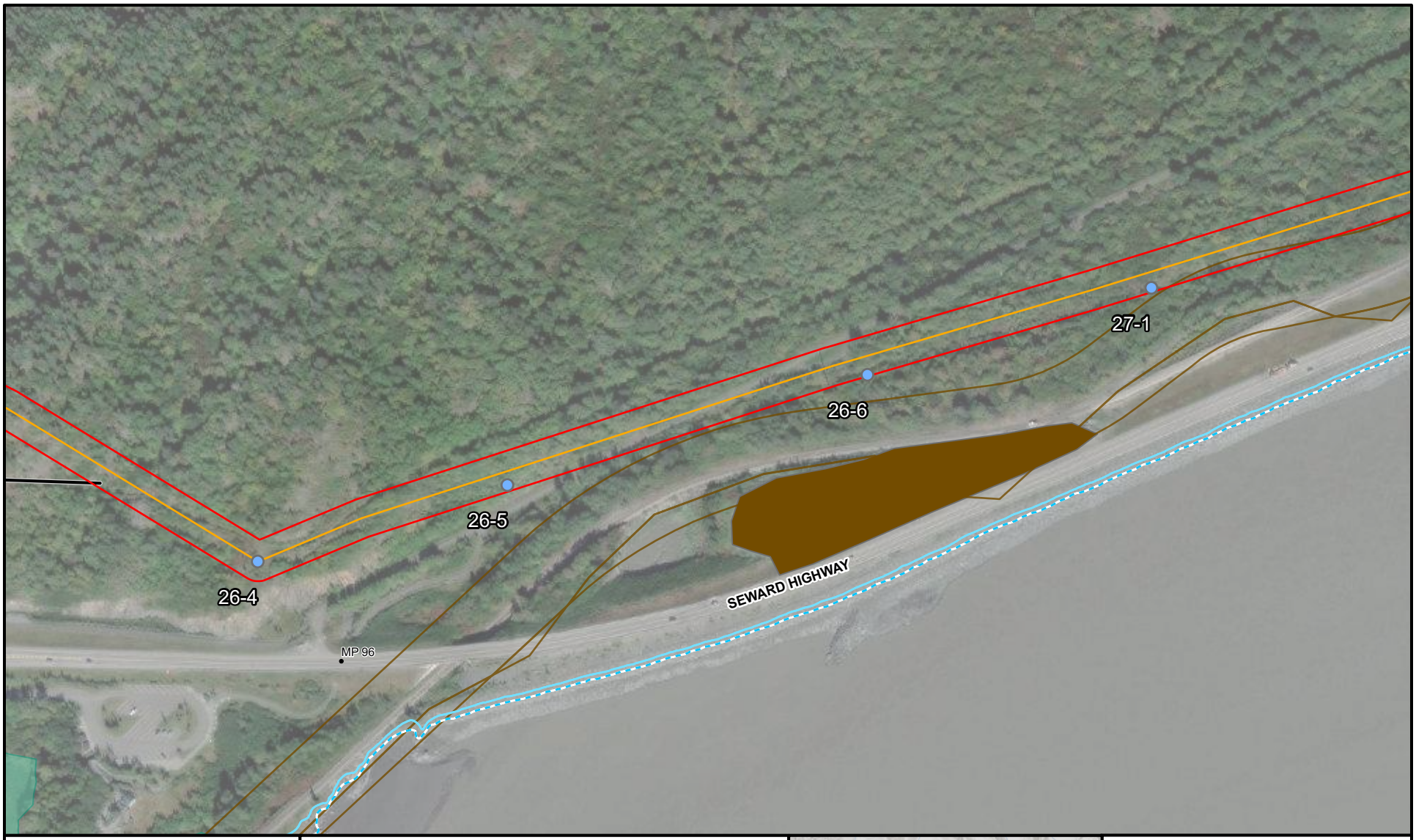
- Replace Transmission Line
- Transmission Line ROW
- Crane Access Platform
- Platform Fill in WOTUS
- Replace Existing Structure
- ARRC ROW
- Known Eagle Nest



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 11 OF 27

DATE: December 2022

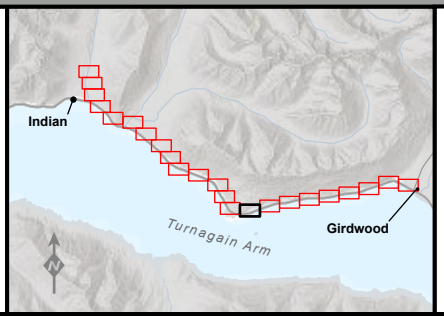
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)

Project Element

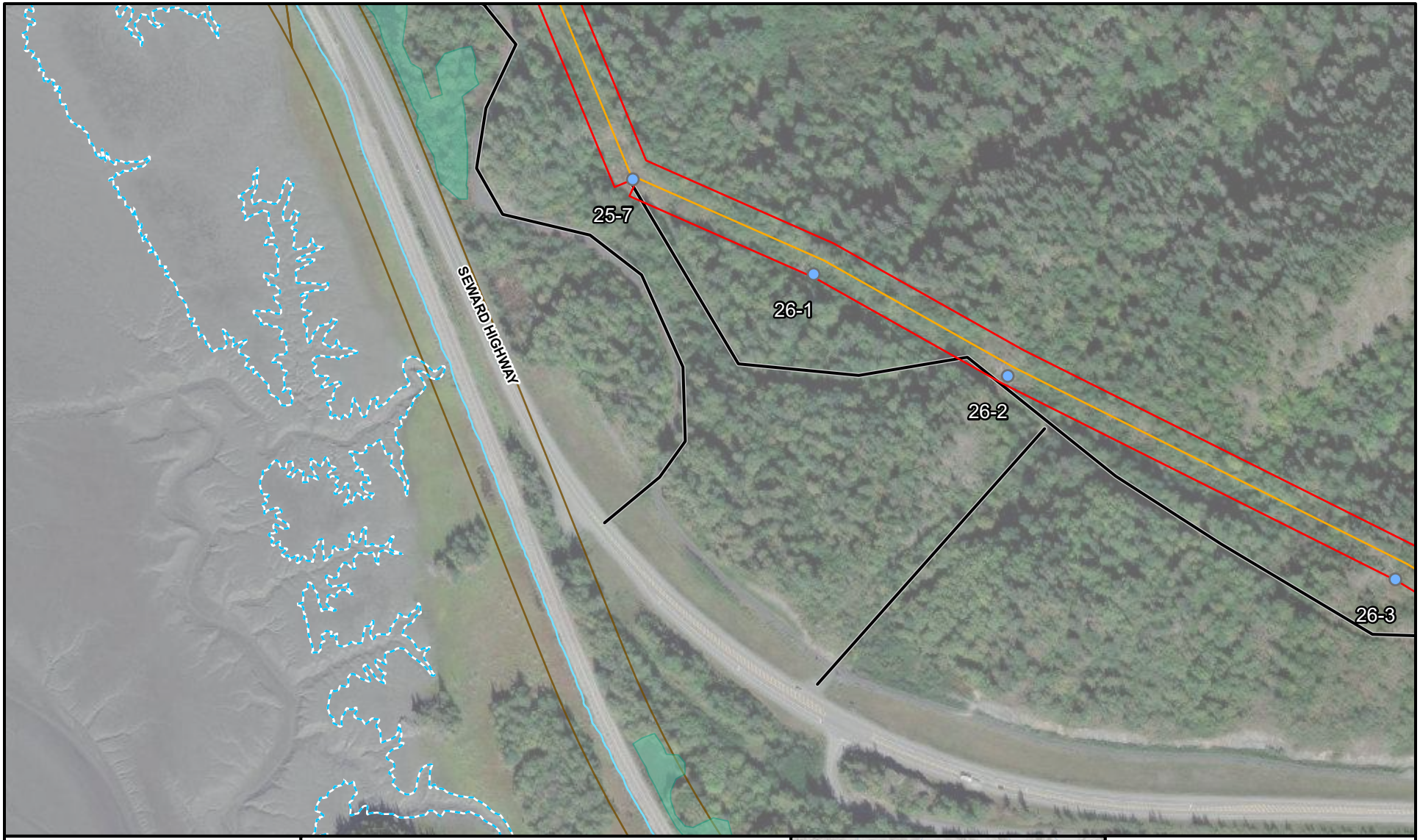
- Replace Transmission Line
- Transmission Line ROW
- Platform Fill in WOTUS
- Replace Existing Structure
- Proposed Material Storage Area
- Wetland
- ARRC ROW
- Existing Access



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 12 OF 27

DATE: December 2022

0 150 300 Feet

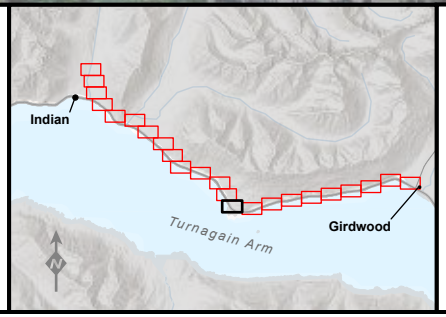
HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

Mean High Water (17.8 ft)
High Tide Line (24.9 ft)

Project Element

Replace Transmission Line
Transmission Line ROW
Platform Fill in WOTUS
Replace Existing Structure

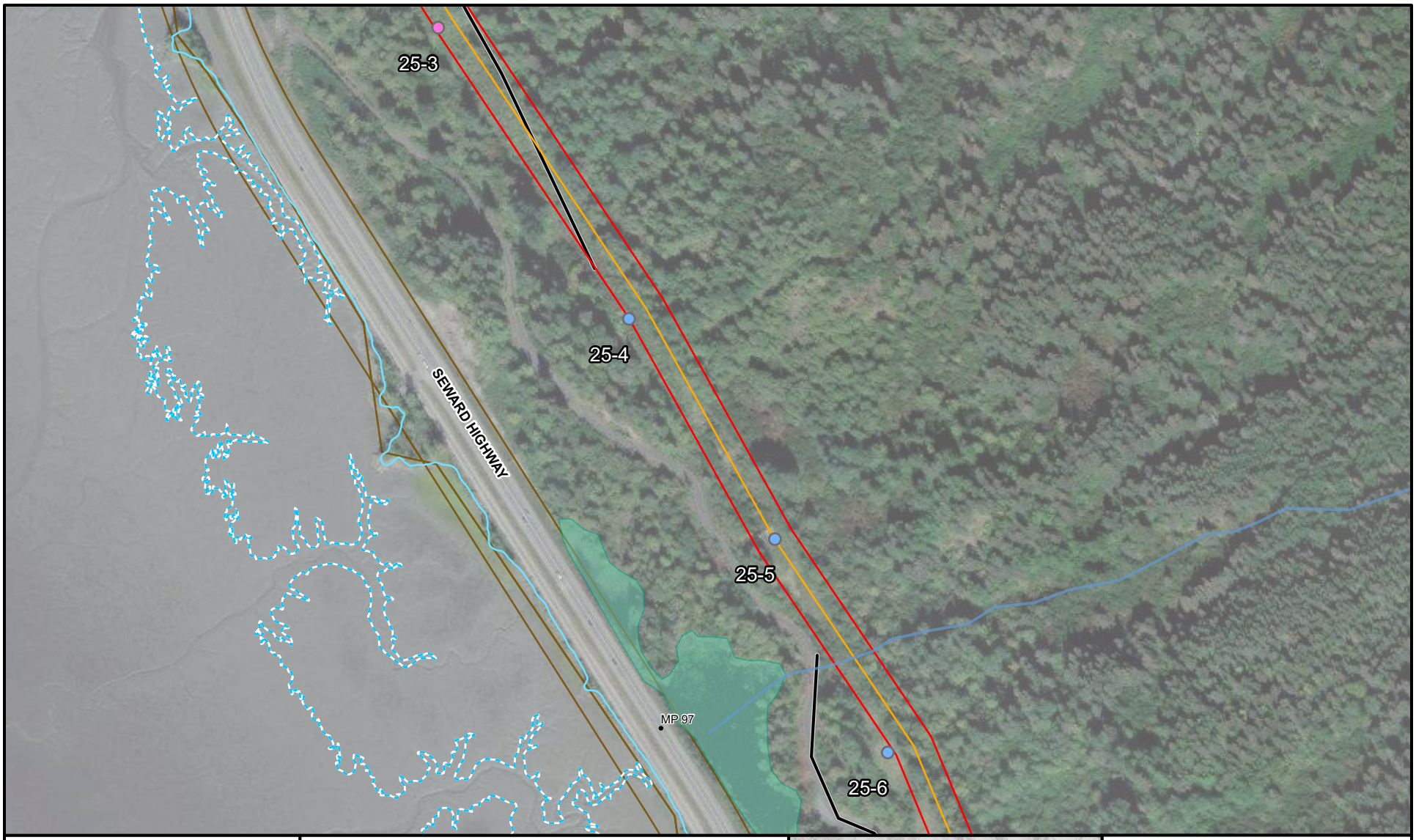
Wetland
ARRC ROW
Existing Access



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 13 OF 27

DATE: December 2022

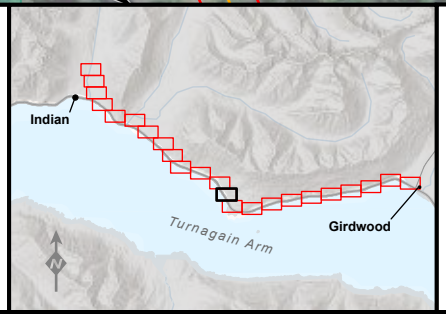
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream
- Wetland
- ARRC ROW
- Existing Access

