

REQUEST FOR AN INCIDENTAL HARASSMENT AUTHORIZATION UNDER THE MARINE MAMMAL PROTECTION ACT

**Icy Strait Point – Cruise Ship Terminal
Hoonah, Alaska**

Submitted to:

**National Marine Fisheries Service
Office of Protected Resources
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On behalf of

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Project No. A12.0191.00

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UNDER THE MARINE MAMMAL PROTECTION ACT**

Icy Strait Point Cruise Ship Terminal

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**REQUEST FOR INCIDENTAL HARASSMENT AUTHORIZATION
UNDER MARINE MAMMAL PROTECTION ACT
ICY STRAIT POINT CRUISE SHIP TERMINAL
REVISED AUGUST 2014**

SUMMARY OF THE REQUEST

The Huna Totem Corporation (HTC) is proposing to re-develop the existing Icy Strait Point tourist facility in Hoonah, Alaska (Sheet 1). The proposed improvements include the construction of a new cruise ship berth terminal and associated upland improvements.

HTC requests that the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) issue an incidental harassment authorization (IHA) for incidental take¹ (in the form of Level B harassment) of marine mammals during pile driving activities conducted during pile installation activities that would be conducted during construction of the terminal.

Construction of the project will require pile installation below the mean higher high water mark (MHHW) of Icy Strait and Port Frederick, which has the potential to result in effects to marine mammals. The potential impacts of the proposed project on marine mammals include noise, water quality, and direct habitat effects associated with construction of the marine structures. Of these potential effects, temporarily elevated noise from impact pile driving is the only impact that could result in take.

Nine marine mammal species, subspecies, or distinct population segments (DPSs) have known distribution ranges that include the portion of Icy Strait/Port Frederick in which construction activities will occur. These are humpback whale (*Megaptera novaeangliae*), Eastern and Western DPS Steller sea lion (*Eumatopius jubatus*), harbor seal (*Phoca vitulina*), Dall's porpoise (*Phocoenoides dalli*), gray whale (*Eschrichtius robustus*), harbor porpoise (*Phocoena phocoena*), killer whale (*Orcinus orca*), minke whale (*Balaenoptera acutorostrata*), and Pacific white-sided dolphin (*Lagenorhynchus obliquidens*).

Temporarily elevated underwater noise during impact pile driving has the potential to result in take in the form of Level B harassment (behavioral disruption) of marine mammals that may be present during construction. Level A harassment (harassment resulting in injury) is not expected to occur as a result of the proposed action, as a marine mammal monitoring plan will be implemented to reduce the possibility of any marine mammals being exposed to terrestrial or underwater noise levels above the injury threshold established by NMFS.

The report has two appendices: Appendix A contains the figures, and Appendix B contains the marine mammal monitoring plan.

¹ Section 101(a)(5) (A-D) of the Marine Mammal Protection Act of 1972 (MMPA), as amended (16 U.S.C 1371 (a)(50)).

1.0 DESCRIPTION OF THE ACTIVITY

A detailed description of the specific activity or class of activities that can be expected to result in incidental taking of marine mammals.²

1.1 Introduction

The Icy Strait Point Cruise Ship Terminal project will require work in waters that support marine mammal species. The MMPA prohibits the taking of marine mammals, defined as “harass, hunt, capture or kill, or attempt to harass, hunt, capture or kill,” except under certain situations. Section 101 (a)(5)(D) allows for the issuance of an incidental harassment authorization provided an activity will have negligible impacts to marine mammals and will not adversely affect subsistence uses of marine mammals.

The project timing, duration, and activities have been analyzed for their potential to result in incidental taking of marine mammals protected under the MMPA. The analysis provided in this document has determined that the only project component that has the potential to result in take is temporarily elevated underwater noise during impact pile driving. These activities have the potential to result in Level B harassment (behavioral disruption) only, as a monitoring plan will be implemented to avoid³ the possibility of marine mammals being exposed to Level A harassment (harassment resulting in injury). These activities will not occur during the period (15 April to 31 May⁴) when herring are most likely to be present in or near the action area.

The project requests an IHA for incidental take due to potential Level B harassment of nine marine mammal species that may occur in the project vicinity: humpback whale (*Megaptera novaeangliae*), Eastern and Western DPS Steller sea lion (*Eumatopius jubatus*), harbor seal (*Phoca vitulina*), Dall’s porpoise (*Phocoenoides dalli*), gray whale (*Eschrichtius robustus*), harbor porpoise (*Phocoena phocoena*), killer whale (*Orcinus orca*), minke whale (*Balaenoptera acutorostrata*), and Pacific white-sided dolphin (*Lagenorhynchus obliquidens*). While not all of these species will necessarily be present during construction, the project would be conducted within waters that are within the known range of these species, and they are considered to have at least some potential to be present during construction.

² The italicized material throughout this document discusses what should be included in an IHA request and is drawn from the NOAA Fisheries website, <http://www.nmfs.noaa.gov/pr/permits/incidental.htm><http://www.nmfs.noaa.gov/pr/permits/incidental.htm>.

³ While no monitoring plan or impact minimization measure can guarantee 100% effectiveness, the implementation of the monitoring plan described in this document will be sufficient to minimize the potential for any Level A harassment to the greatest practicable degree.

⁴ Per email communication with Kate Kanouse, Habitat Division of the Alaska Department of Fish and Game dated 13 August 2014.

1.2 Project Purpose and Need

Cruise ship business is critical to the community at Icy Strait Point and the tourist industry there draws more than 140,000 visitors per year. The purpose of the project is to streamline cruise ship operations at the site by constructing a permanent cruise ship berth, renovating existing tourist facilities and constructing additional tourist facilities to support cruise ship terminal operations at the site. The existing facility requires the vessel to anchor offshore, and requires passengers to be lightered (ferried in a smaller boat) to shore, which causes a bottleneck in operations. The new terminal has been designed as a floating platform to disembark/embark passengers so that there is a fixed elevation between the dock surface and the ships gangways, and to provide passengers with direct access to shore.

1.3 Project Description

The existing Icy Strait Point site is located at 108 Cannery Road in Hoonah Alaska, in Township 43S, Range 61E, Section 28 (Sheet 1). The project site is located at the junction of Icy Strait and Port Frederick, in the Baranof-Chichagof Islands watershed (HUC #19010203).

The project would construct a new cruise ship berth terminal and associated upland improvements at the existing facility. The existing facility is served by an approximately 100-foot by 25-foot excursion dock, with an approximately 140-foot walkway connecting to shoreline. There is also an existing 40-foot by 80-foot fishing pier which is connected to the shore by an approximately 120-foot walkway.

The new terminal would consist of a floating pontoon, which would be connected to the shore via a new trestle and transfer span. The new terminal would also include two new mooring dolphins, two new breasting dolphins, and three or more new reaction dolphins. Each of these would be interconnected via pile-supported catwalks.

The existing facility requires passengers to be lightered (ferried in a smaller boat) to shore, which causes a bottleneck in operations. Cruise ships currently anchor offshore and must operate their main engines and lateral thrusters to maintain position during lightering operations. Additionally, some existing cruise ship lines cannot accommodate lightering operations, and cannot currently call on the facility. The new facility would streamline cruise ship operations by providing passengers direct access to shore. The new facility will also provide access consistent with Americans with Disability Act (ADA) standards, allowing passengers improved access to shore. These improvements are expected to result in economic benefits, as more passengers will disembark, and stop over lengths may be increased.

Cruise ships calling on the new terminal will tie off at the floating pontoon which would eliminate the need for anchoring and the associated benthic impacts caused by the anchor and anchor chain. The elimination of lightering operations would also

eliminate over 100 small vessel trips per day when a cruise ship is visiting the site. These changes in operation would translate into a substantial reduction of fuel use, emissions, and in-water noise through the elimination of anchoring, lightering, and associated cruise positioning.

In addition to the new cruise ship berth, the project includes significant upgrades to the upland (above MHHW) tourist facilities at the site. Upland portions of the project include demolition of some existing structures and construction of additional facilities and site features to support the cruise terminal berth. The upland improvements also include improvements and modifications to associated infrastructure (e.g. gravel roads and promenades, pedestrian boardwalk, etc.). As stated in Section 1.1, the analysis provided in this document has determined that the only project component that has the potential to result in take is temporarily elevated underwater noise during impact pile driving. These activities have the potential to result in Level B harassment (behavioral disruption) only, as a monitoring plan will be implemented to reduce the potential for exposure to Level A harassment (harassment resulting in injury). The rest of the in-water and over-water components of the project are provided here for completeness. Similarly, upland improvements with no potential to affect marine mammals are described in Section 1.3.2, but are otherwise not discussed in detail in this document.

1.3.1 In-Water and Over-Water Work

In-water work (work below the MHHW) will be limited to pile installation. Pile installation activities will be limited to the period between June and September 2015 to avoid the period (15 April to 31 May⁵) when spawning herring are most likely to be present within the project area. Over-water work will include construction and installation of the steel trestle and transfer span, construction of the over-water portions of the mooring, breasting, and reaction dolphins, and construction of the catwalk spans. The floating pontoon will be fabricated in a dry dock and floated into position.

In-water and over-water components of the project would be constructed in areas with water depths ranging between MHHW and approximately -60 feet MLLW. The majority of the in-water and over-water work including construction of the mooring, breasting, and reaction dolphins; catwalks, a portion of the transfer span and floating pontoon will be completed between approximately -25 feet and -60 feet MLLW. Additionally, approximately 1,310 square feet of the trestle and transfer span will be constructed above MHHW (upland).

⁵ Per email communication with Kate Kanouse, Habitat Division of the Alaska Department of Fish and Game dated 13 August 2014.

Table 1 below summarizes the size and dimensions of the new in –water and overwater structures as well as the size and number of steel pipe piles that will be required for each component.

Table 1. In-Water and Over-Water Project Components

Proposed Structure	Approximate Area (square feet)	Steel Pipe Piles (# and diameter)			
Trestle and Transfer Span*	11,820	Twenty-one 30-inch, fifteen 24-inch			
Floating Pontoon	21,500	--			
Mooring Dolphins (2)	1,150 (total)	Fifteen 42-inch			
Breasting Dolphins (2)	1,540 (total)	Twenty 42-inch			
Reaction Dolphins (3)	1,750 (total)	Eighteen 42-inch, five 60-inch			
Catwalks (8 spans)	4,150 (total)	Ten 24-inch			
		<i>Total Piles by Size**</i>			
<i>Total Area</i>	43,220	<i>24-in.</i>	<i>30-in.</i>	<i>42-in.</i>	<i>60-in.</i>
<i>Total overwater coverage*</i>	41,910	25	21	53	5

* Approximately 1,310 square feet of the trestle and transfer span will be constructed above MHW (upland).

In-water and over-water work will primarily be completed using equipment mounted on barges and/or barge-mounted derricks. It is anticipated that a maximum of 3 barges, including material barges, will be anchored (four anchors per barge) at the site during offshore construction. The barges may be anchored with spud anchors in shallow water and line anchors in deeper water. Small vessels will be used for crew access and miscellaneous construction activities. Limited upland equipment will be used to support in-water construction.

Each element is further described below.

1.3.1.1 Pile Installation

The over-water structures, except for the floating pontoon, will likely be founded on steel pipe piling. Piling will be driven and proofed with an impact hammer. Tension rock anchors (micropiles), consisting of a bundle of pre-stressing tendons grouted into the bedrock and anchored near deck level, will be installed through the inside of steel pipe piles to resolve tension loads to the bedrock. Grout will be placed around these tendons using tremie pipes which will be entirely contained within the steel pipe piles. The contractor may also elect to install temporary falsework files during construction. These would likely be steel pipe piles, most likely approximately 24-inches in diameter. Pile installation and proofing will be conducted with an impact hammer.

1.3.1.2 Trestle and Transfer Span

A new steel trestle (482 feet by 18 feet) and transfer span (173 feet by 18 feet) with associated steel foundations, measuring approximately 1,090 square feet, will be constructed to allow vehicle and pedestrian access between the pontoon and upland areas. These spans will be supported by approximately fifteen 24-inch and twenty-

one 30-inch-diameter steel pipe piling that will be installed per the pile installation methods described above. A portion of trestle (approximately 1,065 square feet) and the trestle abutment (240⁶ square feet) will be constructed on the upland portion of the site. The new trestle and transfer span will create approximately 11,820 square feet of new overwater coverage. The trestle and transfer span are shown on Sheets, 18 through 21.

1.3.1.3 Pontoon

A new floating steel pontoon (21,500 square feet) with associated steel components will be constructed to provide a landing surface for cruise ship gangways that is consistently 8 feet above the waterline. The substrate beneath the pontoon consists of fine to coarse gravel and sand with silt. The pontoon will be 400 feet by 50 feet with 1,500 square feet of overhanging steel components including pile hoops and the transfer span landing platform. The pontoon will be supported vertically by buoyancy and will be held in place horizontally by the reactions of rubber fender elements (fixed to the pontoon) against steel pipe piles of the nearby reaction dolphins (described below). The pontoon may be ballasted with a combination of gravel and/or seawater. The ballast material will be completely contained within the pontoon. The pontoon will likely be fabricated in a dry dock and floated into position.

1.3.1.4 Mooring Dolphins

Two new mooring dolphins, measuring 1,150 square feet (each approximately 575 square feet), will be constructed to provide mooring points for lines from the cruise ship vessels. The dolphins will be supported by 42-inch-diameter steel pipe piles (seven and eight piles, respectively) that will be installed per the pile installation methods described above.

1.3.1.5 Breasting Dolphins

Two new breasting dolphins, measuring 1,150 square feet (total), will be constructed to provide mooring points for the lines and breasting points for the hulls of cruise ship vessels. Each dolphin will be supported by ten 42-inch-diameter steel pipe piles that will be installed per the pile installation methods described above.

1.3.1.6 Reaction Dolphins

Approximately three new reaction dolphins, measuring 1,750 square feet (total), will be constructed to maintain the horizontal position of the floating pontoon. The reaction dolphins will be supported by eighteen 42-inch-diameter and five 60-inch-diameter steel pipe piles (total piles used for the three dolphins) that will be installed per the pile installation methods described above.