Project Element

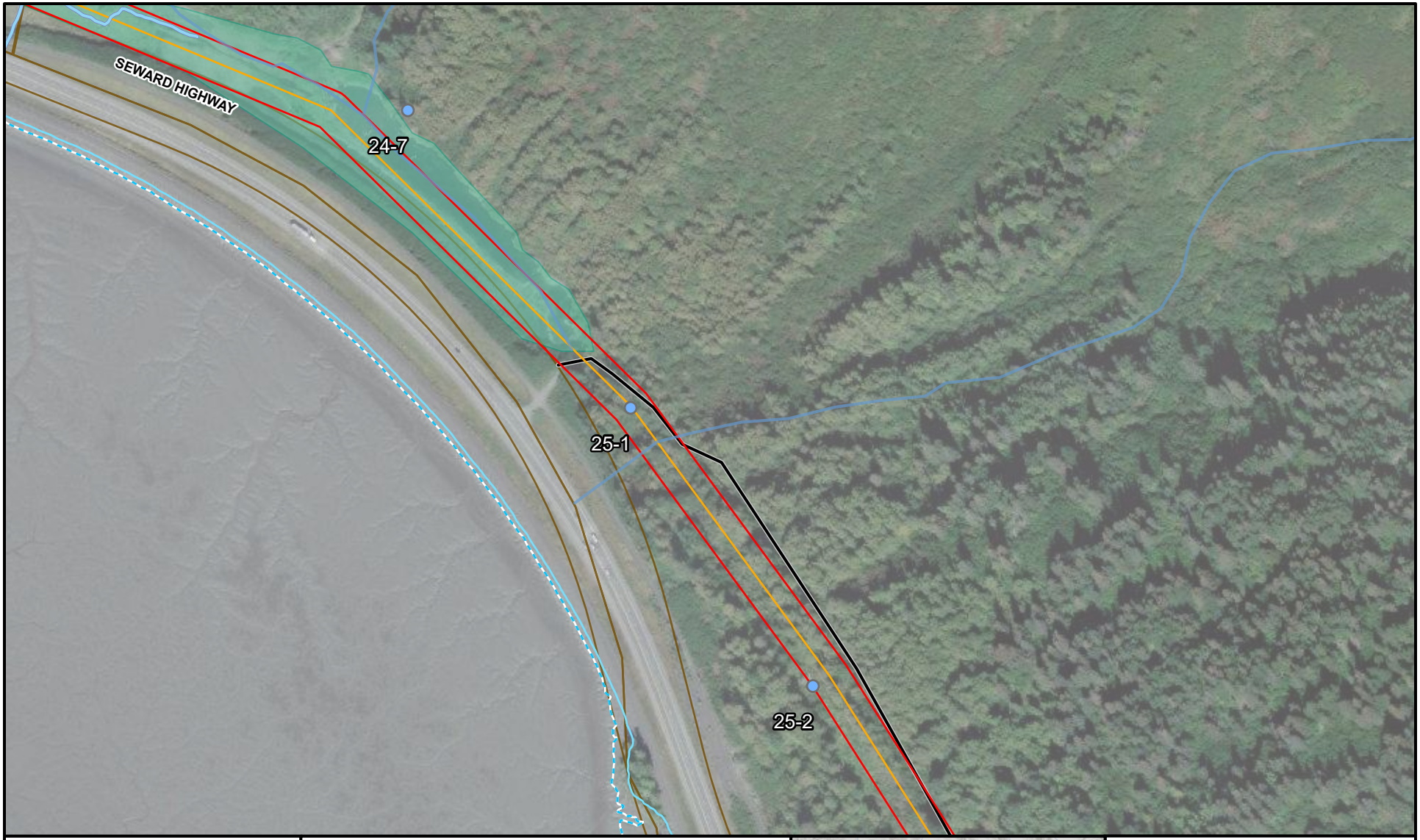
- Replace Transmission Line
- Transmission Line ROW
- Platform Fill in WOTUS
- Replace Existing Structure
- New Structure



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 14 OF 27

DATE: December 2022

0 150 300 Feet

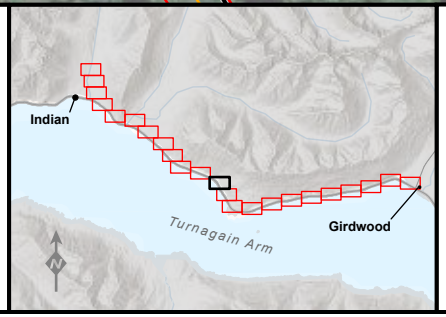
HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream

Project Element

- Replace Transmission Line
- Transmission Line ROW
- Platform Fill in WOTUS
- Replace Existing Structure

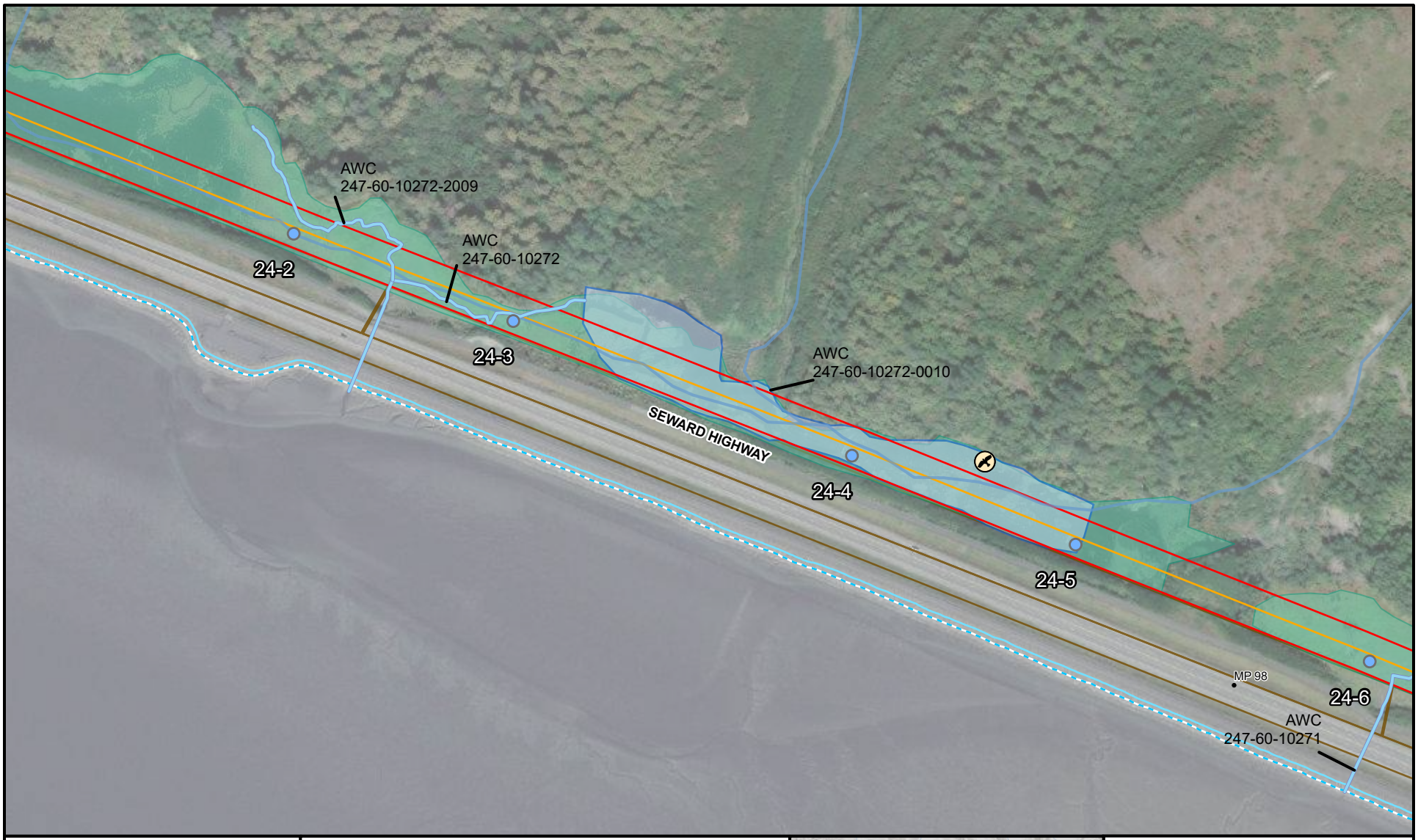
- Anadromous Waters Catalog Stream (2022)
- Wetland
- ARRC ROW
- Existing Access



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 15 OF 27

DATE: December 2022

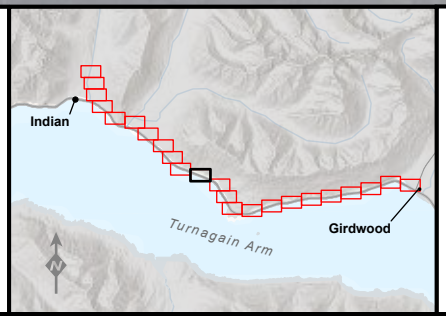
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream

Project Element

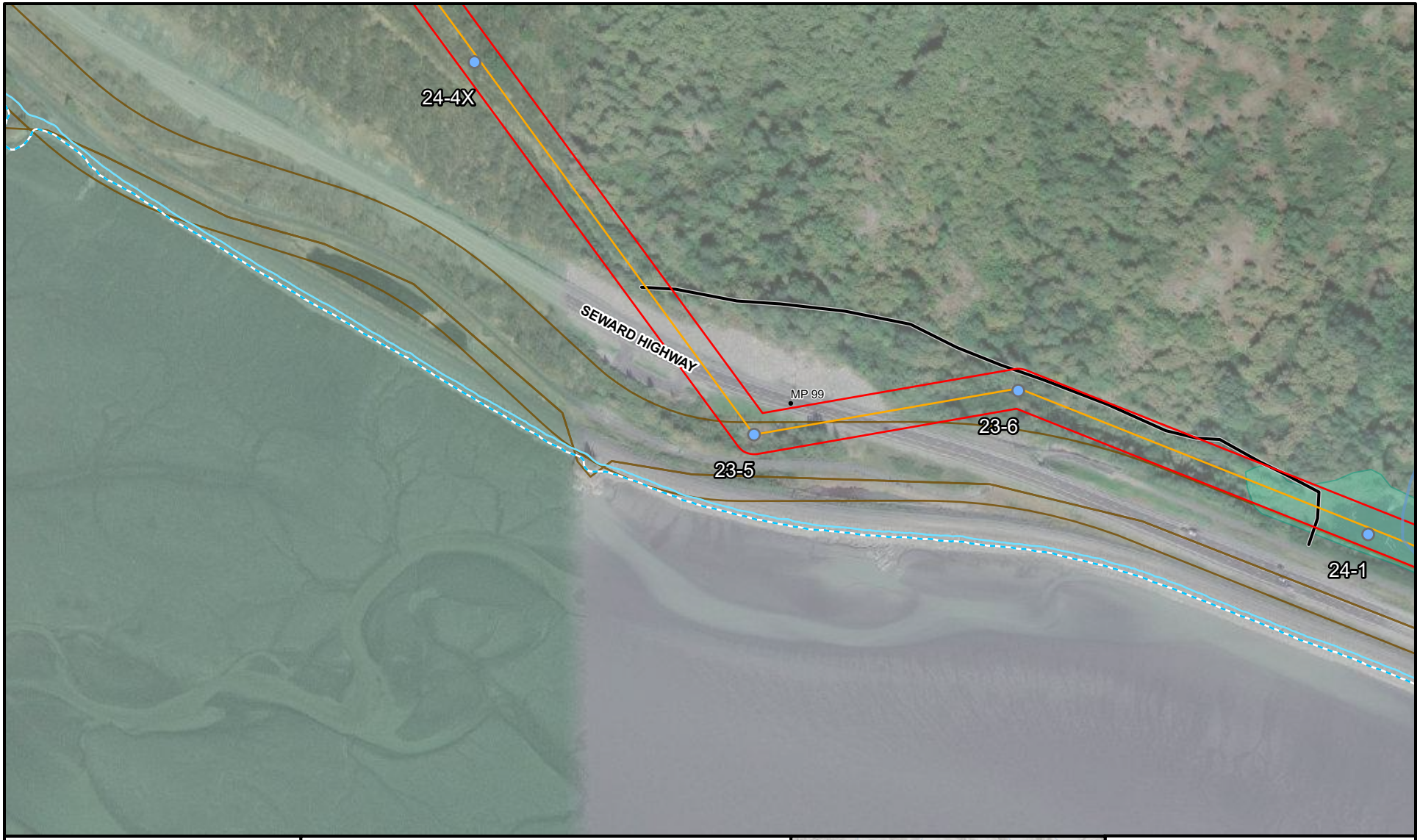
- Replace Transmission Line
- Transmission Line ROW
- Platform Fill in WOTUS
- Replace Existing Structure
- Anadromous_Lakes
- Anadromous Waters Catalog Stream (2022)
- Wetland
- ARRC ROW
- Known Eagle Nest



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 16 OF 27

DATE: December 2022

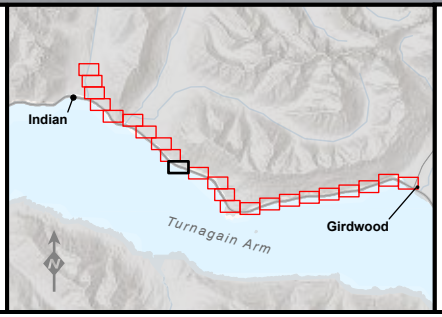
0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream
- Wetland
- ARRC ROW
- Existing Access

Project Element

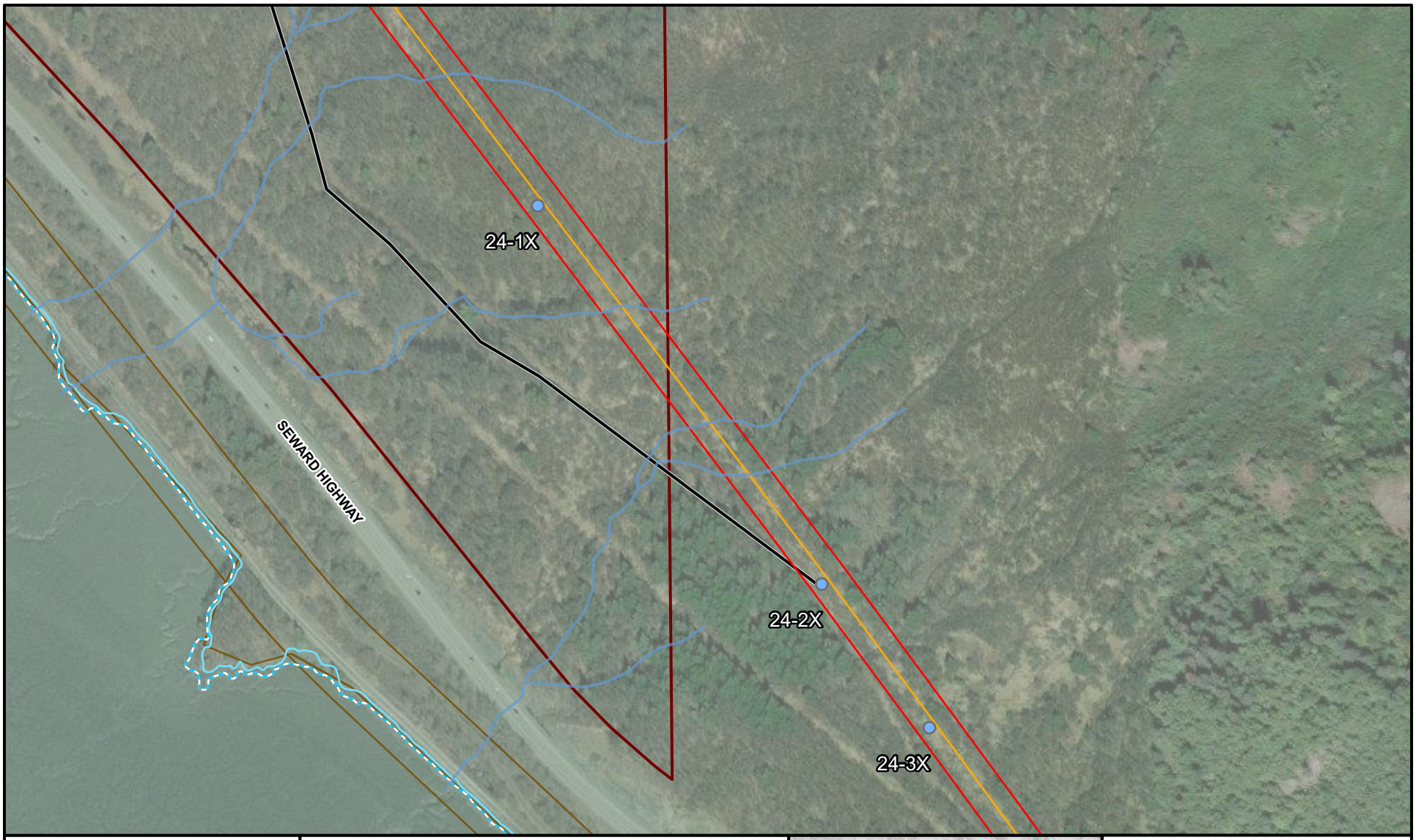
- Replace Transmission Line
- Transmission Line ROW
- Platform Fill in WOTUS
- Replace Existing Structure



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 17 OF 27

DATE: December 2022

0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

Mean High Water (17.8 ft)
High Tide Line (24.9 ft)
Stream

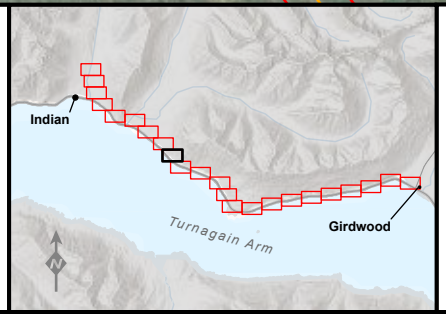
Project Element

Replace Transmission Line
Transmission Line ROW
Platform Fill in WOTUS
Replace Existing Structure

ARRC ROW
Existing Access

Land Ownership

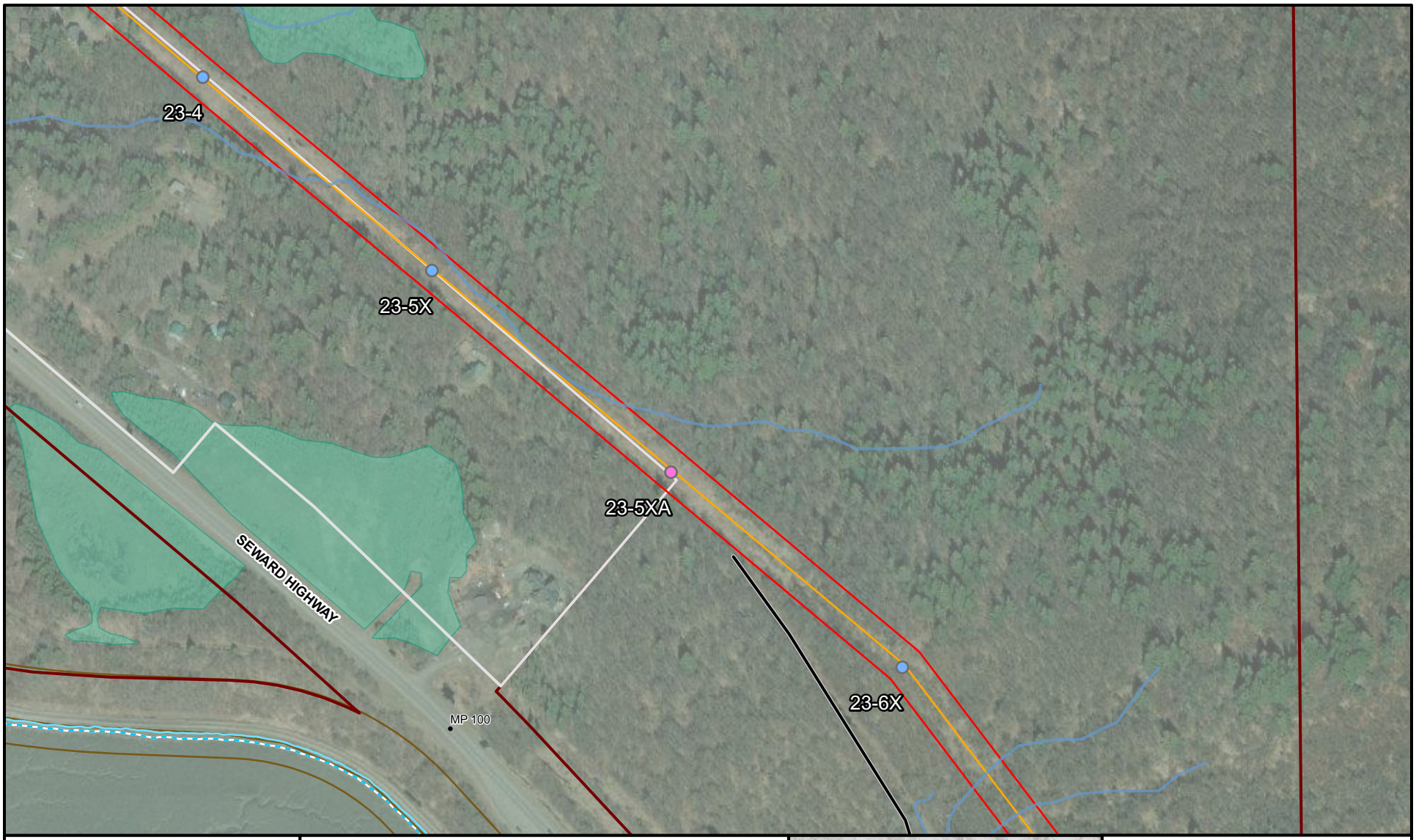
MOA



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 18 OF 27

DATE: December 2022

0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream

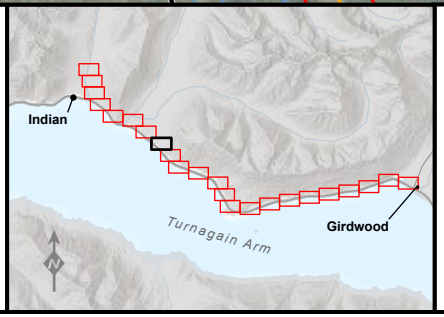
Project Element

- Replace Transmission Line
- Transmission Line ROW
- Platform Fill in WOTUS
- Replace Existing Structure
- New Structure

- Wetland
- ARRC ROW
- Existing Access

Land Ownership

- MOA
- Private



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM

Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 19 OF 27

DATE: December 2022

0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream

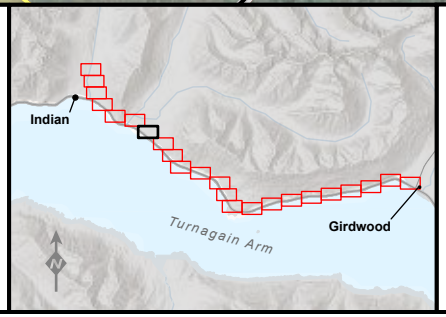
Project Element

- Replace Transmission Line
- Transmission Line ROW
- Platform Fill in WOTUS
- Replace Existing Structure