⁶ Approximately 45 square feet of the abutment are shaded by the trestle and are not included in this area calculation to avoid counting that area twice.

1.3.1.7 Catwalks

Eight new catwalk spans, measuring 4,150 square feet total (5 feet wide by 820 feet plus foundations), will be constructed to provide walking access between the pontoon and the mooring and breasting dolphins. The catwalks will be supported by ten 24-inch-diameter steel pipe piles that will be installed per the pile installation methods described above. The decking of the catwalks will be grated and supported by horizontal steel pipes.

1.3.2 Upland Project Components

The upland portions of the project include numerous improvements to the tourist and retail facilities to support the increased cruise passenger traffic that will result from the new cruise ship berth. The upland improvements will occur on approximately 11.5 acres of the Icy Strait property (which is approximately 22.3 acres in size). Table 2 below summarizes the upland components of the project.

Table 2. Upland Project Components

Proposed Building/Structure	# New Buildings	Approximate Area (square feet)
Trestle abutment (includes four 24-inch steel pipe piles)	--	285
Trestle (upland portion)	--	1,700
Gravel Roadway (1,700 feet by 20 feet)		33,400
Welcome Center	2	6,100
Landing Zone Bar & Grill Renovations	--	400
Nearshore Boardwalk Promenade	--	15,200
Gravel Promenade	--	39,000
Multipurpose area	3	2,150
Arts and crafts shops	5	1,000
Children’s Play Area	1	9,000 (includes 625 SF building)
Culinary Venue	2	1,600
Wooden pond pedestrian bridge	--	980
New Wood Barn	1	1,450
Retail	1	11,500
Excursion hub and tram stop	--	30,000
Retail	1	3,285
Waterfowl attraction	--	9,000
New Clan House	1	2,000
Parking for staff and tourist buses	--	38,000
Excursion Drop-Off	--	20,000
Staff Housing (3 buildings)	3	2,500
Boat works venue enhancements	--	
Information Kiosk	--	200
	Total Buildings	Total Construction Area
	20	228,750 SF (5.3 Acres)

1.3.2.1 Demolition

The following upland structures will be demolished and removed or replaced as part of the project.

- Wood shelter (460 square feet) located north of the heritage center will be demolished.
- Tram Ticket Shack (formerly U.S. Forest Service building) (160 square feet) at the existing tram stop will be relocated.
- A portion of the wood boardwalk (2,400 square feet) located west of the zip line will be demolished.
- Pavilion (including a 578 square feet covered BBQ area) located between the existing restaurant and proposed welcome center will be demolished.
- Three Connex storage containers will be demolished or removed from the site (320 square feet each)
- Sewer treatment plant disinfectant shack will be demolished and replaced (36 square feet).
- Donut shack (175 square feet) will be relocated.

1.3.2.2 Construction

The project includes the construction of the following structures and associated infrastructure to improve services for existing tourist traffic and accommodate projected increases to tourist traffic.

1.3.2.3 Trestle Abutment

A new concrete abutment will be installed at the upland end of the trestle. The abutment, measuring 285 square feet (19 feet by 15 feet), will be constructed to provide a reaction point for the trestle leading out to the pontoon and transition between the trestle and the upland grading. This area will be a new impermeable surface. The abutment will be supported by four 24-inch-diameter steel pipe piles that will be installed per the pile installation methods described previously. Installation of this abutment will require excavation of approximately 95 cubic yards and fill of approximately 10 cubic yards. This work will occur above the MHHW (upland).

1.3.2.4 Boardwalk Promenade

The existing boardwalk promenade in front of the cannery complex will be extended to the southeast seaside of the existing carpenter shop and retail building and end at the site's entry gate. The boardwalk will consist of wooden planks constructed on timber posts. Approximately 9,100 square feet of boardwalk will be added to the existing promenade. The new boardwalk promenade will be constructed entirely above MHHW (upland).

A new boardwalk promenade will be constructed around the multipurpose area with bar/grill extending northward toward the renovated restaurant. Approximately

6,100 square feet of new boardwalk consisting of wooden planks constructed on timber posts will be added to the project site. The new boardwalk promenade will be constructed entirely above the MHHW (upland).

1.3.2.5 Access Roadway and Parking

Approximately 1,700 linear feet (33,400 square feet) of new roadway and 88,000 square feet of new parking will be added as part of the proposed project. Both the roads and parking areas will be constructed using a gravel aggregate surface. The early excursion departure loop will have temporary pedestrian loading parking for two buses. The excursion hub and tram stop will include parking for three passenger vans for visitor loading and unloading, three buses for transporting visitors from the cruise ships to onshore destinations, and a three car length tram for shuttling visitors through the site's nature trails. Staff parking will include approximately 16 parking spaces for staff working on site and parking for the bus fleet serving the site. The excursion drop-off will be large enough to accommodate three visitor buses upon their return from the City with ample room for pedestrian departure to the site.

1.3.2.6 Nature Trails

The existing nature trails will be maintained in their current condition except for trails that will be rerouted near the new arrival plaza where a service drive is proposed as shown on Sheet 11.

1.3.2.7 Pedestrian Bridge

A wooden pedestrian bridge will be constructed over the lined pond located northwest of the existing maintenance and kitchen building as shown on Sheets 10 and 16. The bridge will lead directly to the culinary venue.

1.3.2.8 Culinary Venue

A culinary venue will be constructed along the west bank of an existing pond at the site. The venue will consist of two buildings. One building with a porch deck will be partially founded on piles placed in the pond.

1.3.2.9 Arrival Plaza

The arrival plaza will be surfaced with an aggregate gravel material and will be used for the loading and unloading of visitors from the pier. The arrival plaza is located between the pier, renovated restaurant and welcome center.

1.3.2.10 New Buildings

Approximately 20 new buildings will be constructed as part of the project. The buildings will include:

- Staff housing
- Retail shops
- Restaurants and snack bars
- Clan house

- Wood barn
- Culinary venue
- Multipurpose area with bar/grill
- Welcome center and other structures supporting the tourist facilities.

2.0 DATES, DURATION, AND REGION OF ACTIVITY

The date(s) and duration of such activity and the specific geographical region where it will occur.

2.1 Dates and Duration

The project will begin construction in September 2014. Initial design and fabrication of structural steel and the pontoon will commence at this time and will continue through approximately April 2015, at which point the in-water pile installation would commence. In-water pile driving will be completed in approximately four months.

The pontoon will arrive at the site in approximately August of 2015, and the remainder of the marine facility will be completed and commissioned in this timeframe as well. Overwater work should be complete by approximately September 2015. The upland project work will be completed between approximately September 2015 and May 2016.

The approximate estimate of 4 months of calendar time for pile driving is a worst case estimate. It is estimated that each pile will need to be driven approximately 50 feet to hit bedrock. This will most likely require between approximately 15 and 30 minutes per pile. The most likely scenario is that the contractor will prepare a group of 4 or 5 piles for installation, and then install them all as a group in a single day. This would require approximately 2.5 hours of hammer time total for the day. If the entire pile installation proceeds according to this general schedule, a total of approximately 40 hours of actual hammer time will be required, conducted on approximately 16-20 days of driving during the 4 month period in which pile driving would be conducted.

2.2 Region of Activity

The project will be conducted at the existing Icy Strait Point site, in waters of Icy Strait and Port Frederick. The project site is located at 108 Cannery Road in Hoonah Alaska, in Township 43S, Range 61E, Section 28 (Figure 1).

The “action area” (as defined in the biological evaluation [BergerABAM 2014]), is the extent of the detectable effects that could occur as a result of the project, and is defined for this project by the extent of temporarily elevated underwater noise that could occur during pile driving (Figure 21).

3.0 AFFECTED SPECIES AND NUMBERS IN THE AREA

The marine mammal species that may occur within the activity area and their distribution.

Nine marine mammal species, subspecies, or distinct population segments (DPSs) have known distribution ranges that include the portion of Icy Strait/Port Frederick in which construction activities will occur. These are humpback whale, Eastern and Western DPS Steller sea lion, harbor seal, Dall's porpoise, gray whale, harbor porpoise, killer whale, minke whale, and Pacific white-sided dolphin (Table 3). This IHA application assesses the potential impacts of the Project on these nine species. Each species is discussed more fully in Section 4.

Table 3 lists the marine mammal species addressed in this IHA request. It also provides a summary assessment of the typical level of occurrence in or near the study area, as well as an estimated abundance for the marine mammal stock(s) that could potentially occur within the action area. Estimated abundance numbers come primarily from NMFS Draft 2013 Alaska Marine Mammal Stock Assessment Report (Allen and Angliss 2013), with the exception of the abundance data for gray whale, which comes from the Draft 2013 Pacific Region Marine Mammal Stock Assessment Report (Caretta et al. 2013).

Table 3. Marine Mammal Species Addressed in this IHA Request

Species	Listing Status*	Critical Habitat	Occurrence In/Near Study Area	Estimated Abundance
Humpback whale (<i>Megaptera novaeangliae</i>)	Endangered	None	Common	21,800 (Entire Central North Pacific Stock)
Steller Sea Lion (<i>Eumatopius jubatus</i>)	Eastern DPS			
	Not listed**	None	Common	57,966 (entire Eastern Stock)
	Western DPS			
	Endangered	Designated	Common	52,200 (entire Western Stock)
Harbor seal (<i>Phoca vitulina</i>)	Not listed	None	Common	5,042 (Glacier Bay/Icy Strait Stock)
Dall's porpoise (<i>Phocoenoides dalli</i>)	Not listed	None	Uncommon	83,400 (entire Alaska stock)
Gray whale (<i>Eschrichtius robustus</i>)	Not listed	None	Uncommon	19,126 (Eastern North Pacific Stock)
Harbor porpoise (<i>Phocoena phocoena</i>)	Not listed	None	Common	11,146 (Southeast Alaskan Stock)
Killer whale (<i>Orcinus orca</i>)	Not listed	None	Common	AK Resident Stock: 2347 Northern Resident Stock: 261 GOA, Bering Sea. Aleutian Transient Stock: 587 West Coast Transient Stock: 243
Minke whale (<i>Balaenoptera acutorostrata</i>)	Not listed	None	Uncommon	1,233 (Gulf of Alaska and Western Aleutians)
Pacific white-sided dolphin (<i>Lagenorhynchus obliquidens</i>)	Not listed	None	Uncommon	26,880 (entire North Pacific Stock)

*Under the Endangered Species Act (ESA)

** Eastern DPS was removed from the Endangered Species List on November 4, 2013 (78 FR 66140)

4.0 STATUS AND DISTRIBUTION OF AFFECTED SPECIES OR STOCKS

A description of the status of the affected species or stocks of marine mammals likely to be affected by such activities.

4.1 Humpback Whale

Humpback whales range from California to the Chukchi Sea, Hawaii, and the Mariana Islands (NMFS 1991). During summer, humpback whales in the North Pacific migrate and feed over the continental shelf and along the coasts of the Pacific Rim. Humpback whales winter in three separate wintering grounds: (1) the coastal waters along Baja California and the mainland of Mexico; (2) the main islands of Hawaii; and (3) the islands south of Japan (NMFS 1991).

During summer and fall, humpback whales in the North Pacific forage over the continental shelf and along the coasts of the Pacific Rim, from Point Conception, California, north to the Gulf of Alaska, Prince William Sound, and Kodiak Island. Within this feeding area there are three relatively separate populations that migrate from these colder, highly productive higher-latitude waters to winter/spring calving and mating areas in warmer, lower-latitude coastal waters. Humpback whales in the waters of southeast Alaska belong to the Central North Pacific stock. This stock forages seasonally in the waters of British Columbia and Alaska and then, during winter, migrates to the Hawaiian Islands for mating and calving; however, a portion of the population remains in southeast Alaska waters year-round. Humpback whales are primarily observed foraging in southeast Alaska from May through December with numbers peaking in late August and September.

While the estimated population of the North Pacific stock remains much lower than the population size before whaling, humpback whales are increasing in abundance throughout much of their range. While the species currently remains listed as endangered throughout its range, the State of Alaska, in 2014, filed a petition with NMFS to designate the Central North Pacific Stock of humpback whale as a DPS and to delist this DPS under the ESA (ADF&G 2014).

In the North Pacific, humpback abundance was estimated at fewer than 1,400 whales in 1966, after heavy commercial exploitation. The current abundance estimate for the North Pacific is approximately 21,800 whales (NMFS 2012). Primary threats to the population include habitat impacts, boat strikes, net entanglement and harm from underwater sonar gear. (NMFS 2012)

Humpback whales have been observed within the waters of the action area during all months of the year, but are most frequently present during the late summer through early fall. Icy Strait has been identified as an important area for feeding, particularly early in the season, when whales are preying heavily on schooled fishes (NMFS 1991). Port Frederick has been identified as being of relatively higher importance during the later summer months, when whales are preying more heavily on swarming euphasiids (NMFS 1991). Humpback whales are less likely to be present during the months of January through April, when most of the whales in the Central North Pacific Stock migrate to wintering grounds near the Hawaiian Islands. However, some humpback whales remain resident in SE Alaskan waters, and could potentially be present during all months of the year. The current best population estimate for the Central North Pacific stock is 21,800 (Allen and Angliss 2013).

4.2 Steller Sea Lion

The Steller sea lion is a pinniped and the largest of the eared seals. Steller sea lion populations that primarily occur east of 144° W (Cape Suckling, Alaska) comprise the Eastern Distinct Population Segment (DPS), which was de-listed and removed from the list of Endangered Species List on November 4, 2013 (78 FR 66140). The

population west of 144° W longitude comprise the Western DPS, which is listed as endangered, based largely on over-fishing of the seal's food supply.

The range of the Steller sea lion includes the North Pacific Ocean rim from California to northern Japan. Steller sea lions forage in nearshore and pelagic waters where they are opportunistic predators. They feed primarily on a wide variety of fishes and cephalopods. Steller sea lions use terrestrial haulout sites to rest and take refuge. They also gather on well-defined, traditionally used rookeries to pup and breed. These habitats are typically gravel, rocky, or sand beaches; ledges; or rocky reefs (NMFS 2013c).