- Wetland
- ARRC ROW
- Existing Access

Land Ownership

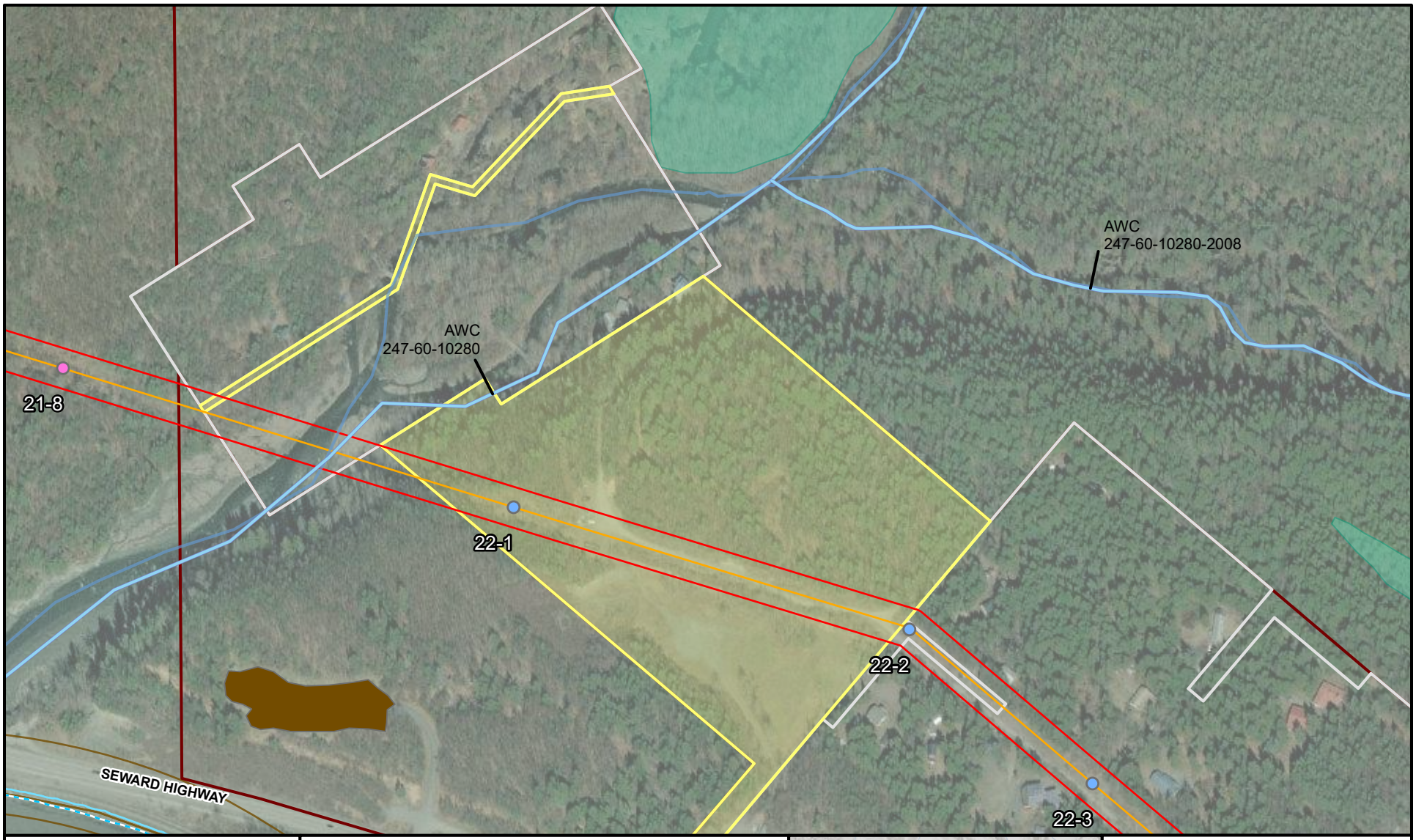
- MOA
- Private
- State



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 20 OF 27

DATE: December 2022

0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

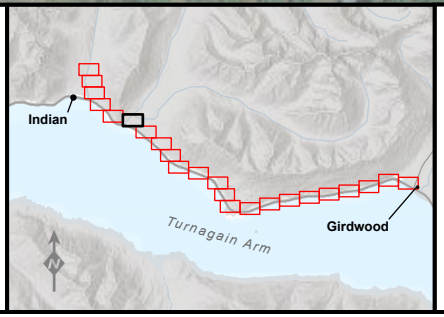
- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)
- Stream

Project Element

- Replace Transmission Line
- Transmission Line ROW
- Platform Fill in WOTUS
- Replace Existing Structure
- New Structure
- Proposed Material Storage Area
- Anadromous Waters Catalog Stream (2022)
- Wetland
- ARRC ROW

Land Ownership

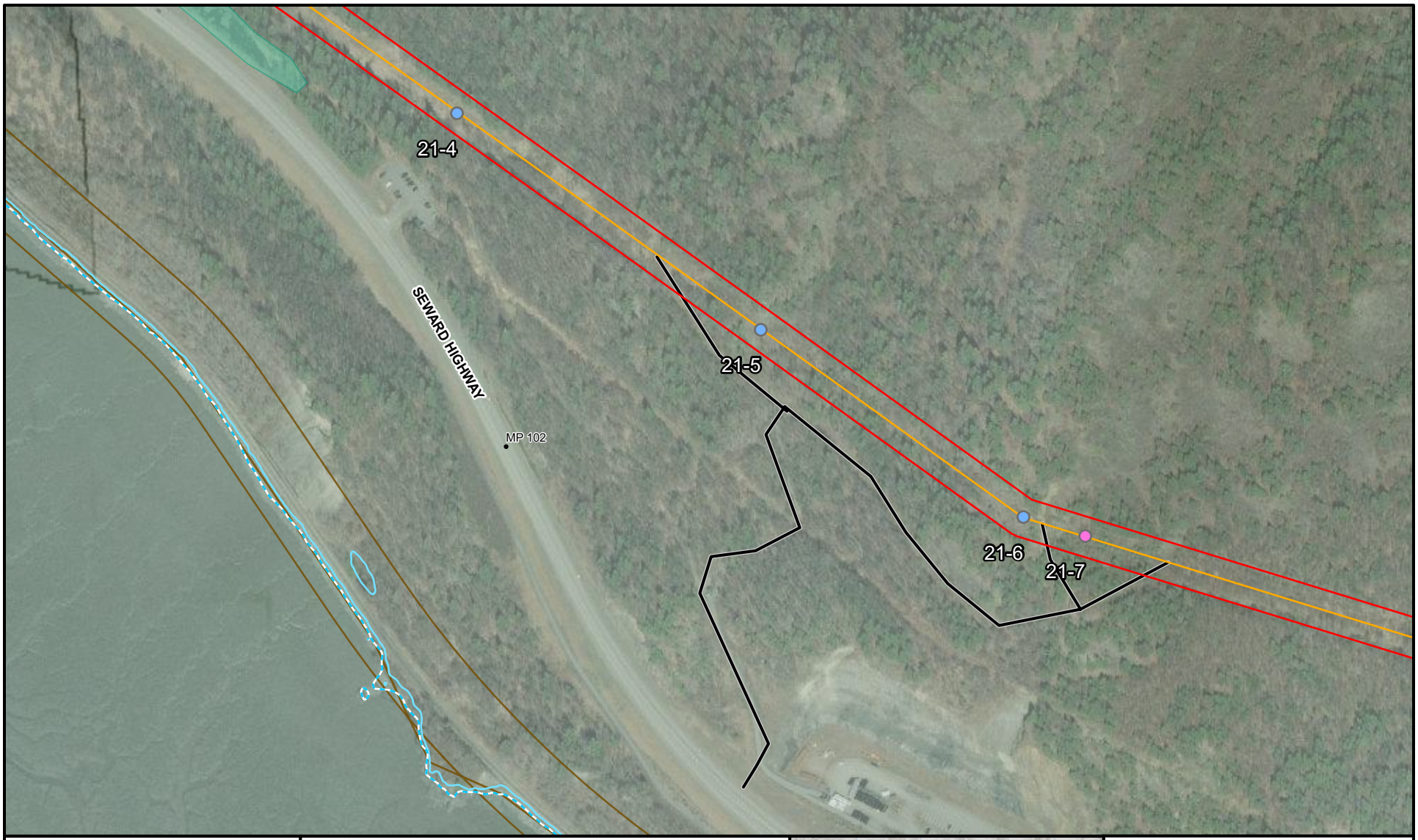
- MOA
- Private
- State



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 21 OF 27

DATE: December 2022

0 150 300 Feet

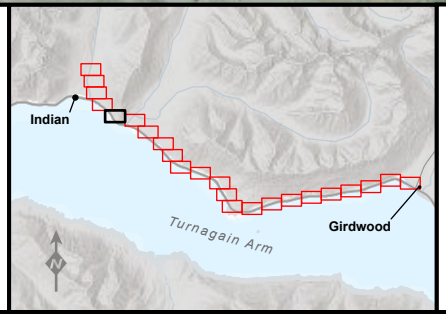
HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

Mean High Water (17.8 ft)
High Tide Line (24.9 ft)

Project Element

Replace Transmission Line
Transmission Line ROW
Platform Fill in WOTUS
Replace Existing Structure
New Structure

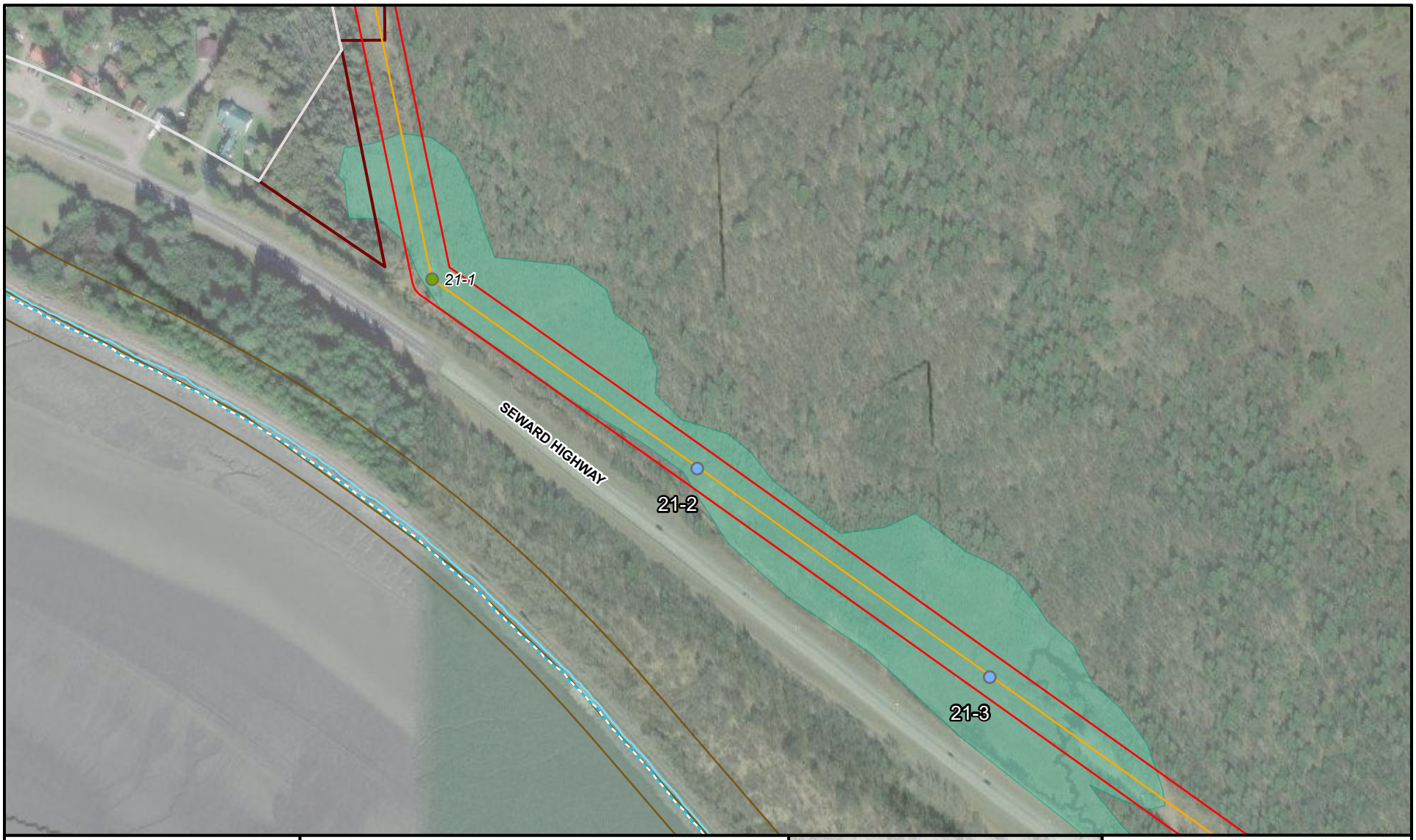
Wetland
ARRC ROW
Existing Access



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 22 OF 27

DATE: December 2022

0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

- Mean High Water (17.8 ft)
- High Tide Line (24.9 ft)

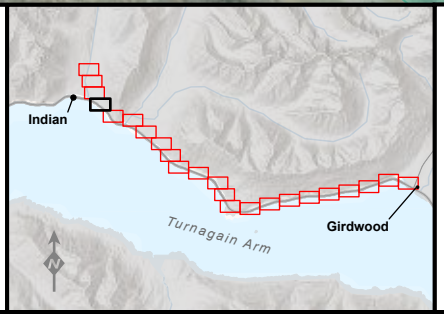
Project Element

- Replace Transmission Line
- Transmission Line ROW
- Platform Fill in WOTUS
- Replace Existing Structure
- Existing Utility Pole To Remain

- Wetland
- ARRC ROW

Land Ownership

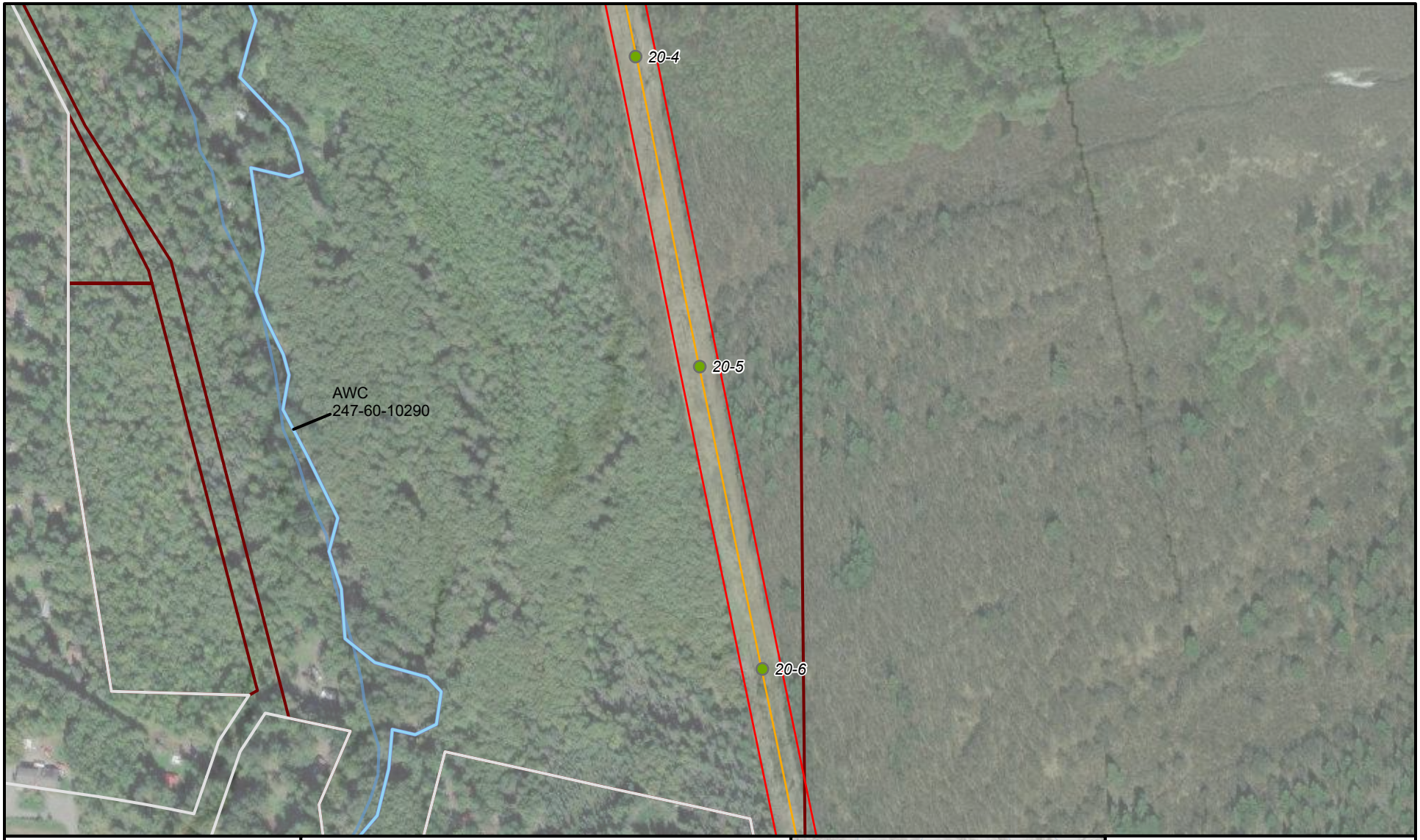
- MOA
- Private



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 23 OF 27

DATE: December 2022

0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

Stream

Project Element

Replace Transmission Line

Transmission Line ROW

Platform Fill in WOTUS

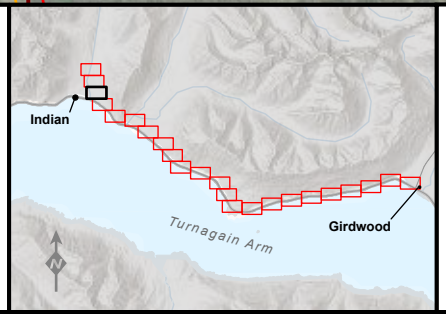
Existing Utility Pole To Remain

Anadromous Waters Catalog Stream (2022)

Land Ownership

MOA

Private



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM

Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 24 OF 27

DATE: December 2022

0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

Stream

Project Element

Replace Transmission Line

Transmission Line ROW

Platform Fill in WOTUS

Existing Utility Pole To Remain

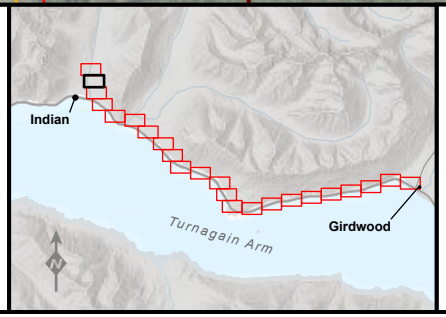
Anadromous Waters Catalog Stream (2022)

Existing Access

Land Ownership

MOA

Private



WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM

Chugach Electric Association
Girdwood to Indian Transmission Line Rebuild

Plan View - SHEET 25 OF 27

DATE: December 2022

0 150 300 Feet

HORIZONTAL DATUM:
NAD 83 AK State Plane Zone 4

Stream

Project Element

Replace Transmission Line

Transmission Line ROW

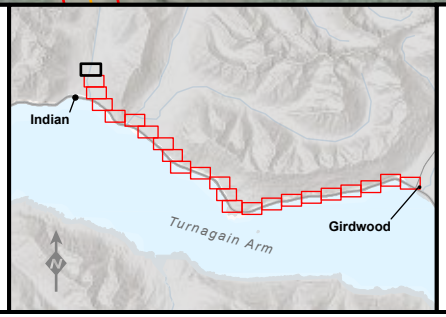
Platform Fill in WOTUS

Existing Utility Pole To Remain

Substation

Anadromous Waters Catalog Stream (2022)

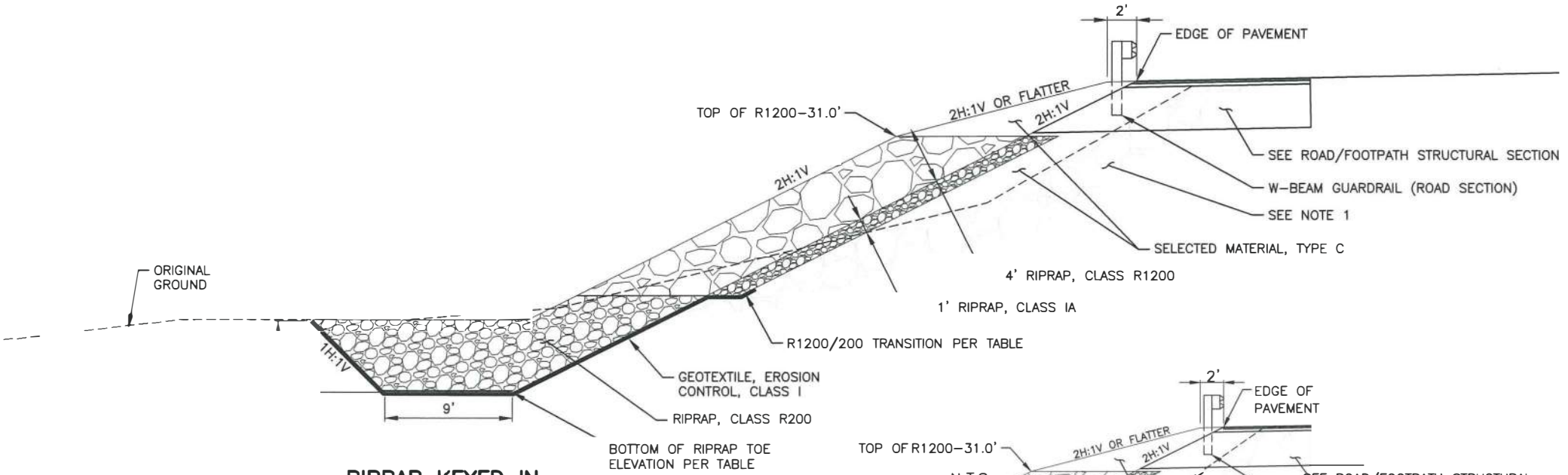
Existing Access



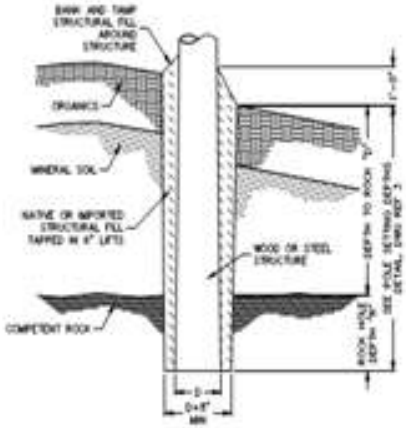
WATERWAY: Cook Inlet, Turnagain Arm

DA#: POA-2022-00526

LOCATION:
SEC 21-24, 29-30, T10N, R1E, SM
SEC 19, T10N, R2E, SM
SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM
SEC 32, T11N, R1W, SM



Chugach Electric Association Girdwood to Indian Transmission Line Rebuild Typical Cross Section GWIN Transmission Tower Groyn SHEET 26 OF 27 DATE: December 2022	NOTE: 1. EXCAVATE EXISTING RIPRAP AS UNCLASSIFIED EXCAVATION 2. TRANSITION RIPRAP SECTIONS WITHIN 100 FEET TO TIE BACK TO EXISTING GROUND	WATERWAY: Cook Inlet, Turnagain Arm DA#: POA-2022-00526 LOCATION: SEC 21-24, 29-30, T10N, R1E, SM SEC 19, T10N, R2E, SM SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM SEC 32, T11N, R1W, SM



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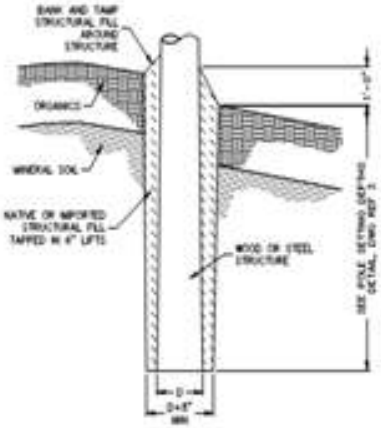
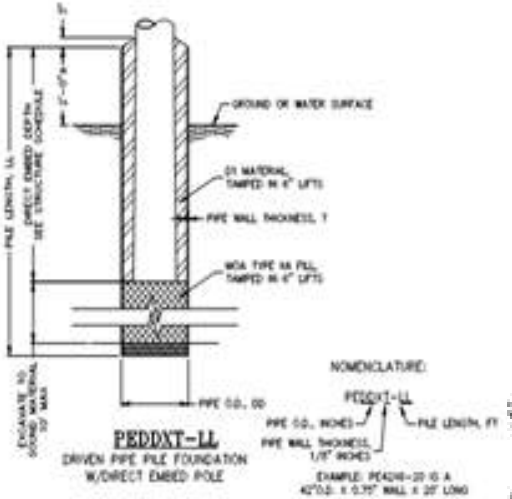
DIRECT EMBEDDED FOUNDATION IN ROCK



TM-101
DIRECT EMBEDDED FOUNDATION NO ROCK



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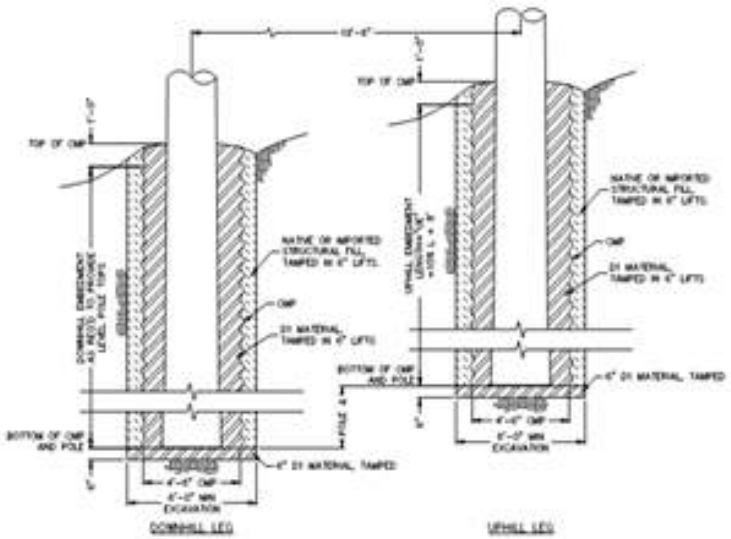
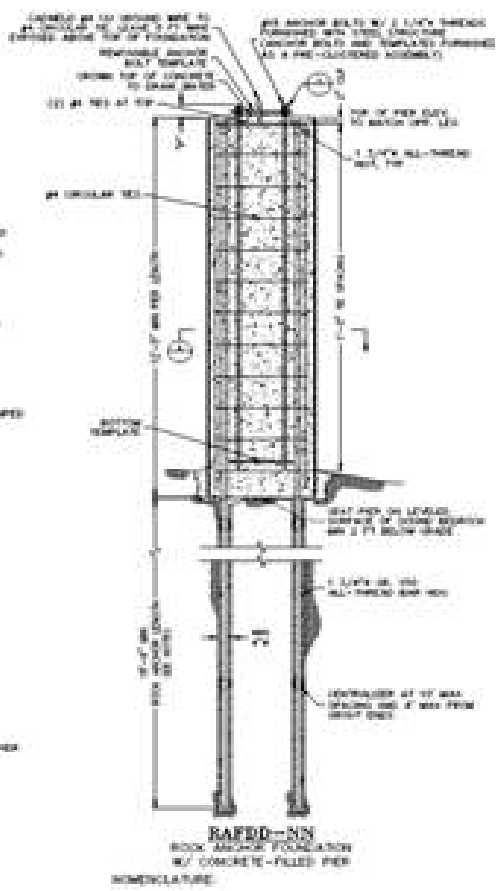
DRIVEN PIPE PILE FOUNDATION W/DIRECT EMBED POLE