In southeast Alaska, designated critical habitat for Steller sea lions includes major rookery and haulout sites (i.e., used by more than 200 animals) and associated terrestrial, air, and aquatic zones within 3,000 feet, as well as three large offshore foraging areas (one in the Gulf of Alaska and two in the Bering Sea/Aleutian Islands area). There is no designated critical habitat in the action area. The nearest designated critical habitat is located over 40 miles west of the action area, at Graves Rocks, near the mouth of Cross Sound.

The western stock of Steller sea lions in Alaska was listed as endangered in 1997. Declines in Steller sea lion populations are probably attributable to declines in fish populations due to increasing commercial fisheries in the Gulf of Alaska. Drowning, entanglement in nets, and shooting by fishermen are listed as possible reasons for the Steller sea lion decline.

The action area is located at approximately 135° W longitude, which is over 150 miles east of the 144° W longitude line. For this reason, most Steller sea lions travelling within the waters of Icy Strait and Port Frederick are likely to be members of the Eastern DPS. However, the action area is known to be an area that is used at least occasionally by both Western and Eastern DPS Steller sea lions. For this reason, Western DPS Steller sea lions could potentially be present within the action area. Since no known breeding rookeries are present within the action area, Steller sea lion are considered less likely to be present during the summer months when they return to rookeries to give birth. The current best population estimate for the Eastern DPS is 57,966, while the population estimate for the Western DPS is 52,200 (Allen and Angliss 2013).

4.3 Harbor Seal

Harbor seals range from Baja California, north along the western coasts of the U.S., B.C., and southeast Alaska, west through the GOA, PWS, and the Aleutian Islands, and north in the Bering Sea to Cape Newenham and the Pribilof Islands.

In 2010, the National Marine Fisheries Service and their co-management partners, the Alaska Native Harbor Seal Commission, defined 12 separate stocks of harbor

seals based largely on the genetic structure. Given the genetic samples were not obtained continuously throughout the range, a total evidence approach was used to consider additional factors such as population trends, observed harbor seal movements and traditional Alaska Native use areas in the final designation of stock boundaries. This represents a significant increase in the number of harbor seal stocks from the three stocks (Bering Sea, Gulf of Alaska, Southeast Alaska) previously recognized. Harbor seals that occur within the action area are part of the Glacier Bay/Icy Strait Stock (Allen and Angliss 2013).

Harbor seals are commonly present throughout the waters of Icy Strait and Port Frederick. Harbor seals typically inhabit estuarine and coastal waters, hauling out on rocks, reefs, beaches, and glacial ice flows. They are generally non-migratory, but move locally with the tides, weather, season, food availability, and reproduction. Female harbor seals give birth to a single pup while hauled out on shore or on glacial ice flows. Pups are born from May to mid-July. The mother and pup remain together until weaning occurs at 3–6 weeks (Bishop 1967; Bigg 1969). Little is known about breeding behavior in harbor seals. When molting, which occurs primarily in late August, seals spend the majority of the time hauled out on shore, glacial ice, or other substrates. Harbor seals have also historically been an important subsistence resource for Alaska Natives in SE Alaska (Wolfe et al. 2012). The current best population estimate for the Glacier Bay/Icy Strait stock is 5,042 individuals (Allen and Angliss 2013).

Harbor seals have not been observed hauling out, molting, or pupping at Icy Strait Point. They likely do haulout at least occasionally within the action area.

According to the most recent stock assessment NMFS (Allen and Angliss 2013), harbor seals are not designated as “depleted” under the MMPA nor are they listed as “threatened” or “endangered” under the ESA. Based on currently available data, the level of human-caused mortality and serious injury is not known to exceed the potential biological removal (PBR) level for harbor seals comprise the Glacier Bay/Icy Strait stock, which is calculated at 142 harbor seals per year (Allen and Angliss 2013). Therefore, the Glacier Bay/Icy Strait stock of harbor seals is not classified as a strategic stock.

4.4 Dall’s Porpoise

Dall’s porpoise are only found in the North Pacific and adjacent seas. The stock structure of eastern North Pacific Dall’s porpoise is not adequately understood at this time, but based on patterns of stock differentiation in the western North Pacific, where they have been more intensively studied, it is expected that separate stocks will emerge when data become available (Perrin and Brownell 1994). Based primarily on the population response data and preliminary genetics analyses (Winans and Jones 1988), a delineation between Bering Sea and western North Pacific stocks has been recognized. However, similar data are not available for the

eastern North Pacific, thus one stock of Dall's porpoise is recognized in Alaskan waters. Dall's porpoise along the west coast of the continental U. S. from California to Washington comprise a separate stock (Allen and Angliss 2013).

Dall's porpoise occur throughout Alaska, and in general, are considered to be common throughout their range (Buckland et al. 1993a). Dall's porpoise are documented occasionally within waters of Icy Strait. Gabriele and Lewis (2000) documented 6 Dall's porpoises during a four-year period conducting opportunistic marine mammal surveys in Glacier Bay and Icy Strait. Dall's porpoise was also one of the most frequently sighted species during summer seismic surveys in the central and eastern Gulf of Alaska and southeast Alaska (MacLean and Koski 2005; Hauser and Holst 2009).

The current best population estimate for the Alaskan stock of Dall's porpoise is 83,400 (Allen and Angliss 2013). However, surveys for this stock are greater than 12 years old, and consequently NMFS considers the minimum population estimate to be "unknown", and has also not calculated a Potential Biological Removal (PBR) level for Dall's porpoise (Allen and Angliss 2013). Dall's porpoise are not designated as "depleted" under the MMPA or listed as "threatened" or "endangered" under the Endangered Species Act. The level of human-caused mortality and serious injury is not known to exceed the PBR, which is undetermined as the most recent abundance estimate is more than 8 years old. Because the PBR is undetermined, the level of annual U.S. commercial fishery-related mortality that can be considered insignificant and approaching zero mortality and serious injury rate is unknown. The Alaska stock of Dall's porpoise is not classified as a strategic stock (Allen and Angliss 2013).

4.5 Gray Whale

Gray whales are found primarily in shallow water and usually remain closer to shore than any other large cetacean. Two stocks of gray whales are recognized in the Pacific: the Eastern North Pacific stock and the Western North Pacific stock (Caretta et al. 2013). The eastern gray whale population ranges from the Chukchi and Beaufort seas to the Gulf of California (Rice 1998). Most of the eastern Pacific population makes a round-trip annual migration of more than 18,000 km. From late May to early October, the majority of the population concentrates in the northern and western Bering Sea and in the Chukchi Sea. However, some individuals spend the summer months scattered along the coasts of southeast Alaska, B.C., Washington, Oregon, and northern California.

Gray whales are common along the Gulf of Alaska coast, but rare in the inside waters of southeastern Alaska (Braham 1984). Gabriele and Lewis (2000) documented only a single gray whale during a four-year period conducting opportunistic marine mammal surveys in Glacier Bay and Icy Strait.

The current best population estimate for the Eastern North Pacific stock is 19,126 (Caretta et. al 2013). In 1994, the Eastern North Pacific stock of gray whales was removed from the Endangered Species List as it was no longer considered endangered or threatened under the ESA. NMFS has not designated gray whales as “depleted” under the MMPA. Based on currently available data, the level of human-caused mortality and serious injury is not known to exceed the potential biological removal (PBR) level for Eastern North Pacific gray whales, which is calculated at 558 whales per year (Caretta et. al 2013). Therefore, Eastern North Pacific gray whales are not classified as a strategic stock.

4.6 Harbor Porpoise

The harbor porpoise inhabits temporal, subarctic, and arctic waters. In the eastern North Pacific, harbor porpoises range from Point Barrow, Alaska, to Point Conception, California. Harbor porpoise primarily frequent coastal waters and in the Gulf of Alaska and Southeast Alaska, they occur most frequently in waters less than 100 m deep (Hobbs and Waite 2010). Within the inland waters of Southeast Alaska harbor porpoise distribution is clumped with greatest densities observed in the Glacier Bay/Icy Strait region and near Zarembo and Wrangell Islands and the adjacent waters of Sumner Strait (Dahlheim et al. 2009).

The average density of harbor porpoise in Alaska is generally lower than that reported off the west coast of the continental U.S. However, the waters of Glacier Bay and the adjacent waters of Icy Strait are considered to be an area of relatively high density (Allen and Angliss 2013). Harbor porpoise are regularly observed in Icy Strait.

In Alaska, there are three separate stocks of harbor porpoise: Southeast Alaska, Gulf of Alaska, and Bering Sea. The Southeast Alaska Stock occurs from northern B.C. to Cape Suckling, and the Gulf of Alaska Stock ranges from Cape Suckling to Unimak Pass. The population estimates for the Southeast Alaska stock is 11,146 (Allen and Angliss 2013). However, this abundance estimate is based on surveys conducted between 1993 and 1997(Dahlheim et. al 2000). NMFS has not established a PBR for Southeast Alaska stock harbor porpoise, due to the fact that the available abundance estimates are greater than 8 years old. Similarly, due to the age of the abundance estimates, and due to the fact that the frequency of incidental mortality in commercial fisheries is not known, the Southeast Alaska stock of harbor porpoise is classified as a strategic stock. Preliminary analysis of harbor porpoise trend in Southeast Alaska, as reported in NMFS 2012 marine mammal stock reports, indicated the population declined between 1991 and 2010 (Allen and Angliss 2013). However, a new estimate shows that abundance in 2011 was comparable to those from the early 1990s, suggesting the decline was not as steep as previously thought. Data analysis from a new survey (2012) are underway, and NMFS expects a refined estimate of trends in abundance for Southeast Alaska harbor porpoise will be available next year (Allen and Angliss 2013).

4.7 Killer Whale

The killer whale is cosmopolitan and globally fairly abundant; it has been observed in all oceans of the world (Ford 2002). It is very common in temperate waters and also frequents tropical waters, at least seasonally (Heyning and Dahlheim 1988). High densities of the species occur in high latitudes, especially in areas where prey is abundant. Although resident in some parts of its range, the killer whale can also be transient. Killer whale movements generally appear to follow the distribution of their prey, which includes marine mammals, fish, and squid.

Of eight killer whale stocks currently recognized in the Pacific U.S., four occur in Southeast Alaskan waters: (1) Alaska Residents, from southeast Alaska to the Aleutians and Bering Sea, (2) Northern Residents, from B.C. through parts of southeast Alaska, (3) Gulf of Alaska, Aleutians, and Bering Sea Transients, from PWS through to the Aleutians and Bering Sea, and (4) West Coast Transients, from California through southeast Alaska (Allen and Angliss 2013).

Killer whales occur commonly in the waters of the action area. Since some of the stocks that occur within the action area are resident stocks, killer whales could potentially occur during all months of the year.

The current best abundance estimate for the North Pacific Alaska Resident stock of killer whales is 2,347 (Allen and Angliss 2013). This stock of killer whales is not designated as “depleted” under the MMPA nor are they listed as “threatened” or “endangered” under the ESA. Based on currently available data, the level of human-caused mortality and serious injury is not known to exceed the potential biological removal (PBR) level for this stock, which is calculated at 23.4 individuals (Allen and Angliss 2013). Therefore, the North Pacific Alaska Resident stock of killer whales is not classified as a strategic stock.

The current best abundance estimate for the Northern Resident stock of killer whales is 261 individuals (Allen and Angliss 2013). This stock of killer whales is not designated as “depleted” under the MMPA nor are they listed as “threatened” or “endangered” under the ESA. Based on currently available data, the level of human-caused mortality and serious injury is not known to exceed the potential biological removal (PBR) level for this stock, which is calculated at 2.0 individuals (Allen and Angliss 2013). Therefore, the Northern Resident stock of killer whales is not classified as a strategic stock.

The current best abundance estimate for the Gulf of Alaska, Aleutian Islands, and Bering Sea transient stock of killer whales is 587 individuals (Allen and Angliss 2013). This stock of killer whales is not designated as “depleted” under the MMPA nor are they listed as “threatened” or “endangered” under the ESA. Based on currently available data, the level of human-caused mortality and serious injury is not known to exceed the potential biological removal (PBR) level for this stock,

which is calculated at 5.9 individuals (Allen and Angliss 2013). Therefore, the Gulf of Alaska, Aleutian Islands, and Bering Sea transient stock of killer whales is not classified as a strategic stock.

The current best abundance estimate for the West Coast transient stock of killer whales is 243 individuals (Allen and Angliss 2013). This stock of killer whales is not designated as “depleted” under the MMPA nor are they listed as “threatened” or “endangered” under the ESA. Based on currently available data, the level of human-caused mortality and serious injury is not known to exceed the potential biological removal (PBR) level for this stock, which is calculated at 2.4 individuals (Allen and Angliss 2013). Therefore, the West Coast transient stock of killer whales is not classified as a strategic stock.

4.8 Minke Whale

The minke whale has a cosmopolitan distribution that spans polar, temperate, and tropical regions (Jefferson et al. 2008). In the Northern Hemisphere, minke whales are usually seen in coastal areas, but can also be seen in pelagic waters during northward migrations in spring and summer, and southward migration in autumn. In the North Pacific, the summer range of the minke whale extends to the Chukchi Sea; in the winter, the whales move farther south to within 2° of the equator (Perrin and Brownell 2002).

The International Whaling Commission (IWC) recognizes three stocks of minke whales in the North Pacific: the Sea of Japan/East China Sea, the rest of the western Pacific west of 180°N, and the remainder of the Pacific (Donovan 1991). For management purposes in Pacific U.S. waters, three stocks of minke whales are recognized — the Alaska, Hawaii, and California/Oregon/ Washington stocks (Allen and Angliss 2013). Minke whales that could potentially occur within the action area are members of the Alaska stock.

Minke whales are relatively common in the Bering and Chukchi seas and in the inshore waters of the Gulf of Alaska. They are not considered abundant in any other part of the eastern Pacific, but they are seen occasionally around Glacier Bay in southeast Alaska and in central Icy Strait. Gabriele and Lewis (2000) documented a total of 29 minke whales during a four-year period conducting opportunistic marine mammal surveys in Glacier Bay and Icy Strait.

The current best abundance estimate for the Alaska stock of minke whales is 1,233 individuals (Allen and Angliss 2013). This stock of minke whales is not designated as “depleted” under the MMPA nor are they listed as “threatened” or “endangered” under the ESA. The greatest uncertainty regarding the status of the Alaska minke whale stock has to do with the uncertainty pertaining to the stock structure of this species in the eastern North Pacific (Allen and Angliss 2013). Because minke whales are considered common in the waters off Alaska and because the number of human-

related removals is currently thought to be minimal, this stock is currently presumed to not be a strategic stock (Allen and Angliss 2013). Reliable estimates of the minimum population size, population trends, PBR, and status of the stock relative to optimum sustainable population size are currently not available.

4.9 Pacific White-Sided Dolphin

The Pacific white-sided dolphin is found throughout the temperate North Pacific Ocean, north of the coasts of Japan and Baja California, Mexico. In the eastern North Pacific the species occurs from the southern Gulf of California, north to the Gulf of Alaska, west to Amchitka in the Aleutian Islands, and is rarely encountered in the southern Bering Sea. The species is common both on the high seas and along the continental margins, and animals are known to enter the inshore passes of Alaska, British Columbia, and Washington (Ferrero and Walker 1996).

Two management stocks of Pacific white-sided dolphin are currently recognized: 1) the California/Oregon/ Washington stock, and 2) the North Pacific stock. Pacific white sided dolphins that could potentially be present within the action area would be members of the North Pacific stock. Pacific white-sided dolphin are not documented frequently in the waters of Icy Strait, but they could potentially be present during summer months when their range extends northward into the Gulf of Alaska.

The current best abundance estimate for the North Pacific stock of Pacific white-sided dolphin is 26,880 individuals (Allen and Angliss 2013). However, this estimate is based on survey data that is greater than 8 years old. As a result, NMFS reports the minimum population estimate as currently unknown (Allen and Angliss 2013). This stock of Pacific white-sided dolphin is not designated as “depleted” under the MMPA nor are they listed as “threatened” or “endangered” under the ESA. The level of human-caused mortality and serious injury is not known to exceed the PBR, which is undetermined as the most recent abundance estimate is more than 8 years old. Because the PBR is undetermined, the level of annual U.S. commercial fishery-related mortality that can be considered insignificant and approaching zero mortality and serious injury rate is unknown. The Alaska stock of Pacific white-sided dolphins is not classified as a strategic stock, but reliable estimates of the minimum population size, population trends, PBR, and status of the stock relative to optimum sustainable population size are currently not available (Allen and Angliss 2013).

5.0 TYPE OF INCIDENTAL TAKE AUTHORIZATION REQUESTED

The type of incidental taking authorization that is being requested (i.e., takes by harassment only, takes by harassment, injury and/or death), and the method of incidental taking.

The MMPA prohibits the “take” of marine mammals unless the take is exempted or authorized. The MMPA defines (50 CFR, Part 216, Subpart A, Section 216.3-

Definitions) take as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill any marine mammal.” The MMPA further defines “harassment” as:

... any act of pursuit, torment, or annoyance which (Level A Harassment) has the potential to injure a marine mammal or marine mammal stock in the wild; or, (Level B Harassment) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering....⁷

5.1 Take Authorization Request

Under Section 101 (a)(5)(D) of the MMPA, the project requests an IHA for takes by behavioral harassment (Level B harassment) during pile driving operations associated with the construction of the proposed project. The project requests an IHA for incidental take of marine mammals described within this application for 1 year, to be issued in January 2015, but with an effective date of April 1, 2015. Pile installation activities are expected to be completed in 40 hours over 16 to 20 days in a 4-month period.

5.2 Method of Incidental Taking

The project will require the installation of a total of approximately 104 steel pipe piles of varying diameters below the MHHW. Piles that will be used include 24-inch, 30-inch, 42-inch, and 60-inch steel pipe piles. Pile installation and proofing will be conducted with an impact hammer. Impact installation of 60-inch steel pipe piles can generate maximum underwater noise levels of approximately 210 dB_{PEAK}, 195 dB_{RMS}, and 185 dB_{SEL} (Caltrans 2012).

Temporarily elevated underwater and terrestrial noise during impact pile driving has the potential to result in Level B harassment of marine mammals which may be present during construction. Level A harassment (harassment resulting in injury) is not expected to occur as a result of the proposed action, as no Level A harassment threshold has been established for terrestrial noise, and the marine mammal monitoring plan (Appendix B) will reduce the potential for exposure to levels of underwater noise above the injury threshold established by NMFS. Table 4 and

Table 5 show the disturbance and injury thresholds that NMFS has established for underwater and terrestrial noise for Level A and B take.

⁷ NOAA Fisheries Office of Protected Resources website, <http://www.nmfs.noaa.gov/pr/glossary.htm#h>

Table 4. Underwater Injury and Disturbance Threshold Decibel Levels for Marine Mammals

Criterion	Criterion Definition	Threshold*
Level A Harassment	PTS (injury) conservatively based on TTS**	190 dB RMS for pinnipeds 180 dB RMS for cetaceans
Level B Harassment	Behavioral disruption for impulsive noise (e.g., impact pile driving)	160 dB RMS
Level B Harassment	Behavioral disruption for non-pulse noise (e.g., vibratory pile driving, drilling)	120*** dB RMS

*All decibel levels referenced to 1 micropascal (re: 1 μ Pa). Note all thresholds are based on root mean square (RMS) levels

** PTS=Permanent Threshold Shift; TTS=Temporary Threshold Shift

***The 120 dB threshold may be slightly adjusted if background noise levels are at or above this level.

Table 5. Terrestrial Injury and Disturbance Threshold Decibel Levels for Pinnipeds

Criterion	Criterion Definition	Threshold*
Level A Harassment	PTS (injury) conservatively based on TTS**	None established
Level B Harassment	Behavioral disruption for harbor seals	90 dB RMS
Level B Harassment	Behavioral disruption for non-harbor seal pinnipeds	100 dB RMS

*All decibel levels referenced to 20 micropascal (re: 20 μ Pa). Note all thresholds are based on RMS levels.

** PTS=Permanent Threshold Shift; TTS=Temporary Threshold Shift

5.2.1 Underwater Noise

Based on the results of the noise attenuation analysis for this project, it has been determined that the 190 dBRMS Level A harassment (injury) threshold for underwater noise for pinniped species could be exceeded at a distance of up to approximately 22 meters during impact pile driving activities, and the 180 dBRMS Level A harassment (injury) threshold for cetacean species could be exceeded at a distance of up to approximately 100 meters during impact pile driving activities. Additionally, the 160 dB RMS Level B harassment (behavioral disruption) for underwater noise for pinniped and cetacean species could be exceeded at a distance of up to approximately 2,150 meters during impact pile driving.

In order to avoid injury of marine mammals within the action area, the area within approximately 100 meters of pile driving activity will be monitored and maintained as marine mammal buffer area in which pile installation, will not commence or will be suspended temporarily if any marine mammals are observed within the area of potential disturbance. A marine mammal monitoring plan is included as Appendix B of this document.

The area within the Level B harassment threshold (the area between approximately 100 and 2,150 meters from pile driving activity) also will be monitored according to the monitoring plan (Appendix B). Marine mammal presence within this Level B harassment zone, if any, will be monitored, but pile driving activity will not be stopped if marine mammals are found to be present. Any marine mammal documented within the Level B harassment zone during impact driving would constitute a Level B take (harassment), and will be recorded and reported as such.

5.2.2 Terrestrial Noise

The loudest piece of equipment to be used at the site is an impact pile driver, which typically produce peak terrestrial noise levels of approximately 110 dB peak (WSDOT 2014). The Level B harassment threshold for harbor seals is 90 dB RMS and for non-harbor seal pinnipeds is 100 dB RMS. A terrestrial noise attenuation analysis was performed using the Practical Spreading Loss (PSL) model (WSDOT 2014). The results of the analysis indicated that the 100 dB RMS threshold for non-harbor seal pinnipeds could be exceeded out to a distance of approximately 38 meters, while the 90 dB RMS threshold for harbor seals could be exceeded out to a distance of approximately 97 meters. Since this area is entirely within the area that would be maintained as a marine mammal buffer area, no marine mammals would be exposed to any terrestrial noise levels above the established Level B harassment threshold.

6.0 NUMBER OF MARINE MAMMALS THAT MAY BE AFFECTED

By age, sex, and reproductive condition (if possible), the number of marine mammals (by species) that may be taken by each type of taking identified in Section 5, and the number of times such takings by each type of taking are likely to occur.

6.1 Humpback Whale

The National Park Service has monitored humpback whales in the bay every year since 1985 to document the number of individuals, residence times, spatial and temporal distribution, feeding behavior and interactions with vessels (Neilson et. al 2013). This monitoring program covers most of Glacier Bay and Icy Strait. Results of 2012 monitoring documented a total of 208 individual humpback whales (including 16 mother-calf pairs) in Glacier Bay and adjacent waters of Icy Strait in the 3-month peak survey period between June and August. Of these 208 whales, 152 were documented as remaining in the vicinity for a period greater than 20 days (Neilson et. al 2013).

Since pile driving activities could potentially be conducted during any time of the year, the worst case estimate would be that up to 208 individual Level B takes of humpback whale could occur as a result of the proposed action. These would mostly be adult males and females, but up to approximately 8 percent (17) takes could be of rearing calves.

This represents a very conservative estimate of the maximum number of humpback whales that could potentially be exposed to elevated underwater noise. The actual number of takes would be expected to be far less, as the entire regional population of humpback whales would not be expected to be present within the immediate vicinity of the project while pile driving activities are being conducted. Nevertheless, in order to make a worst case estimate of the maximum number of potential takes, this request is for up to a maximum of 208 level B takes of humpback whale. This represents less than 1% of the current best population estimate for the Central North Pacific stock (21,800) (Allen and Angliss 2013).

6.2 Steller Sea Lion

The Western DPS of Steller sea lions includes all animals at, and west of, Cape Suckling, Alaska (144°W). The Eastern DPS of Steller sea lions are those animals east of this longitudinal boundary. While most of the Steller sea lions present in the waters of Icy Strait are likely members of the eastern DPS, western DPS Steller sea lions are also observed in waters of Icy Strait.

There is little recent data available regarding the population density or abundance of Steller sea lions in Icy Strait or the vicinity. The National Park Service has, however, published data from opportunistic marine mammal surveys conducted in Glacier Bay and Icy Strait between 1994 and 1999 (Gabriele and Lewis 2000). These data provide information regarding opportunistic sightings of marine mammals of several species that were recorded during humpback whale surveys conducted between June and August of each monitoring year.

The results of the National Park Service opportunistic surveys documented that the number of Steller sea lions sightings remained consistent at roughly 40 sightings during a three month period between June and August each year. Using this number as a worst case estimate of the number of Steller sea lions that could potentially be present during pile driving, the project could potentially result in up to a maximum of 40 Level B takes of Steller sea lion during pile activities. Individuals taken would be expected to be a mix of solitary adult males and females. Juvenile Steller sea lions would not be expected to be exposed, as there are no breeding rookeries within the vicinity.

6.3 Harbor Seal

Harbor seals are commonly present throughout the waters of Icy Strait and Port Frederick. They are found in all water depths, but tend to congregate in the near-shore waters of both Glacier Bay and Icy Strait. As with sea lions, they are frequently solitary when in the water, but when hauled out they commonly occur in larger groups of 5-50 animals (Gabriele and Lewis 2000).

The results of the National Park Service opportunistic surveys conducted in Glacier Bay and Icy Strait between 1994 and 1999, documented a total of 1,057 harbor seal sightings (including approximately 648 individuals) during a three month period between June and August each year. The maximum number of sightings in any 3 month period was recorded in 1997, when 359 sightings were documented.

Using this number as a worst case estimate of the number of harbor seals that could potentially be present in the vicinity during pile driving, the project could result in up to a maximum of 359 Level B takes of harbor seals. Individuals taken would be expected to be a mix of solitary adult males and females. Juvenile harbor seals would not be expected to be exposed, as there are no documented breeding rookeries

within the area that could potentially be exposed to noise levels above the Level B harassment threshold.

6.4 Dall's Porpoise

There is little comprehensive population density data regarding Dall's porpoise presence in Icy Strait and Port Frederick. As with other marine mammal species, the best available source of data was taken from opportunistic marine mammal surveys conducted in Glacier Bay and Icy Strait between 1994 and 1999 (Gabriele and Lewis 2000). This data indicates that Dall's porpoise are documented occasionally within waters of Icy Strait.

Gabriele and Lewis (2000) documented a total of 6 Dall's porpoises during a four-year period conducting opportunistic marine mammal surveys in Glacier Bay and Icy Strait. All of these sightings were from waters of Icy Strait. In 2 of 4 years, no Dall's porpoises were sighted, while in 1999, a total of 12 Dall's porpoise sightings were recorded (on a total of 2 occasions). Using this number as a worst case estimate, the project could result in up to a maximum of 12 Level B takes of Dall's porpoise. Since Dall's porpoises in the eastern North Pacific typically reside year-round, there is a potential that individuals exposed to be Level B take could be equally likely to be adult or juvenile, male or female.

6.5 Gray Whale

Gray whales are common along the Gulf of Alaska coast, but rare in the inside waters of southeastern Alaska (Braham 1984). Gabriele and Lewis (2000) documented only a single gray whale during a four-year period conducting opportunistic marine mammal surveys in Glacier Bay and Icy Strait.

Using this number as a worst case estimate, the project could result in up to 1 Level B take of gray whale. Because whales of the Eastern North Pacific Stock migrate to the southern end of their range for breeding and calving, it is assumed that any individual gray whale that were to be exposed to a Level B harassment, would be a solitary adult male or female.