TM-101CMP
FOUNDATION FOR TYPE HT1-AV AND HT1R-AV STRUCTURES



RAFDD-NN
ROCK ANCHOR FOUNDATION W/ CONCRETE-FILLED PIER

Chugach Electric Association Girdwood to Indian Transmission Line Rebuild Typical Cross Section - Transmission Line Structure Foundations SHEET 27 OF 27 DATE: December 2022		WATERWAY: Cook Inlet, Turnagain Arm DA#: POA-2022-00526 LOCATION: SEC 21-24, 29-30, T10N, R1E, SM SEC 19, T10N, R2E, SM SEC 5, 9-10, 14-15, 24-25, T10N, R1W, SM SEC 32, T11N, R1W, SM

Project Description
to Support Permit Applications

Girdwood to Indian Transmission Line Rebuild

Chugach Electric Association, Inc.
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December 8, 2022

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List of Tables

Attachment

Attachment A. Correspondence with the State Historic Preservation Office

List of Acronyms

ADF&G	Alaska Department of Fish and Game
ARRC	Alaska Railroad Corporation
AWC	Anadromous Waters Catalog
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
CFR	Code of Federal Regulations
DNR	Alaska Department of Natural Resources
DOT&PF	Alaska Department of Transportation and Public Facilities
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FMP	Fishery Management Plan
GWID	Girdwood substation to Indian substation
HTL	high tide line
IPaC	Information for Planning and Consultation
kV	kilovolt
MBTA	Migratory Bird Treaty Act
MHW	mean high water
MOA	Municipality of Anchorage
MP	Milepost
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
OHA	Office of History and Archaeology
OP	operating policy
ROW	right-of-way
ROW Plan	2008 Transmission Line Right-of-Way Corridor and Access Management and Maintenance Plan
SHPO	State of Alaska Historic Preservation Office
SOP	standard operating procedure
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service

1.0 Introduction

Chugach Electric Association, Inc. (Chugach) is reconstructing portions of the 90.4-mile-long Quartz Creek 115 kilovolt (kV) transmission line that runs between the Quartz Creek Substation near Kenai Lake and the substation in Anchorage, Alaska. The transmission line was constructed in 1962 and many of the structures need to be replaced.[1] Since 2004, Chugach has rebuilt nearly 40 miles of the Quartz Creek transmission line. As part of the reconstruction effort, Chugach proposes to begin rebuilding the segment between the Girdwood and Indian substations (**Figure 1**) beginning in early 2023.

The proposed Girdwood Substation to Indian Substation (GWID) Reconstruction Project (project) will intersect lands owned by the Municipality of Anchorage (MOA), the Alaska Department of Natural Resources (DNR), and private landowners. The reconstructed line will generally follow the existing alignment within Chugach's 100-foot (ft) right-of-way (ROW). During construction and throughout operations, Chugach will maintain compliance with the *2008 Transmission Line Right-of-Way Corridor and Access Management and Maintenance Plan* (ROW Plan), and the standard operating procedures (SOPs) contained therein, and with other federal, state and local permits, in an effort to avoid or minimize potential project impacts.[2]

Construction of the project will unavoidably intersect and require placing fill within jurisdictional wetlands and other waters of the U.S. (WOTUS), an activity subject to Section 404 of the Clean Water Act (CWA). The project will also require fill placement in waters subject to Section 10 of the Rivers and Harbors Act of 1899. Chugach is seeking U.S. Army Corps of Engineers (USACE) authorization for the placement of fill into WOTUS as well as Section 401 authorization from the Alaska Department of Environmental Conservation. Project construction will also require work below ordinary high water (OHW) and/or mean high water (MHW) in habitat known to support fish. Therefore, Chugach is also requesting fish habitat (FH) permits (Title 16) from the Alaska Department of Fish and Game (ADF&G).

This document is structured as follows:

- **Section 2.0** describes the purpose, location, and proposed project components.
- **Section 3.0** focuses on activities that require placing fill in WOTUS.
- **Section 4.0** describes considerations pursuant to the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA)
- **Section 5.0** focuses on project elements that require work in fish habitat.
- **Section 6.0** discusses cultural recourses within the project area.
- **Section 7.0** summarizes applicant's proposed mitigation measures.

[1] The Quartz Creek 115kV Transmission Line was initially constructed primarily with wood H-frame structures and insulated to 115kV. Inspections conducted in 2007 confirmed that many of the structures are nearing the end of their useful life and require replacement. Since 2004, Chugach has replaced six segments (nearly 40 miles) of the Quartz Creek transmission line between Twentymile Creek and Summit Creek.
[2] A ROW and Access Use Plan form specific to this project is attached to this document (**Attachment A**).

2.0 Proposed Project

2.1. Project Purpose

The purpose of this project is to rebuild and upgrade approximately 12 miles of existing 115kV transmission line that previous inspection determined to be deteriorating and nearing the end of its useful life. The line section between the Girdwood and Indian substations will be rebuilt to 230kV standards to maintain reliability and accommodate anticipated electrical load growth.

2.2. Project Location

The project is located within Township (T) 10 North (N), Range 1 East (E), Sections 21-24, 29, 30; T10N, R2E, Section 1; T10N, R1 West (W), Sections 5, 9-10,14-15, 24-25; T11N, R1W, Section 32 of the Seward Meridian (**Figure 2**).

2.3. Project Elements

The GWID project will involve replacing the existing 115kV transmission line structures between the Girdwood and Indian substations with new support structures (e.g., utility poles or towers) designed for 230 kV (**Figure 2**). The first eight utility poles extending from the Indian Substation do not need to be replaced and therefore will remain in place. Chugach will install 55 new utility structures (steel or new wood frames) and 15 new towers to support the upgraded conductor[3] and remove the old structures. Where structures are removed, foundations will be cut off at ground surface and concrete pads removed. Foundations for the new structures, and the type of structure installed, will be based on subsurface conditions and location. Detailed plan views for the project are provided in the attached figures.

The ROW corridor for the transmission line is 100 ft wide, with the powerline itself (i.e., conductor) generally situated down the center of the corridor. The new transmission line will generally follow the ROW centerline. In most cases, each new structure will be located near the existing structure to be removed, except where current design standards require a change in location due to hazard and/or siting constraints (e.g., to avoid avalanche-prone areas).

The existing utility pole 24-7 is located in an avalanche area that jeopardizes the integrity of the line. Chugach proposes to rebuild utility pole 24-7 in a new upland location east of the existing alignment and just outside of the existing ROW (see **Inset 1**).

[3] Depending on Engineering Requirements new utility structures (e.g., H-Poles and Single Poles) will increase in height from 10 to 20 ft and towers will increase in height by 10 to 50 ft.

Inset 1. Proposed Location for Structure 24-7 (to avoid avalanche zone)

2.4. Construction & Anticipated Schedule

Chugach plans to conduct most of the construction and associated access improvements during winter conditions when the ground is frozen. Winter construction and access will be especially important when operating equipment in wetlands. While some project components (utility poles or towers) extend below the MHW elevation of Turnagain Arm, Chugach commits to driving piles or drilling into rock below high tide line (HTL) during low tidal cycles (in-the-dry) to avoid

potential impacts on the Cook Inlet beluga whale (*Delphinapterus leucas*). Additional construction details are provided in the subsections below.

2.4.1. Clear Vegetation to Reestablish Access

The ROW corridor is not vehicle traversable from end to end but is instead accessed via several preestablished temporary access routes that originate from primary and secondary roads. Prior to rebuilding the transmission line, Chugach must clear vegetation and reestablish currently overgrown access routes to the ROW, and clear vegetation from within the ROW between the Girdwood and Indian substations, as needed.

Vegetation clearing will occur throughout the 100-ft wide ROW while access routes will require a 12-ft maximum clearing width. Buffering zones will be retained at stream crossings, as outlined by the *Chugach Vegetation Management Guidelines and Schedule*, developed in consideration of vegetation, water, wetlands, and wildlife (see Appendix C of ROW Plan). Vegetation clearing methods will include mechanical clearing, hand clearing, or a combination of both, depending on site conditions and as specified in the ROW Plan. However, no grubbing will occur.

Vegetation clearing will be avoided from May 1 to July 15 to protect nesting migratory birds and will not occur within 660 ft of active bald eagle (*Haliaeetus leucocephalus*) nests, as recommended by the United States Fish and Wildlife Service[4] (USFWS) and in compliance with SOPs. Vegetation clearing in wetlands, where necessary, will occur when the ground is frozen during winter conditions. Chugach anticipates that vegetation clearing will start in select areas in February 2023 and that construction will start shortly thereafter and be completed by April 2024.

2.4.2. Rebuild Transmission Line

To facilitate construction, Chugach plans to establish two temporary laydown/work areas in previously cleared upland areas. One temporary laydown/work area will be sited in an existing gravel-covered area at approximately Milepost (MP) 95.75 of the Seward Highway on DOT&PF-owned land (**Figure 11**). The existing Bird Creek parking lot located on the south side of Bird Creek will also be used as a temporary laydown area (**Figure 20**).

Depending on subsurface conditions, pipe pile or rock anchor foundations will be installed to support the new structures. Rock anchor foundations will involve drilling rods into solid rock. The rods will be encased with concrete in a 60-inch diameter steel casing, with a minimum reveal of 12 feet. An anchor plate will secure the new poles to the new rock-anchored foundation. Equipment to install the rock anchor foundation will include an excavator for rock drilling, welding equipment, a crane, concrete pump, and concrete trucks.

[4] The USFWS advises that vegetation clearing in southcentral Alaska be avoided in forest, shrub, and open habitats from May 1 to July 15 to protect nesting migratory birds and that any active nest encountered at any time be left in place and protected until the young hatch and depart (USFWS 2009). The USFWS also recommends that no clearing or construction activity occur within 330 ft of an active bald or golden eagle nest or nest tree and that any work within 660 ft from an active nest be restricted during the breeding season (January 15 through July 31) (USFWS 2009).

In areas that do not have solid rock, 30-inch, 36-inch, or 42-inch diameter pipe pile (approximately 40-45 feet in length) will be driven into the substrate to support the new towers. The contractor will use a crane mounted pile-driver and welding equipment to install anchor plates for mounting towers.

Chugach anticipates that use of a 150-ton crane with a 25-foot spread will be needed to support construction at select sites along Turnagain Arm. At some locations, it will be necessary to construct access platforms to allow for the safe operation of a 150-ton crane during installation of new foundations and towers and the removal of the old structures. The 150-ton crane will support pile-driving, erection of steel structures, removal of existing towers, stringing, sagging, clipping of new conductor, and removal of existing conductor. Access platforms will be designed to accommodate a 150-ton crane and its associated turning radius.

While Chugach commits to avoiding impacts to WOTUS to the extent practicable, total avoidance is not possible. Chugach's preferred method of crossing wetlands includes using low pressure ground equipment during winter months while the ground is frozen with 12 inches of ice cover and 12 inches of snow cover. When ideal ice and snow conditions cannot not met, consideration will be given to the use of matting. If there are areas where a winter wetland crossing is not possible and ground conditions are suitable per agency standards, Chugach shall utilize a combination of low-pressure ground equipment and/or distributed weight matting. Work will be conducted in accordance with Chugach's SOPs and select operating policy (OP) as outlined in the ROW Plan.

3.0 Wetlands and other Waters of the U.S.

Wetlands and other waters, including those mapped within the proposed project footprint, are subject to Section 404/10 of the CWA. Therefore, project components that involve discharging fill into WOTUS, grubbing, and/or other forms of mechanized land-clearing in WOTUS require prior USACE authorization. The attached figures show wetlands included in the 2008 MOA Wetlands Atlas.

3.1. Estimated Acreage of Fill in WOTUS

Installing foundations for the new transmission line structures and constructing access platforms at select locations will require placing fill in WOTUS. Foundations for the transmission line structures will be based on subsurface conditions, as shown in **Figure 27**. Chugach requests authorization for the following activities in WOTUS:

- Place fill in less than **0.01** acre of WOTUS (above HTL) for steel pipe and foundations
- Place fill in approximately **1.96** acres of WOTUS (0.67 acres between HTL and MHW and 1.29 below MHW) for access platforms to facilitate removal of existing towers and installation of new towers adjacent to Turnagain Arm

Construction of crane access platforms will be necessary at 15 sites south of the highway and directly adjacent to Turnagain Arm. At 11 of those sites, fill will extend below HTL and MHW, as summarized in **Table 1** and shown in the attached figures.