6.6 Harbor Porpoise

The waters of Glacier Bay and the adjacent waters of Icy Strait are considered to be an area of relatively high harbor porpoise density (Allen and Angliss 2013). Harbor porpoises were one of the most frequently documented marine mammal species during opportunistic marine mammal surveys conducted in Glacier Bay and Icy Strait between 1994 and 1999 (Gabriele and Lewis 2000). The number of sightings of harbor porpoise during the monitoring period ranged between 378 and 137 for the three month period. The data also indicate a trend for decreasing numbers of harbor porpoise in the vicinity.

Using the worst case estimate of harbor porpoise density, it is possible that up to 378 harbor porpoises could be present in the vicinity during the time when impact pile

driving is being conducted, and could be potentially exposed to level B harassment. This would represent 378 Level B takes of harbor porpoise.

6.7 Killer Whale

Killer whales occur commonly in the waters of the action area, and could include members of one or more of four designated stocks that occur in Southeast Alaskan waters: (1) Alaska Residents, from southeast Alaska to the Aleutians and Bering Sea, (2) Northern Residents, from B.C. through parts of southeast Alaska, (3) Gulf of Alaska, Aleutians, and Bering Sea Transients, from PWS through to the Aleutians and Bering Sea, and (4) West Coast Transients, from California through southeast Alaska (Allen and Angliss 2013).

As with other marine mammal species, the best available source of data was taken from opportunistic marine mammal surveys conducted in Glacier Bay and Icy Strait between 1994 and 1999 (Gabriele and Lewis 2000). This data indicates that killer whale are documented occasionally within waters of Icy Strait. The number of sightings of killer whales during the monitoring period ranged between 36 and 88 for the three month period. Using this number as a worst case estimate, the project could result in up to 88 Level B takes of killer whale.

Since two of the four stocks that could potentially occur in the vicinity are resident stocks, there is a potential that individuals exposed to be Level B take could be equally likely to be adult or juvenile, male or female. In addition, since each of the four stocks have the potential to occur within the waters of the action area, it is possible that all 88 takes could be distributed among the individual stocks, or they could all be associated with a single stock.

6.8 Minke Whale

Minke whales are relatively common in the Bering and Chukchi seas and in the inshore waters of the Gulf of Alaska. They are not considered abundant in any other part of the eastern Pacific, but they are seen occasionally around Glacier Bay in southeast Alaska and in central Icy Strait. Gabriele and Lewis (2000) documented a total of 29 minke whales during a four-year period conducting opportunistic marine mammal surveys in Glacier Bay and Icy Strait. The maximum number of individual sightings in any given year was 8 minke whales.

Using this number as a worst case estimate, it is estimated that the project could result in up to a maximum of 8 Level B takes of minke whale. Minke whales are most commonly found in coastal waters during spring migrations, tending to move to offshore waters in the winter. Breeding typically occurs in the winter, though in some regions, breeding may occur year-round. For this reason, there is a potential that individuals exposed to be Level B take could be equally likely to be adult or juvenile, male or female.

6.9 Pacific White-Sided Dolphin

Pacific white-sided dolphins are not documented frequently in the waters of Icy Strait, but they could potentially be present during summer months when their range extends northward into the Gulf of Alaska. Gabriele and Lewis (2000) does not document any Pacific white-sided dolphins during a four-year period conducting opportunistic marine mammal surveys in Glacier Bay and Icy Strait.

However, since there is a possibility that Pacific white-sided dolphins could potentially occur, it is estimated that the project could result in up to 1 Level B take of Pacific white-sided dolphins. Dolphins are not known to breed in waters of Southeast Alaska, and it is assumed therefore that any individual Pacific white-sided dolphin that were to be exposed to a Level B harassment, would be a solitary adult male or female.

7.0 ANTICIPATED IMPACT ON SPECIES OR STOCKS

The anticipated impact of the activity upon the species or stock of marine mammals.

The potential impacts of the proposed project on marine mammals include noise, water quality, and direct habitat effects associated with construction of the marine structures, and the potential for an increase in the number of vessel interactions as a result of operation. Of these potential effects, temporarily elevated noise from impact pile driving is the only impact that could result in take. A more detailed effects analysis follows.

7.1 Underwater Noise

As discussed in Section 5.2.1, underwater noise during pile driving may exceed the established injury and disturbance thresholds for marine mammals. Because there is a chance that marine mammals may be present in the action area, the modeled injury threshold exceedance areas will be monitored during pile driving according to the monitoring plan (Appendix B).

The distance to the injury threshold for pinnipeds (190 dBRMS) will be monitored during pile driving according to the protocol identified in the marine mammal monitoring plan (Appendix C). The area within 100 meters of pile driving activity will be maintained as a marine mammal buffer zone, in which impact pile driving will be shut down immediately if any marine mammal enters, thus reducing the possibility of any marine mammal being exposed to injury level harassment.

The area within the Level B harassment threshold (the area between approximately 100 and 2,150 meters from pile driving activity) also will be monitored according to the monitoring plan (Appendix B). Marine mammal presence within this Level B harassment zone, if any, will be monitored, but pile driving activity will not be stopped if marine mammals are found to be present. Any marine mammal documented within the Level B harassment zone during impact driving could be

exposed to levels of underwater noise that exceed established disturbance threshold, but would not be exposed to injurious levels of underwater noise.

Disturbance from temporary exposure to levels of underwater noise above the disturbance threshold is expected to be limited to minor behavioral modifications such as dispersion from, or more rapid migration through, the action area. Long-term, permanent effects, such as long-term avoidance of action area or any direct injury or mortality, are not anticipated.

7.2 Terrestrial Noise

As discussed in Section 5.2.2, temporarily elevated terrestrial noise levels during pile driving also have the potential to exceed the established disturbance thresholds for marine mammals within certain portions of the action area. No injury threshold has been established for terrestrial noise for pinnipeds.

The results of the terrestrial noise attenuation analysis conducted for this project indicate that the 100 dB RMS threshold for non-harbor seal pinnipeds could be exceeded out to a distance of approximately 38 meters, while the 90 dB RMS threshold for harbor seals could be exceeded out to a distance of approximately 97 meters. Because this area is entirely within the area that would be maintained as a marine mammal buffer area, no marine mammals would be exposed to any terrestrial noise levels above the established Level B harassment threshold. As a result, marine mammals that could potentially be present within the action area are not expected to be significantly affected by terrestrial noise.

7.3 Water Quality

Pile installation may temporarily increase turbidity resulting from suspended sediments. Any increases would be temporary, localized, and minimal. All project construction will be in compliance with Alaska State water quality standards. The state of Alaska has established a regulatory framework for mixing zones in Alaska Administrative Code (AAC) 18 AAC 70.240-270. These regulations are used for Alaska Pollutant Discharge Elimination System (APDES) permits and state certification, under Section 401 of the Clean Water Act, of federally issued permits. For marine and estuarine waters, the cumulative linear length of all mixing zones intersected on any given cross section of an estuary, inlet, cove, channel, or other marine water may not exceed 10 percent of the total length of that cross section. Port Frederick is approximately 10,000 feet across at its narrowest point within the action area, and as such the maximum mixing zone established for temporary turbidity exceedance would be approximately 1,000 feet.

Natural tidal currents and flow patterns in the waters of Icy Strait and Port Frederick likely routinely disturb sediments. High volume tidal events can result in hydraulic forces that re-suspend benthic sediments, temporarily elevating turbidity locally. Any temporary increase in turbidity as a result of the proposed action is not

anticipated to measurably exceed levels caused by these normal, natural periodic increases.

Additionally, during any in-water construction activities there is a risk of localized and temporary water quality impairments from the unintentional release of machinery fluids. All necessary actions will be taken to avoid such a discharge, and in the event of a spill, containment and cleanup would take precedence over continued work. Any potential for construction material or debris to enter the water will be managed by strictly adhering to above-water and in-water best management practices (BMPs). The contractor will be required to provide and implement impact minimization measures and BMPs including the preparation of a Spill Prevention, Countermeasure and Control (SPCC) plan. As part of this plan, a floating containment boom will be deployed during project implementation, which will contain any debris that enters the waterway during construction activities. Additional BMPs have been included to avoid any potential impacts from hazardous materials. These BMPs include inspecting construction equipment daily to ensure that there are no leaks of hydraulic fluids, fuel, lubricants or other petroleum products and locating temporary material and equipment staging areas above the MHHW (upland) of the action area waterbody and outside environmentally sensitive areas.

7.4 Direct Habitat Impacts

The proposed new facility will result in direct impacts to aquatic habitat at the site, as a result of pile installation and overwater coverage. The new structure will result in a total of approximately 39,490 square feet of overwater shading associated with the size and configuration of the replacement structure. Overwater shading has the potential to reduce overall aquatic habitat suitability for some fish species by impacting primary productivity, and can also potentially affect benthic biotic communities in shallow water habitats.

Benthic habitat communities can also be directly affected by installation of new piling, which displaces seafloor habitat. The piles associated with the proposed project represent a total of approximately 618 square feet of benthic habitat impact.

The direct habitat impacts from overwater shading and pile installation are not expected to affect marine mammals significantly. The size and placement of the structures have been designed in such a way to minimize the extent of any potential effect to marine mammals. The structure has been designed as a floating structure, rather than being pile supported. This greatly reduces the number of piles necessary to construct the project, and reduces the impact to benthic habitats at the site. The structure has also been designed and located such that it will not affect migratory patterns or movement through the action area for any marine mammal species.

In addition, the proposed facility will result in a reduction in impacts to benthic habitat associated with operation. Currently, ships calling on the facility must anchor off shore, and passengers are lightered (ferried in smaller boats) onto shore. Most ships calling on the new facility will moor directly at the dock, and will not need to drop anchors. This will result in a long-term net reduction in recurring impacts to benthic habitats at the site.

To provide additional mitigation for direct habitat impacts to benthic communities and aquatic habitats, the project proposes to remove approximately 60 treated timber pile stubs from below the MHHW line at the site (Sheet 22). This proposed aquatic mitigation will remove a source of creosote from the aquatic environment, and will also restore shallow water benthic habitats at the site. The resulting water quality benefit and benthic habitat restoration will be sufficient to further offset any impacts to aquatic habitats at the site.

While the new overwater coverage and new benthic habitat impact associated with pile footprints have the potential to result in minor effects to aquatic habitat conditions locally, these impacts have been minimized to the extent practicable, mitigated for appropriately, and are not expected to result in any measurable or significant adverse effects to marine mammals.

7.5 Vessel Interactions

An analysis was made in the biological evaluation (BE) (BergerABAM 2014) regarding the project's potential to result in increased vessel traffic at the site as a result of proposed improvements. The site operates as a port of call for cruise ships, and the proposed action could potentially result in an increase in the number of ships that would call on the facility. This could result in an increased potential for vessel interactions including collisions.

Responses of whales and pinnipeds to vessel traffic can include behavioral changes to disturbance, including greater variability in the dive, surfacing, and respiration patterns; changes in vocalizations; and changes in swimming speed or direction (NRC 2003). Icy Strait and Port Frederick are busy thoroughfares for commercial and recreational ship traffic, including existing cruise ship traffic to Icy Strait Point; therefore, humpback whales and Steller sea lions in this area are already exposed to ship noise and general disturbance from vessels. All cruise ships calling on the facility would need to adhere to established NMFS guidelines for approaching marine mammals (66 FR 29502); therefore, the potential for increased vessel interaction or collisions associated with the proposed action is expected to be insignificant and discountable.

There will also be a temporary and localized increase in vessel traffic during construction. A maximum of three work barges will be present at any time during the in-water and over water work. The barges will be located near each other where

construction is occurring. Additionally, the floating pier will be tugged into position prior to installation. Construction-related vessel interactions are not expected to result in measurable or significant effects. A marine mammal monitoring plan will be implemented during pile installation, and work barges would be stationary during most construction operations. There is a small potential for vessel interactions during movement of the floating pier to the site, but this transport would occur during a single event and would also occur to established NMFS guidelines for approaching marine mammals (66 FR 29502).

The proposed action will also indirectly result in a reduction in the number of small vessel interactions, as the new facility will eliminate the need for passengers to be lightered to shore in small vessels. Ships calling on the new facility will moor directly to the dock, and passengers will have direct access to shore from the dock. This will result in the elimination of over 100 small vessel trips per day when a cruise ship is docked. This will reduce a recurring source of noise and disturbance for marine mammals in the project vicinity.

8.0 ANTICIPATED IMPACT ON SUBSISTENCE

The anticipated impact of the activity on the availability of the species or stocks of marine mammals for subsistence uses.

Both the ESA and the MMPA contain provisions that allow coastal Alaska natives to harvest marine mammals for subsistence purposes. The subsistence harvesting of foods and other resources has been important to the Huna people for centuries and remains a vital force for contemporary Hoonah residents (Schroeder and Kookesh 1990). Some families rely heavily on the consumption of traditional and customary resources for survival, whereas others use them to supplement their income from wage-based employment. In addition, the harvesting, preparation, and consumption of foods and resources constitute an important part of the community's cultural heritage (Cervený 2007). Residents harvest many resources, including deer, otter, seals, salmon, saltwater fish, waterfowl, shellfish, seaweed, berries, and other forest resources.

During intensive field research conducted in 2006-2007, Hoonah residents were found to have relied on subsistence harvests for much of the food that they used, harvesting an average of 209 pounds per capita, and using 234 pounds per capita of fish, wildlife, and plant resources (Schroeder and Kookesh 1990). Salmon and other fish accounted for 41 percent of the subsistence food harvest, while deer accounted for approximately 25 percent. Seals, marine invertebrates, and seaweeds were also determined to be important subsistence resources (Schroeder and Kookesh 1990).

Harbor seals are the primary marine mammal species hunted for subsistence purposes in southeast Alaska (Schroeder and Kookesh 1990, Wolfe et. al. 2012). In 2012, hunters in Southeast Alaska took an estimated 595 harbor seals for subsistence

uses (Wolfe et al. 2012). Seals were taken during all months of the year, with peaks in takes in March, May, and October, and with the lowest takes in December, January, April and June.

Currently, most hunters of harbor seals report that sea lions are left alone, and overall, sea lion harvests have been relatively few in Southeast Alaska in recent decades (Wolfe et. al. 2012). However, sea lions are still hunted for subsistence purposes. In 2012, the Hoonah region was one of only two regions (the other being Sitka) in which a Steller sea lion was taken for subsistence purposes (Wolfe et. al 2012). A total of 7 Steller sea lions were reported as taken from the Hoonah region for subsistence purposes in 2012 (Wolfe et. al 2012).

There is little published information available regarding specific hunting locations. Discussions with NPS harbor seal biologists and AKDF&G subsistence hunting staff did not yield any information regarding specific known hunting locations. Informal discussions with Icy Strait Point staff indicate that there is no subsistence hunting at or in the vicinity of the site, and that the nearest known minor hunting areas are at Eagle Point and Glen Cove in Icy Strait.

The proposed action will not result in any injury to, or mortality of, any marine mammals. Take of marine mammals will be limited to temporary exposure to levels of underwater noise above established disturbance thresholds. The biological response to these exposures, should they occur, is expected to be limited to minor, temporary, behavioral modifications such as dispersion from, or more rapid migration through, the action area. Long-term, permanent effects, such as long-term avoidance of action area or any direct injury or mortality, are not anticipated. It is concluded that the proposed action will have no impact on the availability of any marine mammal species or stocks for subsistence uses.

9.0 ANTICIPATED IMPACT ON HABITAT

The anticipated impact of the activity upon the habitat of the marine mammal populations, and the likelihood of restoration of the affected habitat.

Impacts to marine mammal habitat as a result of the proposed action will be limited to temporary noise impacts during pile driving, temporary water quality impacts from localized increased turbidity, and direct habitat impacts resulting from overwater shading and substrate disturbance. As described in Section 7, temporary noise and water quality impacts have been minimized to the greatest extent possible through impact minimization measures and implementation of BMPs, and are not expected to affect marine mammal habitat within the action area significantly.

Permanent direct habitat impacts associated with pile placement and overwater shading are not expected to significantly affect marine mammal habitat. The size and placement of the structures have been designed in such a way to minimize the extent

of any potential effect to ESA-listed species. The structure has been designed as a floating structure, rather than being pile supported. This greatly reduces the number of piles necessary to construct the project, and reduces the impact to benthic habitats at the site. The structure has also been designed and located such that it will not significantly affect migratory patterns or movement through the action area for any marine mammal species.

The proposed facility will result in a reduction in impacts to benthic habitat associated with operation. Currently, ships calling on the facility must anchor off shore, and passengers are lightered (ferried in smaller boats) onto shore. Most ships calling on the new facility will moor directly at the dock, and will not need to drop anchors. This will result in a long-term net reduction in recurring impacts to benthic habitats at the site. The elimination of cruise ship anchoring will reduce benthic impacts by an average of approximately 13,000 square feet (0.3 acre) annually. This will mitigate the unavoidable benthic impacts (0.02 acre) resulting from pile installation associated with the project.

To provide additional mitigation for direct habitat impacts to benthic communities and aquatic habitats, the project proposes to remove approximately 1-ton of debris and garbage from the west shoreline of Icy Strait and the shore of Halibut Island. The proposed shoreline and intertidal debris removal will remove potential sources of contamination (e.g. derelict boats, oil cans, etc.) and debris that could negatively affect water quality, and that could also endanger marine mammals and other aquatic life if it is remobilized by tidal surges or storms. The proposed debris removal will return the shoreline and intertidal areas in these locations to their natural state by removing obstacles to shorebirds and marine animals that may visit the shore in these areas. The debris consists of derelict boats, log booms and chains, steel cables, garbage (plastic bottles, pieces of foam, etc.), timber floats, and other derelict timber structures. The approximate areal extent of the debris field is shown on Sheet 23. The resulting water quality benefit and intertidal habitat restoration will be sufficient to further offset any impacts to aquatic habitats at the site.

While the new overwater coverage and new benthic habitat impact associated with pile footprints have the potential to result in minor effects to aquatic habitat conditions locally, these impacts are not expected to result in any measurable or significant adverse effects to marine mammals.

10.0 ANTICIPATED IMPACT OF LOSS OR MODIFICATION OF HABITAT

The anticipated impact of the loss or modification of the habitat on the marine mammal populations involved.

Temporary impacts to marine mammal habitat related to temporarily elevated turbidity levels during pile installation activities are not expected to result in any measurable or significant impacts to the marine mammal populations. Temporary

effects to marine mammal habitat have been minimized through the implementation of BMPs and impact minimization measures, and will temporary water quality impacts during construction will not have any significant impact on any marine mammal populations

Similarly, the direct habitat impacts associated with overwater shading and with the habitat lost as a result of pile placement for the new in-water structures are expected to be insignificant. The new structures will not impede migration through the action area significantly, nor will their placement result in any functional changes in the composition of prey or predator species. Proposed impact minimization and mitigation measures including the elimination of cruise ship anchoring, in combination with proposed debris removal along the west shoreline of Icy Strait and Halibut Island, will restore benthic habitat and improve water quality conditions locally, and will offset any impacts to aquatic habitats at the site. Direct habitat impacts that will result from the proposed action, therefore, will not result in any measurable or significant adverse effects on the marine mammal populations discussed in this document.

Temporarily elevated underwater noise levels during pile driving will result in portions of the action area being temporarily less suited to marine mammal use, and does have the potential to result in Level B take as described in Section 5. These temporary impacts to habitat associated with underwater noise levels will not have a significant impact on any marine mammal populations Level A take will not occur, as a result of the implementation of the marine mammal monitoring protocol attached as Appendix B.

11.0 MITIGATION MEASURES

The availability and feasibility (economic and technological), methods, and manner of conducting such activity or means of effecting the least practicable impact upon affected species or stock, their habitat, and of their availability for subsistence uses, paying particular attention to rookeries, mating grounds, and areas of similar significance.

The proposed action includes the following impact avoidance and minimization measures to avoid and minimize the potential for adverse environmental effects. General impact avoidance and minimization measures include those listed below.

- The project design uses a floating pier construction, which minimizes the number of piles needed in association with the cruise ship berth, as compared to a fixed pier. A pile-supported berth of similar design would require up to 200 additional piling. The floating pontoon design effectively minimizes the amount of benthic impact resulting from pile installation associated with the project.
- The completed project will reduce noise and in-water disturbances associated with current lightering operations. The direct access to the shore offered by the proposed berth will eliminate over 100 small vessel round trips transporting

passengers between the cruise ship and lightering dock per day during the summer months of cruise season. This will greatly reduce fuel use, emissions and noise associated with small vessels servicing the cruise ship passengers.

- The floating pier design allows the cruise ships to tie off at the pier without dropping anchor. This will eliminate approximately 80 square feet benthic impact from the anchor (typically one anchor, 8 feet by 10 feet) and a minimum of 100 square feet of benthic impact from the anchor chain (100 feet in length by 1 foot wide) each time a cruise ship visits the site. There are approximately 72 cruise ship visits per year so that the project will eliminate approximately 13,000 square feet of benthic habitat disturbance each year. The actual impact is likely significantly higher, as vessels typically swing on the anchor chain, causing the anchor chain to drag across the seabed.
- The project will eliminate the need for cruise vessels to operate side thrusters and the main engines to maintain the station and orientation of the cruise ship during lightering operations. This will further reduce fuel use, emissions and in-water noise while the cruise ships are on dock at the new terminal.
- The upland structures, infrastructure and roadway locations have been designed to minimize impacts to wetlands and other natural resources at the site.
- Permeable surface material has been used in roadways, parking areas and arrival areas to minimize the increase in impervious surfaces at the site.
- The project will reduce noise and in-water disturbance associated with current lightering operations.
- The project will also reduce fuel consumption and emissions associated with lightering operations.

The primary impact minimization measure that will be employed to avoid direct injury to marine mammals is the implementation of a marine mammal monitoring plan (Appendix B). The monitoring plan will consist of monitoring by two observers to maintain an area wherein pile driving will be temporarily stopped if any marine mammals are observed. Implementation of this monitoring plan is expected to be a practicable and highly effective means of avoiding Level A take (injury) of any marine mammals.

Mitigation for habitat impacts will be provided by operational improvements including a reduction in the need for anchoring at the site, as well as by proposed supplemental intertidal debris removal along the west shoreline of Icy Strait and the shore of Halibut Island.

The proposed facility will result in a reduction in impacts to benthic habitat associated with operation. Currently, ships calling on the facility must anchor off shore, and passengers are lightered (ferried in smaller boats) onto shore. Most ships calling on the new facility will moor directly at the dock, and will not need to drop

anchors. This will result in a long-term net reduction in recurring impacts to benthic habitats at the site. The elimination of cruise ship anchoring will reduce benthic impacts by an average of approximately 13,000 square feet (0.3 acre) annually. This will mitigate the unavoidable benthic impacts (0.02 acre) resulting from pile installation associated with the project.

To provide additional mitigation for direct habitat impacts to benthic communities and aquatic habitats, the project proposes to remove approximately 1-ton of debris and garbage from the west shoreline of Icy Strait and the shore of Halibut Island. The proposed shoreline and intertidal debris removal will remove potential sources of contamination (e.g. derelict boats, oil cans, etc.) and debris that could negatively affect water quality, and that could also endanger marine mammals and other aquatic life if it is remobilized by tidal surges or storms. The proposed debris removal will return the shoreline and intertidal areas in these locations to their natural state by removing obstacles to marine animals that may visit the shore in these areas. The debris consists of derelict boats, log booms and chains, steel cables, garbage (plastic bottles, pieces of foam, etc.), timber floats, and other derelict timber structures. The approximate areal extent of the debris field is shown on Sheet 23. The resulting water quality benefit and intertidal habitat restoration will be sufficient to further offset any impacts to aquatic habitats at the site.

11.1 General Best Management Practices

Typical construction BMPs for working in, over, and near water will be applied, including activities such as:

- Properly sized tugs and support equipment will be used.
- Oil booms will be readily available for containment should any releases occur.
- Work barges will not be allowed to ground out or rest on the substrate, or be over or within 25 feet of vegetated shallows.
- Barges will not be anchored over vegetated shallows for more than 4 consecutive days.
- Project construction will be completed in compliance with Alaska State Water Quality Standards (18 AAC 70).
- A spill prevention, control, and countermeasures (SPCC) plan will be prepared by the contractor and used during all construction operations. A copy of the plan with any updates will be maintained at the work site.
- Vessel personnel will be trained in hazardous material handling and spill response and will be equipped with all necessary response tools, including absorbent oil booms. In the event of a spill, spill cleanup and containment efforts will begin immediately and will take precedence over normal work.
- The vessel contractors will regularly inspect fuel hoses and oil or fuel transfer valves and fittings on the equipment for drips or leaks in order to prevent spills into the surface water.

- The contractor will be required to prepare and implement a Temporary Erosion and Sediment Control (TESC) plan during construction to minimize the potential for impacts to water quality from upland construction activities.

11.2 Pile Installation BMPs

Pile installation BMPs to be applied will include the following:

- Marine mammal monitoring will be conducted during pile installation activities to reduce the potential for impacts to marine mammals. A marine mammal monitoring plan is provided as Appendix B.

11.3 Overwater Concrete Placement Minimization and BMPs

The most likely scenario is that all overwater structure would be steel, however, if any cast-in place concrete work was required overwater, then the following BMPs would be employed:

- Wet concrete will not come into contact with surface waters.
- Forms for any concrete structure will be constructed to prevent leaching of wet concrete.
- Concrete process water will not be allowed to enter any waterbody. Any process water/contact water will be routed to a contained area for treatment and will be disposed of at an upland location.

11.4 Operational BMPs

BMPs to protect stormwater and the environment will be in-place during all in-water, over-water and upland operations at the site and will include the following.

- Good housekeeping practices will be in-place to minimize erosion, releases and or other impacts to the environment.
- Workers at the site will be trained in spill response, containment and cleanup. Spill kits will be readily available throughout the site.
- Stormwater protection measures will be in place during all facility operations.
- Operations at the facility will be governed by a Stormwater Pollution Prevention Plan (SWPPP), and an SPCC plan specific to operations at the facility, and operations will comply all applicable stormwater permit requirements for the facility.

12.0 ARCTIC SUBSISTENCE USES, PLAN OF COOPERATION

Where the proposed activity would take place in or near a traditional arctic subsistence hunting area and/or may affect the availability of a species or stock of marine mammal for arctic subsistence uses, the applicant must submit a plan of cooperation or information that identifies what measures have been taken and/or will be taken to minimize any adverse effects on the availability of marine mammals for subsistence use.

The proposed action will take place in and adjacent to the waters of Icy Strait/Port Frederick near Hoonah, Alaska. The project is located at approximately 58° 08' north latitude, which is below the 60° North latitude line which NMFS considers to be the lower limit in which impacts to Arctic subsistence could potentially occur (personal communication with Candace Nachmann, NMFS May 16, 2104). No activities will take place in or near a traditional Arctic subsistence hunting place.

13.0 MONITORING AND REPORTING PLAN

The suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species, the level of taking or impacts on the population of marine mammals that are expected to be present while conducting activities and suggested means of minimizing burdens by coordinating such reporting requirements with other schemes already applicable to persons conducting such activity. Monitoring plans should include a description of the survey techniques that would be used to determine the movement and activity of marine mammals near the activity site(s), including migration and other habitat uses, such as feeding.

The project has developed a marine mammal monitoring and reporting plan (Appendix B) which will be implemented to reduce the potential for exposure to Level A harassment, and to document and quantify the number of Level B takes during pile driving activity. See Appendix B for details regarding the monitoring protocol.

A monitoring report will be prepared following the completion of the project, which will be submitted to NMFS Office of Protected Resources. The purpose of the monitoring report will be to summarize the activities conducted which may result in take, species documented, and number of takes recorded during the monitoring period. The monitoring report will include the following:

- A brief summary of the relevant activities conducted during the monitoring period (in this case, pile driving activities);
- the number of marine mammals documented during the monitoring period, by species;
- the behavioral responses (if any) of any marine mammals recorded during pile driving activities;
- any actions taken as a result of the documented presence of marine mammals during pile driving;
- the effectiveness and practicability of implementation of mitigation actions taken; and
- a summary of the number of Level B takes recorded during the monitoring period.