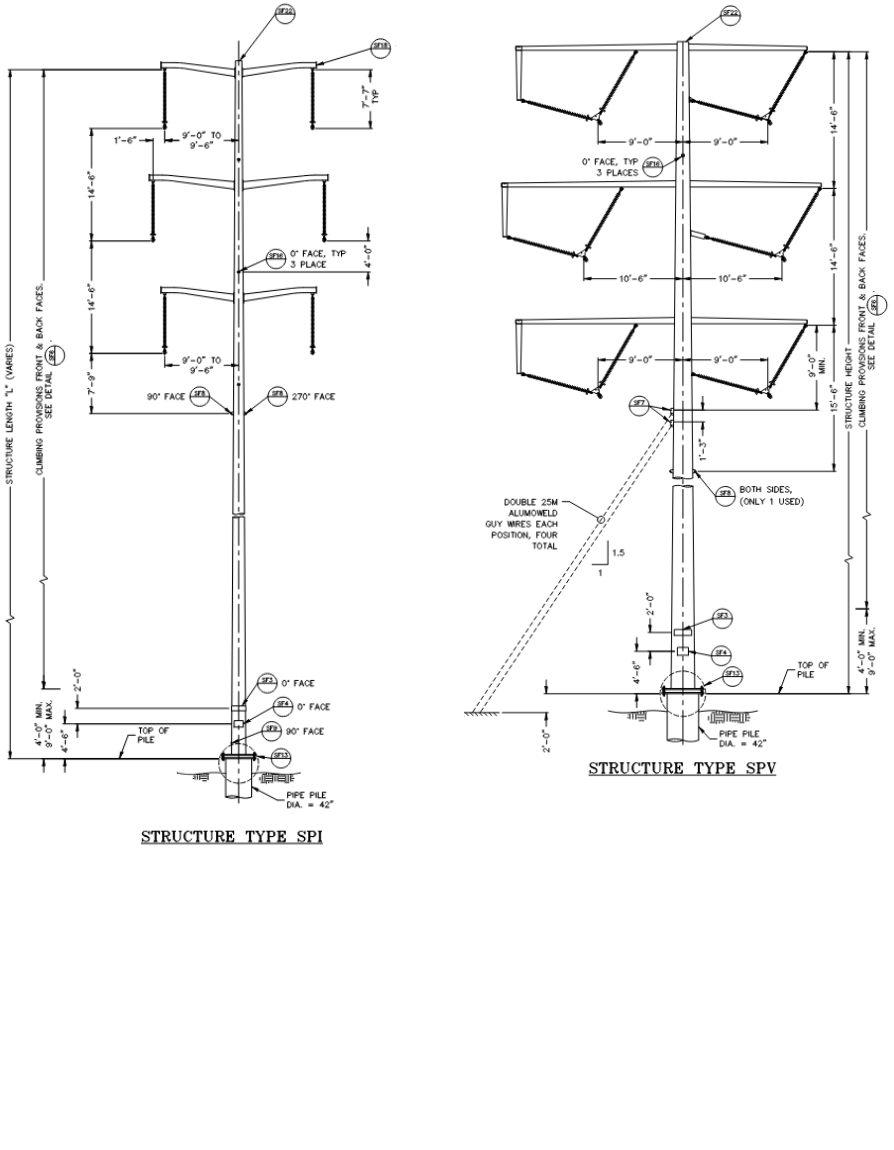
Table 1. Anticipated Marine Fill Acreage for Access Platforms at Select Structures

		Acres in Waters of the U.S.		
Structure	**Figure Number**	**Between HTL and MHW**	**Below MHW**	**Totals**
27-4	10	0.09	0.26	0.35
28-1	9	0.02	0.05	0.07
28-3	8	0.04	0.11	0.15
29-3	6	0.02	0.02	0.03
30-2	6	0.04	0.08	0.11
30-3	5	0.07	0.20	0.26
30-4	5	0.05	0.11	0.16
31-1	5	0.08	0.00	0.09
31-2	4	0.08	0.16	0.24
31-3	4	0.13	0.25	0.37
31-3A	4	0.06	0.05	0.11
	Totals	**0.67**	**1.29**	**1.96**

Fifteen existing structures that need to be replaced are located in palustrine WOTUS (above HTL). Foundations to support the replacement structures at these locations will also be installed in palustrine WOTUS above HTL (see **Figures 3, 4, 14-16, and 22**). Foundations will not be installed directly in stream channels. **Inset 2** displays foundation types that will be used at these locations.

3.2. Estimated Volume of Fill in WOTUS

Chugach anticipates that approximately 15,000 cubic yards of permanent fill in WOTUS will be necessary for construction of the crane access platforms along Turnagain Arm. Pipe foundations will account for an estimated 305 cubic yards in WOTUS.



Inset 2. Structure types to replace existing structures in palustrine wetlands (above HTL)

4.0 Endangered Species Act / Marine Mammal Protection Act

4.1. Endangered Species Act

The USFWS and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) administer and enforce the Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq.), as amended (50 CFR 402). **Table 2** identifies species that occur in Alaska, and whether they are listed as federally threatened, endangered, or candidates for listing and therefore afforded protection under the ESA.

Table 2. Species listed as threatened, endangered, proposed, or candidates under the Endangered Species Act that occur in Alaska (2022).

Common Name	Scientific Name	ESA Status	Agency
Eskimo curlew	*Numenius borealis*	Endangered	USFWS
Short-tailed albatross	*Phoebastria albatrus*	Endangered	USFWS
Spectacled eider	*Somateria fischeri*	Threatened	USFWS
Steller's eider (Alaska breeders)	*Polysticta stelleri*	Threatened	USFWS
Northern sea otter, Southwest DPS	*Enhydra lutris kenyoni*	Threatened	USFWS
Polar bear	*Ursus maritimus*	Threatened	USFWS
Wood bison	*Bison bison athabascae*	Threatened	USFWS
Aleutian shield fern	*Polystichum aleuticum*	Endangered	USFWS
Blue whale	*Balaenoptera musculus*	Endangered	NMFS
North Pacific right whale	*Eubalaena japonica*	Endangered	NMFS
Fin whale	*Balaenoptera physalus*	Endangered	NMFS
Sei whale	*Balaenoptera borealis*	Endangered	NMFS
Sperm whale	*Physeter macrocephalus*	Endangered	NMFS
Bowhead whale	*Balaena mysticetus*	Endangered	NMFS
Beluga whale, Cook Inlet DPS	*Delphinapterus leucas*	Endangered	NMFS
Humpback whale, Mexican DPS	*Megaptera novaeangliae*	Threatened	NMFS
Humpback whale, Western North Pacific DPS	*Megaptera novaeangliae*	Endangered	NMFS
Steller sea lion, Western DPS	*Eumetopias jubatus*	Endangered	NMFS
Arctic ringed seal	*Phoca hispida hispida*	Threatened	NMFS
Bearded seal, Beringia DPS	*Erignathus barbatus nauticus*	Threatened	NMFS
Loggerhead sea turtle	*Caretta caretta*	Threatened	NMFS
Green sea turtle	*Chelonia mydas*	Threatened	NMFS
Leatherback sea turtle	*Dermochelys coriacea*	Endangered	NMFS
Olive Ridley sea turtle	*Lepidochelys olivacea*	Threatened	NMFS

Note: NMFS also reports 15 fish species that spawn on the west coast of the Lower 48 states but may occur in Alaskan waters during the marine phases of their lives and that are not included in this table (NMFS 2022).

The Cook Inlet beluga whale, a species listed as Endangered under the ESA, occurs in Turnagain Arm; habitat below the MHW elevation in Turnagain Arm is designated as critical habitat for this species (76 FR 20180). ESA species distribution and the potential for other species occurrence within or near the project area is based on the USFWS' Information for Planning and Consultation (IPaC) program and the NOAA Fisheries[5] Alaska ESA and Critical Habitat Web Mapper.

[5] NMFS is also known as NOAA Fisheries.

Results from a July 2022 query generated by IPaC suggest that the short-tailed albatross has the potential to occur near the project area (USFWS 2022). Currently, no critical habitat is designated for the short-tailed albatross. The potential for short-tailed albatross to occur within the project area is very low. This species spends most of its life at sea when not breeding on remote islands in Japan, Taiwan, and Hawaii. Satellite data has confirmed that juveniles and subadults travel more extensively between Hawaii and Alaska than adults to feed in nearshore areas along the outer coast (USFWS 2012). Based on life history and habitat preferences, short-tailed albatross presence in the project area is not anticipated as habitat conditions do not appear suitable for this species[6].

The IPaC-generated report does not identify the potential presence of any other USFWS-managed ESA-listed species within or near the project area, and based on life history and habitat use, no other species are anticipated. The NOAA Fisheries Alaska ESA and Critical Habitat Web Mapper confirmed that the Cook Inlet beluga whale is the only ESA-listed species managed by NMFS with the potential to occur in the project vicinity (NMFS 2022).

4.1.1. Cook Inlet beluga whale

The Cook Inlet beluga whale occurs in Turnagain Arm and habitat below MHW in Turnagain Arm is designated as critical habitat for this species.

Replacing structures south of the highway along Turnagain Arm will require placing fill to create access for a large crane. The 150-ton crane will be used to remove existing towers and install new towers. Due to siting constraints (e.g., ARRC ROW and the Seward Highway) at 11 locations, some fill for the crane access platforms will extend below MHW of Turnagain Arm. Chugach has committed to placing fill below MHW during low tide conditions (in-the-dry) to avoid potential impacts on beluga whales or designated habitat during construction.

Once in place, the permanent fill is not expected to impact the Cook Inlet beluga whale or adversely affect critical habitat. This stretch of the Seward Highway (MP 91 to MP 96) is currently armored with riprap to protect the highway and the existing towers. The fill material would be consistent with existing shoreline habitats. The placement of the fill material may result in localized hydraulic and sedimentation changes, though given the existing sedimentation and hydraulic in Turnagain Arm, these localized changes are not anticipated to effect beluga whales or adversely affect their critical habitat or affect prey species (e.g., eulachon [hooligan] and

[6] Short-tailed albatross are known to breed on volcanic ash or grassy terraces on remote islands in Japan; Taiwan; and to a lesser degree, Hawaii. Birds begin breeding around 6 years old and mate for life. Each pair lays a single egg in October or November (every year or every other); eggs hatch by early January and chicks are flightless and dependent upon the pair for about 5 months. After breeding, birds move to feeding areas throughout the North Pacific, including the Bering Sea, Aleutian Islands, and Gulf of Alaska (USFWS 2012). This species spends a vast majority of its time soaring over the ocean, only coming to land to nest (ADF&G 2022). Satellite tracking data has shown that juvenile and subadult (up to 2 years old) short-tailed albatross travel more extensively between Hawaii and Alaska than adults and may forage in nearshore waters adjacent to the outer coast. In Southeast Alaska, the short-tailed albatross occurs primarily in nearshore areas along the outer coast, particularly where the continental shelf break is close to shore (Tongass National Forest 2016).

pacific salmon) populations. Installation of support piles / poles for the new structures will not occur in water and therefore would have no impact on the Cook Inlet beluga whale.

4.2. Marine Mammal Protection Act

All marine mammals are protected under the Marine Mammal Protection Act. The NOAA Fisheries Alaska ESA and Critical Habitat Web Mapper confirmed that based on species distribution and range data, the Cook Inlet beluga whale, harbor porpoise (*Phocoena phocoena*), harbor seal (*Phoca vitulina*) are the primary marine mammal species likely to occur in Turnagain Arm (NMFS 2022).

While some fill will extend below the HTL and MHW, Chugach has committed to placing fill that extends below HTL or MHW during low tide conditions (in-the-dry) to avoid potential impacts on marine mammals.

5.0 Fish and Essential Fish Habitat

The Magnuson-Stevens Act defines essential fish habitat (EFH) as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.[7]" EFH is identified by textual and spatial descriptions in the Fisheries Management Plans (FMP) developed by Fishery Management Councils. The North Pacific Fishery Management Council (NPFMC) identifies habitat in Cook Inlet, including Turnagain Arm, as essential for Pacific salmon[8] and several groundfish species (NPFMC 2021, 2020). There are no designated habitat areas of particular concern near the project[9].

Estuarine and marine waters in Turnagain Arm provide EFH for all life stages of Chinook (*Oncorhynchus tshawytscha*), chum (*O. keta*), coho (*O. kisutch*), sockeye (*O. nerka*), and pink salmon (*O. gorbuscha*) (NPFMC 2021). Freshwater streams, lakes, ponds, wetlands, and other water bodies that support Pacific salmon, as identified by the ADF&G Anadromous Waters Catalog (AWC), are also considered EFH for the species identified. Anadromous streams and ponds within the project area are listed in **Table 3** and displayed on the attached figures.

[7] The Magnuson-Stevens Act notes: for the purpose of interpreting the definition of EFH, 'waters' include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; 'substrate' includes sediment, hard bottom, structures underlying the waters, and associated biological communities, 'necessary' means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and 'spawning, breeding, feeding, or growth to maturity' covers a species full life cycle.