14.0 COORDINATING RESEARCH TO REDUCE AND EVALUATE INCIDENTAL TAKE

Suggested means of learning of, encouraging, and coordinating research opportunities, plans, and activities relating to reducing such incidental taking and evaluating its effects.

The data recorded during marine mammal monitoring activities will be provided to NMFS in the monitoring reports. These reports will provide useful information regarding the density, run timing, migratory behavior, and behavioral response to construction activities for the marine mammals discussed in this document. The monitoring data collected will inform permit applicants and regulatory staff and assist the evaluation of the potential effects of future projects of similar scope in Southeast Alaska.

15.0 CONCLUSION

For the reasons described in this document, the project has determined that the effects of the proposed action have the potential to result in Level B harassment of small numbers of humpback whale, Steller sea lion, harbor seal, Dall's porpoise, gray whale, harbor porpoise, killer whale, minke whale, and Pacific white-sided dolphin. The project has implemented impact minimization measures, including a marine mammal monitoring plan, to reduce the potential for Level A harassment.

While the Level B harassment has the potential to result in minor behavioral effects to any marine mammals present during pile driving activities, based on the analysis presented in this document, these temporary effects will have a negligible effect on the stocks of marine mammals described in this document or their habitats.

16.0 LITERATURE CITED

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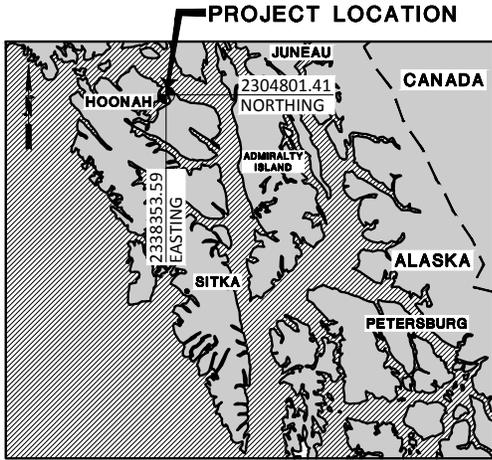
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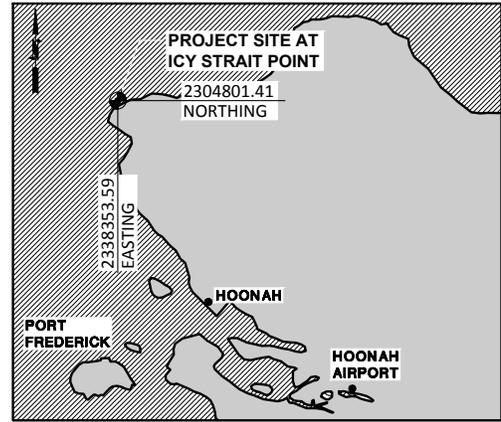
**Icy Strait Point Cruise Ship Terminal
Request for Incidental Harassment Authorization
Hoonah, Alaska**

**Appendix A
Figures**



AREA MAP

NO SCALE

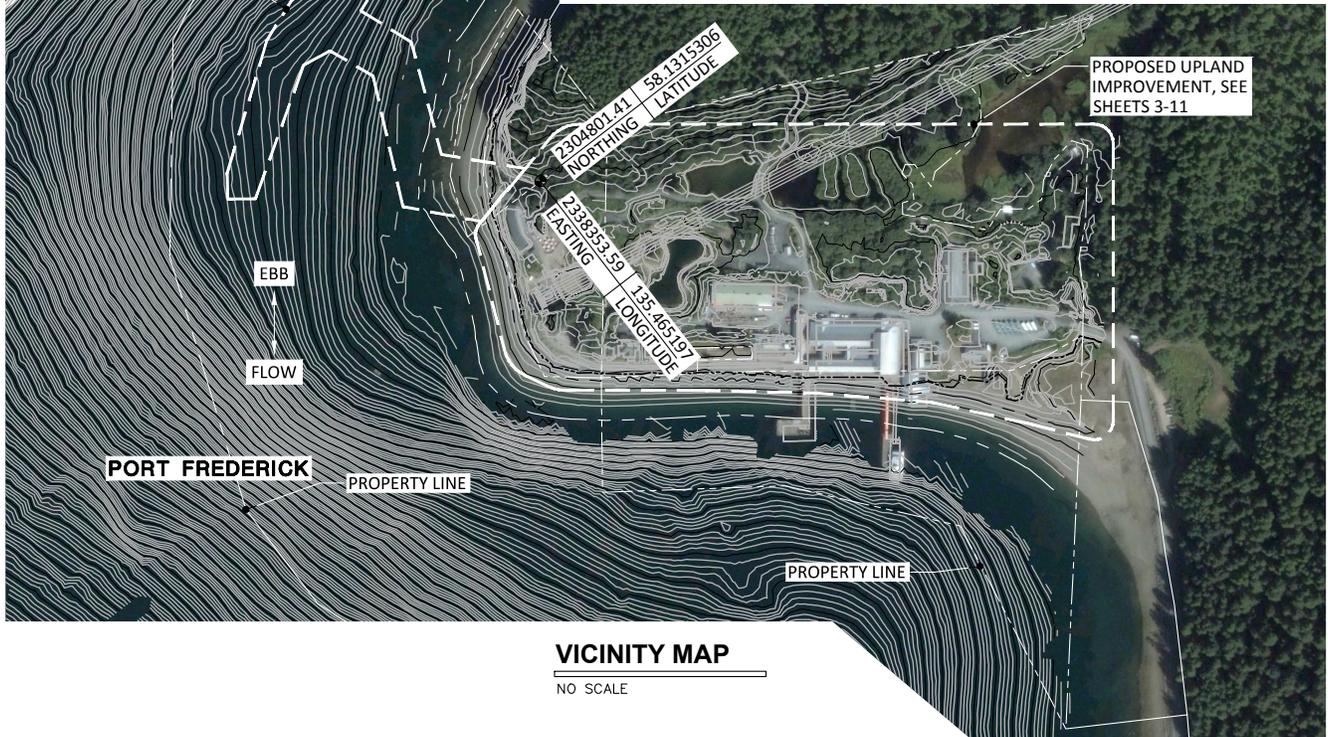


VICINITY MAP

NO SCALE

NOTES:

1. PROJECT VERTICAL DATUM IS MLLW AT 0.00 FEET. THE MEAN HIGHER HIGH WATER LINE (MHHW) HAS BEEN DETERMINED TO BE AT ELEVATION 14.80 FEET. THE HIGH TIDE LINE (HTL) HAS BEEN DETERMINED TO BE AT ELEVATION 19.30 FEET, PER THE CORPS DEFINITION.
2. PROJECT HORIZONTAL DATUM IS ALASKA STATE PLANE, NAD83, ZONE 5001, US SURVEY FOOT (GROUND) PROJECTION. FOR REFERENCE, A PROJECT MONUMENT IS ALSO DESCRIBED IN THE WGS84 PROJECTION (ESTABLISHED 1984, REVISED 2004).
3. DIRECTIONS TO SITE. FROM THE HOOHAH, AK AIRPORT, TURN LEFT ONTO AIRPORT ROAD AND CONTINUE ON FRONT STREET AND CANNERY ROAD UNTIL IT DEAD ENDS AT ICY STRAIT POINT. FROM THE HOOHAH, AK SEAPLANE BASE, HEAD NORTHWEST ON FRONT STREET AND CONTINUE ONTO CANNERY ROAD UNTIL IT DEAD ENDS AT ICY STRAIT POINT.



VICINITY MAP

NO SCALE

PROPOSED PROJECT:
Proposed Hoonah Berthing Facility and Upland Improvements. Includes in-water and upland construction, upland demolition, and other activities.

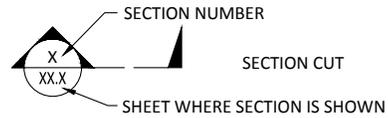
ADJACENT PROPERTY OWNERS:
1) US Forest Service (Tongass)
2) City of Hoonah
3) Alaska Department of Natural Resources

USACE REFERENCE NO: NWS-POA-2012-0404
APPLICANT: Huna Totem Corporation
LOCATION: 108 Cannery Road, Hoonah, Alaska 99829
LAT/LONG: 58.1315306 / 135.465197
IN: Icy Strait & Port Frederick
NEAR: Hoonah, AK (1.5 miles NW)
COUNTY: Hoonah Angoon Borough **STATE:** AK

PROJECT LOCATION

EXISTING FACILITY LEGEND:

	B.L.M. MONUMENT (RECOVERED)		DITCH
	7570-S SECONDARY MONUMENT (ESTABLISHED)		EDGE OF GRAVEL
	PRIMARY MONUMENT BY OTHERS (RECOVERED)		EDGE OF TRAIL
	SECONDARY MONUMENT BY OTHERS (RECOVERED)		TOE OF SLOPE
	TEMPORARY BENCH MARK (T.B.M.)		EDGE OF WATER
	SANITARY SEWER MANHOLE		WOOD FENCE
	SANITARY SEWER CLEAN-OUT		MAJOR CONTOUR LINE
	HYDRANT		MINOR CONTOUR LINE
	WATER VALVE		BRUSH LINE
	POWER POLE		LANDSCAPED VEGETATION
	GUY ANCHOR		ROCK WALL
	POWER VAULT		PROPERTY LINE
	TRANSFORMER		TOP OF BANK
	LIGHT		LOG BARRIER/WALL
	ELECTRIC PEDESTAL		WOOD AND WIRE RAILING
	TELEPHONE RISER OR JUNCTION		WETLAND BOUNDARY
	JUNCTION BOX		EXISTING WETLAND AREA
	STREET SIGN		STRUCTURE/BUILDING
	WATER VALVE		EXISTING GRAVEL
	HOSE BIB		
	FIRE HYDRANT		
	SATELLITE DISH		
	WETLANDS FLAGGING		
	SIGN		
	TEST PIT		



PROPOSED FACILITY LEGEND:

	DITCH CENTER LINE
	RELOCATED LOG BARRIER
	WOOD FENCE
	FILL DAYLIGHT LINE
	CUT DAYLIGHT LINE
	MAJOR CONTOUR LINE
	MINOR CONTOUR LINE
	CSP CULVERT
	CULVERT END SECTION
	GRAVEL SURFACE
	BOARDWALK

	WETLAND IMPACT AREAS
	HAND PLACED RIPRAP

TESC LEGEND:

(TEMPORARY EROSION AND SEDIMENT CONTROL)

	REMOVE AND REPLACE
	CLEARING AND GRUBBING LIMITS
	REMOVAL OF STRUCTURES AND OBSTRUCTIONS
	SLIT FENCE
	REMOVE AND RELOCATE EXISTING AGGREGATE BASE AND SURFACE COURSE
	CLEARING AND GRUBBING

PROPOSED PROJECT:
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APPLICANT: Huna Totem Corporation