[8] Marine EFH for salmon in Alaska includes all estuarine and marine areas utilized by salmon of Alaska origin, extending from the influence of tidewater and tidally submerged habitats to the limits of the U.S. Exclusive Economic Zone; marine habitat extends from the MHW to the 200-nautical-mile limit offshore; the estuarine component includes the area within the MHW and the salinity transition zone within nearshore waters (NMFS 2005).

[9] Habitat areas of particular concern are areas of special importance that may require additional protection from adverse effects.

Table 3. Anadromous Streams/Ponds within or near the GWID Project ROW

Figure Number	Structure Number	Stream/Waterbody Identification	FMP-Managed Species	Project Considerations
3	Between 1-4 and 1-3	Tidewater Slough (AWC 247-60-10253)	Chinook and coho salmon	Work in the Tidewater Slough area will occur during winter conditions; equipment crossing of stream not anticipated.
15	24-7	*Near AWC 247-60-10271*	*Assume coho salmon*	Replace structures; located in waters. Work will occur in winter and will include vibratory installation of 36-inch pipe piles.
	24-6	AWC 247-60-10271	Coho salmon	
	24-5 24-4	AWC 247-60-10272-0010		
	24-3	AWC 247-60-10272		
	24-2	AWC 247-60-10272-2009		
16	24-1	*Pending ADF&G nomination*		
20	Between 22-1 and 21-8	Bird Creek (AWC 247-60-10280)	Chinook, chum, coho, and pink salmon	No structures in water body, equipment crossing not anticipated.

The Magnuson-Stevens Act, as amended by the Sustainable Fisheries Act of 1996, directs federal agencies to consult with the NMFS when any of their activities may adversely[10] effect on EFH. When a federal agency authorizes, funds, or undertakes an action that may adversely affect EFH, they must consult with NOAA Fisheries on that action.

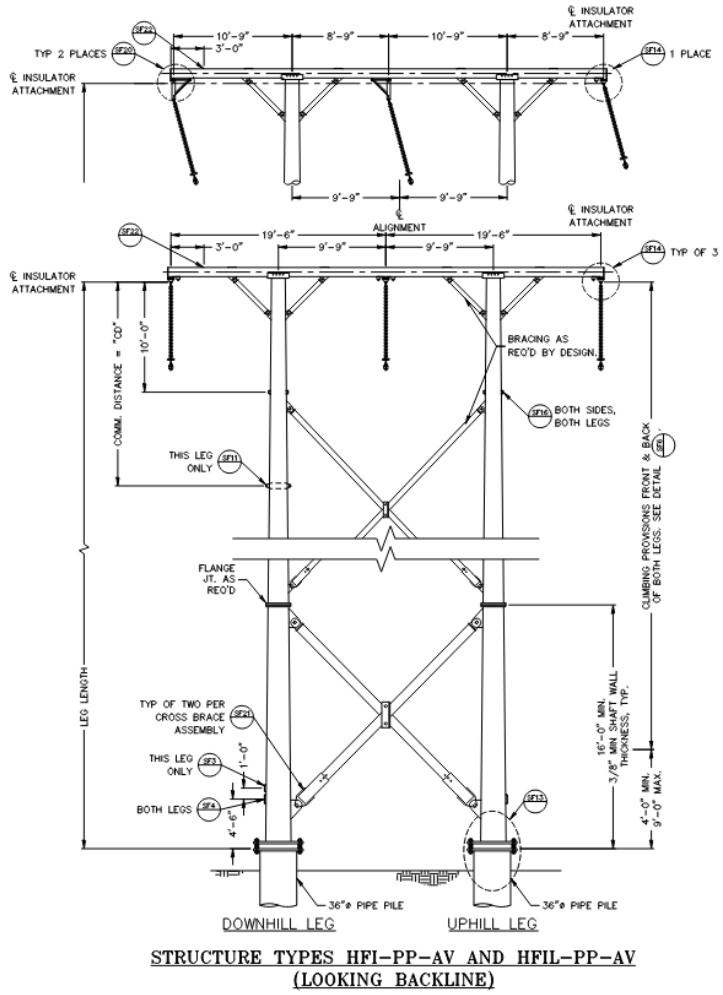
5.1. Anadromous Streams & Ponds

Seven existing structures (24-1 through 24-7) that need to be replaced are located in inundated WOTUS, of which six are also identified as freshwater EFH for Pacific salmon (see **Table 3**). Chugach proposes to rebuild the existing structures.

Impacts to freshwater EFH are expected to be minimal, as all work in wetlands and waters will occur during frozen winter conditions. Six of the structures will be supported by two 36-inch diameter piles driven into the substrate (**Inset 3**), while structure 24-7 will be supported by three 50-inch diameter piles (**Inset 2**, bottom right). The footprint for each foundation will eliminate a relatively small amount of EFH. Chugach anticipates using a vibratory hammer, rather than an impact hammer, to install foundations.

Some localized effects such as sediment disturbance due to excavation actives for foundation installation will occur. No dewatering activities are expected to occur.

[10] An adverse effect refers to any impact which reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).



Inset 3. Structure Assembly to Replace Structures 24-1 through 24-6.

5.2. Turnagain Arm

The placement of marine fill will be needed to allow for the installation of new towers at 11 sites along Turnagain Arm (**Table 1**). Pacific salmon depend on estuarine habitat within the project area for migration (primary adults) and rearing (juveniles). Fill would be placed during low tidal conditions (in-the-dry) to minimize potential adverse effects.

The entire stretch of highway, MP 91 to MP 96 is armored with riprap to protect the Seward Highway and the existing towers. The addition of fill (including riprap) dispersed across 11 relatively small areas could result changes to EFH conditions for bank-oriented migrating adult salmon. The additional fill is not expected to prevent or impede adult fish passage or out-migration conditions for juvenile salmon because the fill material will be consistent with existing shoreline habitat conditions. The placement of the fill material also may result in localized hydraulic and sedimentation changes though given the extreme sedimentation and hydraulic in Turnagain Arm, these localized changes would have little to no effect on migratory or juvenile rearing conditions.

While the project would eliminate some EFH due to fill placement, the project is not anticipated to adversely affect FMP-managed species populations.

6.0 Cultural Resources

Cultural resources is a broad term that commonly refers to physical material items or places associated with past human activities. Section 106 of the of the National Historic Preservation Act of 1966, as amended, and its implementing regulations found in 36 CFR 800, requires federal agencies to consider the effects of their actions on historic properties (36 CFR 800.1(a)). Historic properties are any prehistoric or historic district, site, building, structure, object, or traditional cultural property included in or eligible for inclusion in the National Register of Historic Places (36 CFR 800.16(l)(1)).

On May 6, 2022, HDR submitted a cultural and historical analysis to the State of Alaska Historic Preservation Office (SHPO) at the Alaska Office of History and Archeology (OHA) based on data from the Alaska Heritage Resource Database. The analysis identified known cultural and historical resources that may be present in the project area. On June 2, 2022, SHPO responded via email (see **Attachment A**) and offered the following comments:

> "The documentation presented indicates that the work proposed is unlikely to adversely affect significant cultural resource sites. Based on the nature of the activities, resources currently identified, and previous work along the corridor we have no immediate concerns or objections with the project. However, please keep in mind that only a very small portion of the state has been surveyed for cultural resources and therefore the possibility remains that previously unidentified resources may be located within the project area. As such, should inadvertent discoveries of cultural resources occur, our office should be notified so that we may evaluate whether the resources should be preserved in the public interest (as specified at Section 41.35.070[d]). Any information provided helps the State better manage Alaska's heritage resources. File No.: 3130-2R DMLW/2022-00588".

7.0 Mitigation

7.1. Avoidance and Minimization

Chugach plans to conduct most of the construction and associated access improvements during winter conditions when the ground is frozen. Winter construction and access will be especially important when operating equipment in wetlands. While some project components (utility poles or towers) extend below the MHW elevation of Turnagain Arm, Chugach commits to driving piles or drilling into rock below HTL during low tidal cycles (in-the-dry) to avoid potential impacts on the Cook Inlet beluga whale.

While Chugach commits to avoiding impacts to WOTUS to the extent practicable, total avoidance is not possible. Chugach's preferred method of crossing wetlands includes using low pressure ground equipment during winter months while the ground is frozen with 12 inches of ice cover and 12 inches of snow cover. When ideal ice and snow conditions cannot not met, consideration will be given to the use of matting. If there are areas where a winter wetland crossing is not possible and ground conditions are suitable per agency standards, Chugach shall utilize a combination of low-pressure ground equipment and/or distributed weight matting.

Chugach will follow the SOPs/OP and other best management practices (BMPs) outlined in the ROW Plan, as well as the requirements of other federal, state and local permits issued for the project. Below is a summary of SOPs and OP; however, please refer to Appendix C of the ROW Plan for a full description.

1. **SOP1-Access**. This SOP covers entry and use of access routes or points required for work on the transmission line between Anchorage and the Cooper Lake Power Project and provides the use and timing of access points for both unimproved and improved access routes, access restrictions, vegetation removal and surface work within the access, and responsibilities of Chugach and the underlying landowners.
2. **SOP2-Equipment Utilization**. This SOP identifies the types of equipment required for the transmission line, discusses seasonal constraints for equipment use and considerations of equipment use specific to vegetation removal (**SOP1**), at wetland crossings (**SOP7**) and stream crossings (**SOP6**), discovery of cultural/archaeological evidence (**SOP5**), potential wildlife encounters (**SOP3, SOP4**), and actions to take in the event of a hazardous material (e.g., fuel, fluids) spill or leak; and parties' responsibilities.
3. **SOP3-Bear Denning**. This SOP identifies Chugach's measures to minimize the potential for interactions with bears that may be denning in or adjacent to the transmission line or associated access routes in winter (November through April).
4. **SOP4-Bird Nesting**. This SOP identifies steps to be taken to minimize impacts to nesting birds and comply with the Migratory Bird Treaty Act (MBTA; 16 U.S. Code [USC]

§ 703-712) and Bald and Golden Eagle Protection Act[11] (BGEPA; 16 USC § 668), such as seasonal timeframes to avoid certain activities, proximity of work to known nests, permit acquisition, and actions necessary prior to removing active or inactive bird nests; and responsibilities of each party.

5. **SOP5-Cultural/Archaeology**. This SOP identifies steps taken to comply with the Historic Properties Management Plan developed during relicensing (Federal Energy Regulatory Commission 2170); awareness during field activities, reporting requirements if potential cultural/archaeological (or historic) sites were to be encountered, coordination required prior to excavation and backfill work, and responsibilities of each party.
6. **SOP6-Stream Crossings**. This SOP discusses methods of crossing streams (i.e., fording) while also considering actions necessary to avoid or minimize potential impacts related to fish habitat, wetlands, drainage, and erosion. It discusses the potential need to select alternate access routes to avoid fording active streams, while also considering various seasonal constraints and using temporary culverts or bridges. Like all SOPs, it also discusses responsibilities of each party.
7. **SOP7-Wetlands**. This SOP identifies procedures when any Chugach activity involves work in or crossing wetlands, including considering how proposed work in wetlands can be avoided or impacts mitigated; scope of work required when activity involves work in or crossing wetland and submittal of permit applications under Chugach's Land Services or Environmental Engineering departments oversight; preferred methods of crossing wetlands to minimize potential impacts; and responsibilities.
8. **OP 024-Migratory Bird and Raptor Mitigation and Nesting, Injury, and Death Reporting Policy**. This policy defines responsibilities and functions for response to discovery of injured or dead Protected Birds or Protected Bird nests in, on, or around Chugach facilities and associated mitigation.

7.2. Compensatory Mitigation

The purpose of this project is to serve the public interest by rebuilding and upgrading approximately 12 miles of existing 115kV transmission line that previous inspection determined to be deteriorating and nearing the end of its useful life. The 90.4-mile Transmission Line that runs from Quartz Creek Substation near Kenai Lake to the substation in Anchorage and was originally constructed to carry power from the Cooper Lake Hydroelectric Power Plant to Anchorage. Today, this line also carries power produced by the Bradley Lake Hydroelectric Facility and the Nikiski Combined Cycle Power plant. In addition to Anchorage, the line also serves local distribution substations at Indian, Dave's Creek, Summit Lake, Hope, Portage, and Girdwood and Indian and interconnects with the power grid for Seward, Kenai/Soldotna, and Homer. Inspections conducted in 2007 concluded that the transmission line structures were

[11] The BGEPA restricts activities that may adversely affect eagles or their nests.

nearing the end of their useful life and required replacement. The line section will be rebuilt to 230kV standards to maintain reliability and accommodate anticipated electrical load growth.

Chugach plans to conduct most of the construction and associated access improvements during winter conditions when the ground is frozen. Chugach has committed to employing numerous design measures to avoid impacts and minimize unavoidable impacts and is not proposing compensatory mitigation for unavoidable impacts on WOTUS.

8.0 List of Required Permits

- USACE, Section 10 / 404 Permit
- DEC, Section 401 certification
- DNR, Special Use Permit
- ADF&G, Fish Habitat Permit
- DOT&PF, ROW Authorization
- ARRC, ROW Authorization
- MOA, ROW Authorization

9.0 References

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