LOCATION: 108 Cannery Road, Hoonah, Alaska 99829

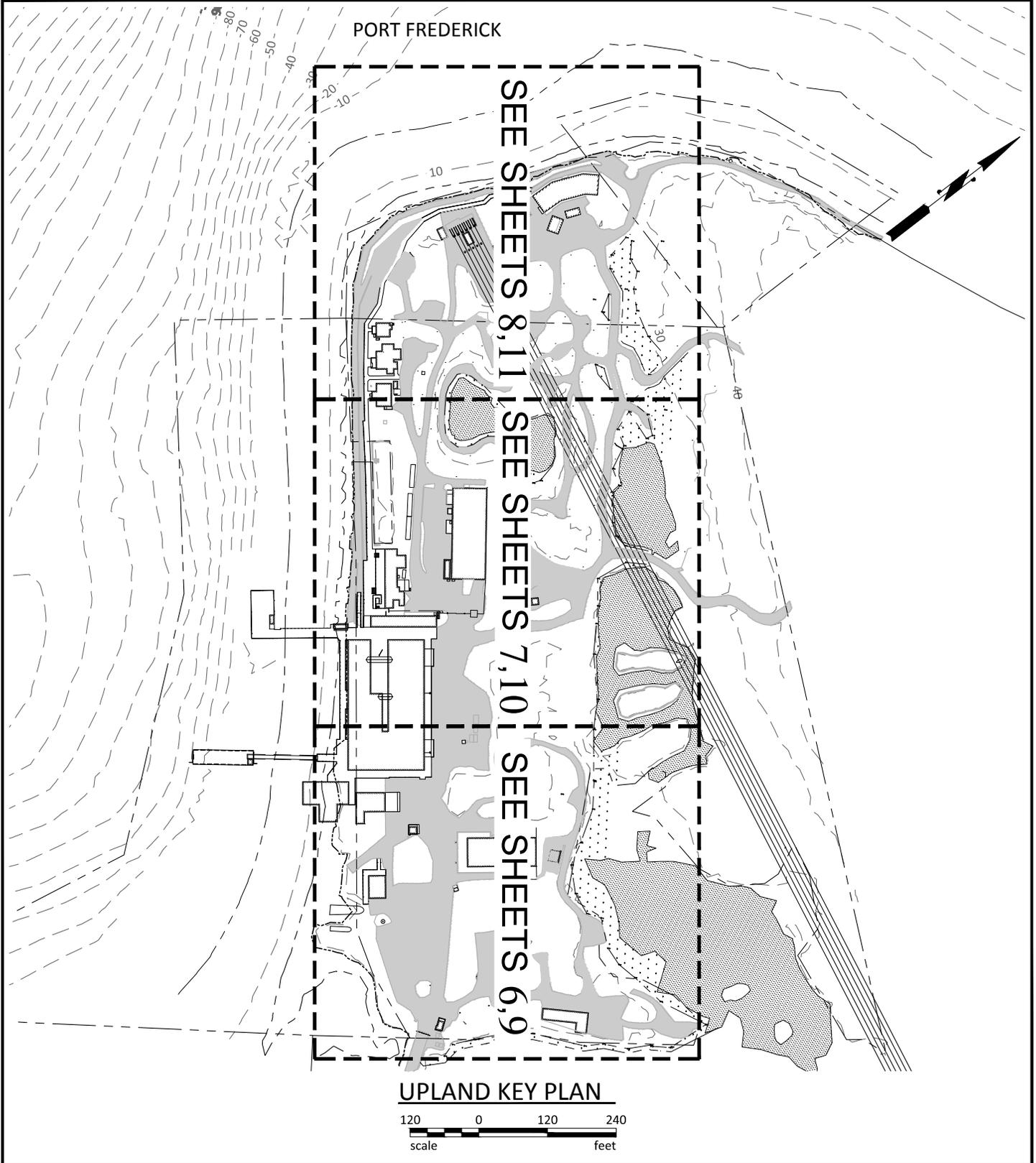
LAT/LONG: 58.1315306 / 135.465197

IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

LEGEND



UPLAND KEY PLAN



PROPOSED PROJECT:
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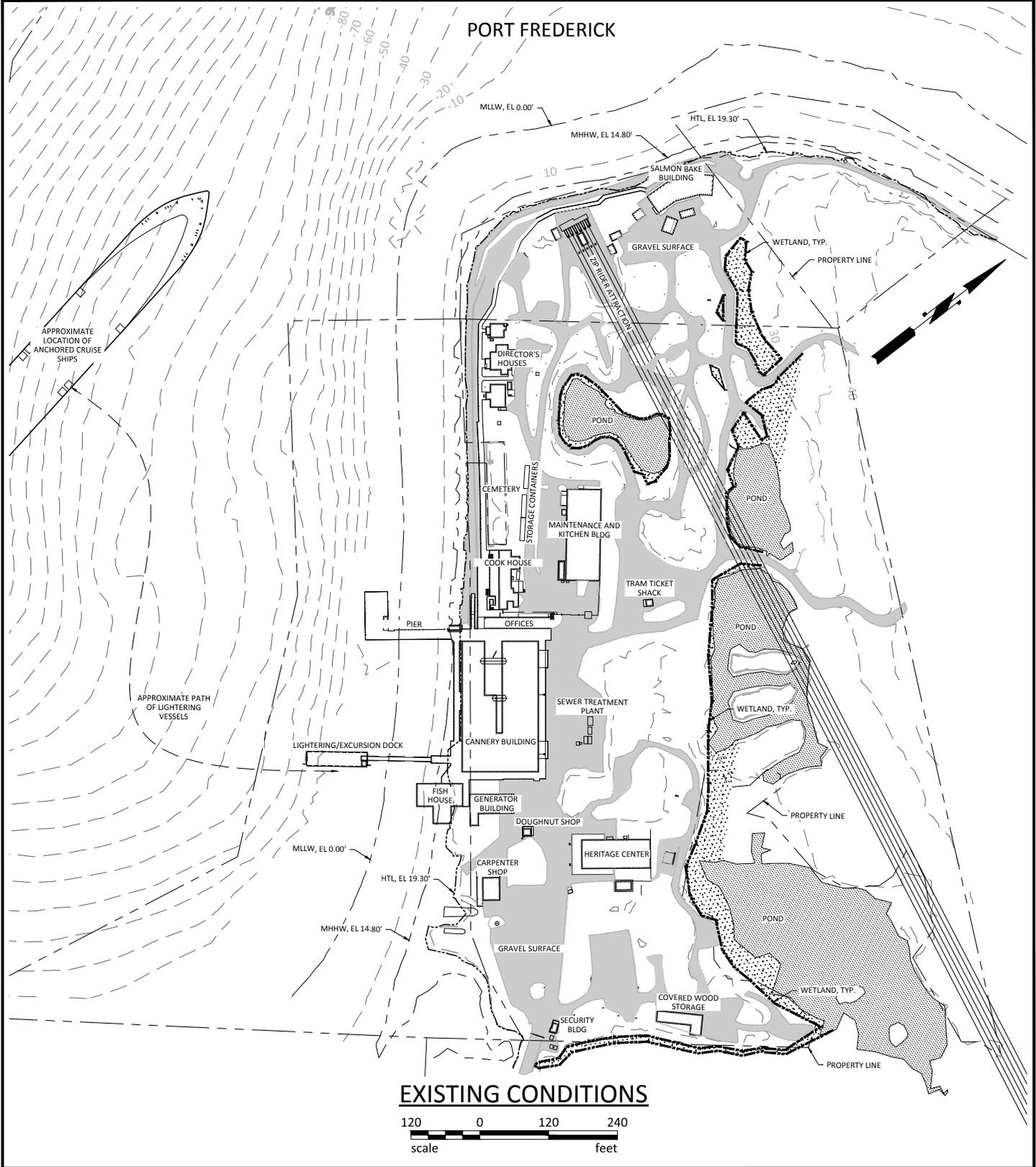
LAT/LONG: 58.1315306 / 135.465197

IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

UPLAND KEY PLAN



EXISTING CONDITIONS



PROPOSED PROJECT:
 Proposed Hoonah Berthing Facility and Upland Improvements. Includes in-water and upland construction, upland demolition, and other activities.

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USACE REFERENCE NO: NWS-POA-2012-0404

APPLICANT: Huna Totem Corporation

LOCATION: 108 Cannery Road, Hoonah, Alaska 99829

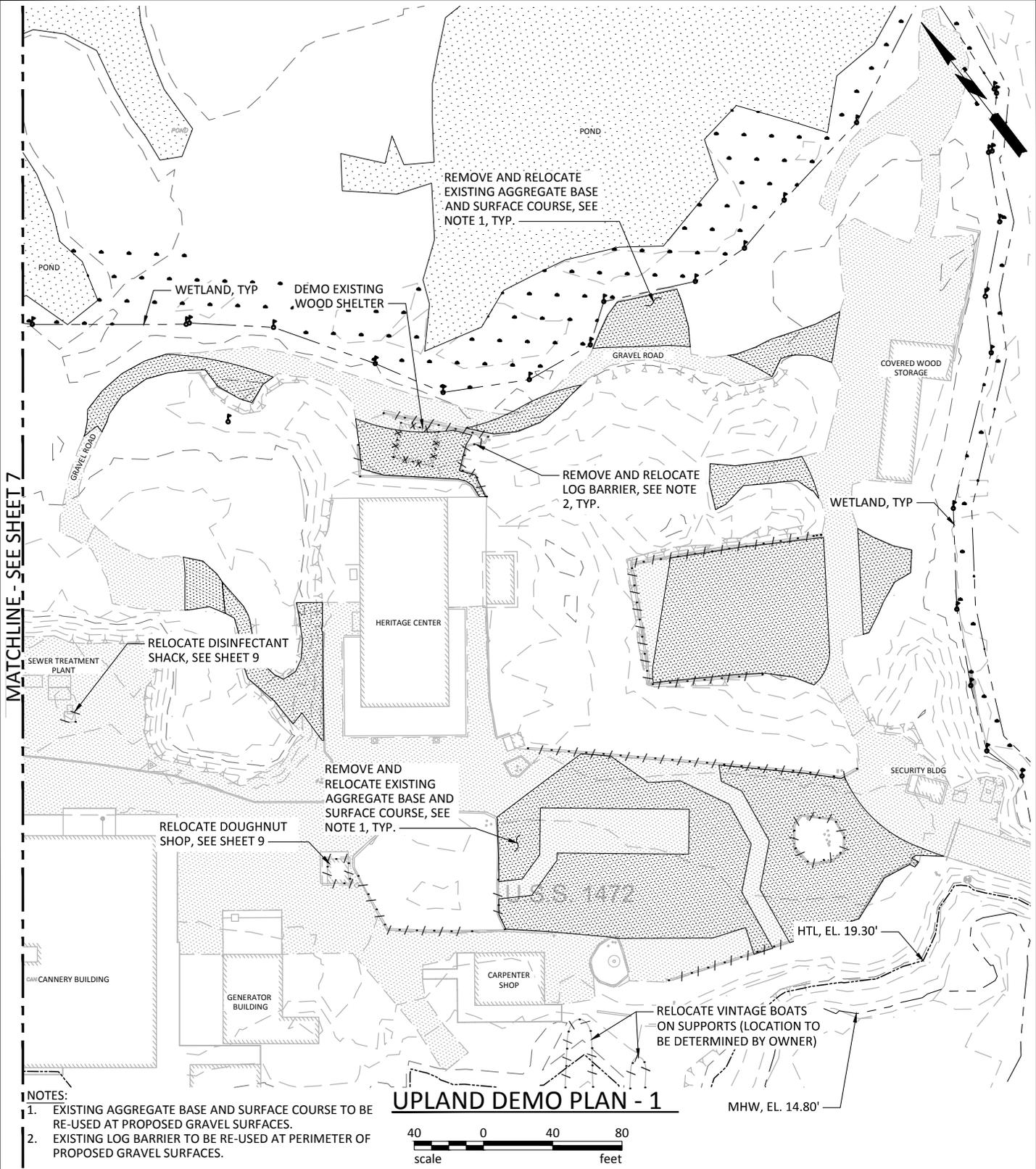
LAT/LONG: 58.1315306 / 135.465197

IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

EXISTING CONDITIONS



- NOTES:**
1. EXISTING AGGREGATE BASE AND SURFACE COURSE TO BE RE-USED AT PROPOSED GRAVEL SURFACES.
 2. EXISTING LOG BARRIER TO BE RE-USED AT PERIMETER OF PROPOSED GRAVEL SURFACES.

UPLAND DEMO PLAN - 1



PROPOSED PROJECT:
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LOCATION: 108 Cannery Road, Hoonah, Alaska 99829

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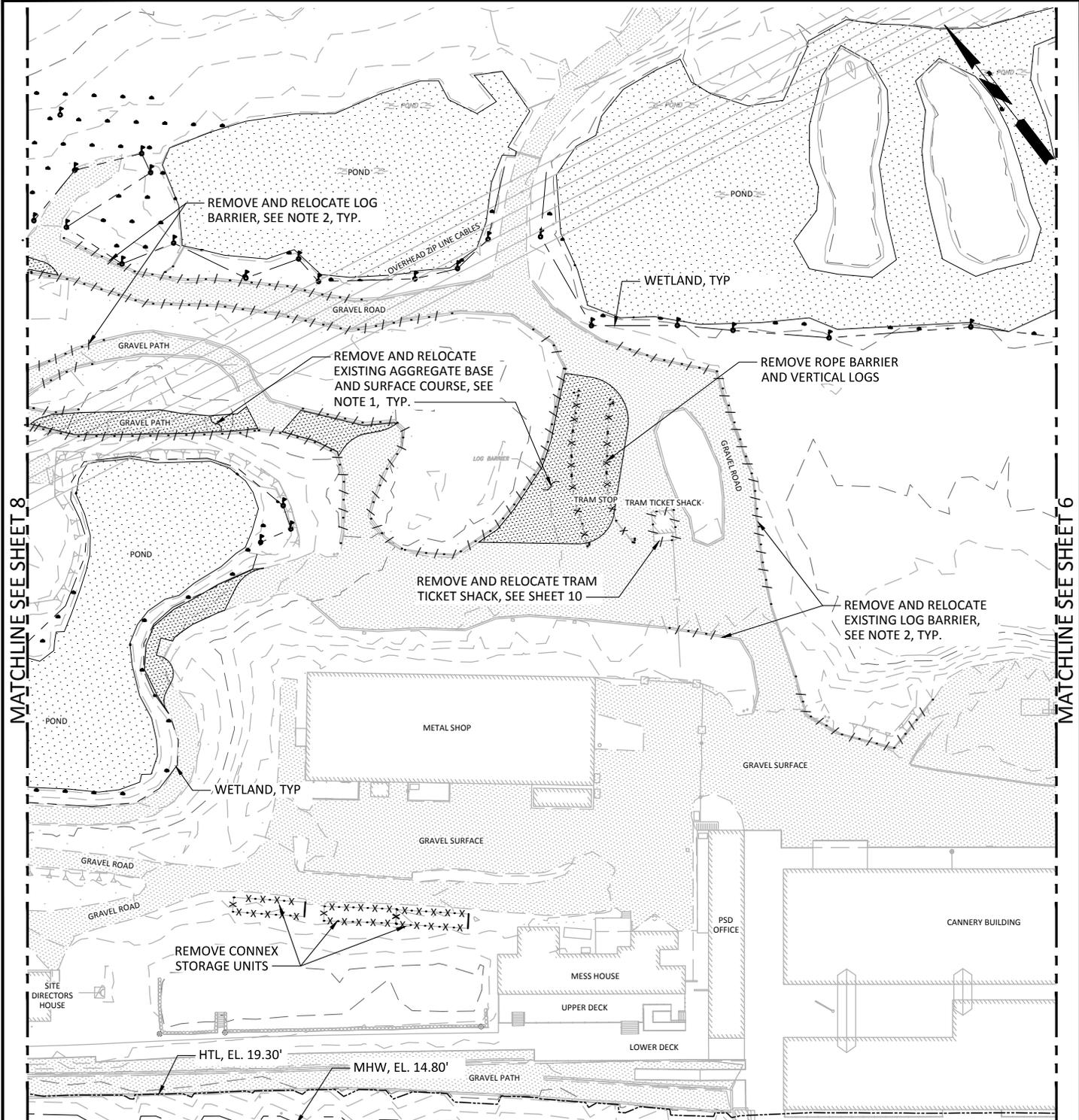
IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

**UPLAND
 DEMOLITION PLAN - 1**

Sheet 6 OF 24 Date: 8/4/14



MATCHLINE SEE SHEET 8

MATCHLINE SEE SHEET 6

- NOTES:**
1. EXISTING AGGREGATE BASE AND SURFACE COURSE TO BE RE-USED AT PROPOSED GRAVEL SURFACES.
 2. EXISTING LOG BARRIER TO BE RE-USED AT PERIMETER OF PROPOSED GRAVEL SURFACES.

UPLAND DEMO PLAN - 2



PROPOSED PROJECT:
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USACE REFERENCE NO: NWS-POA-2012-0404

APPLICANT: Huna Totem Corporation

LOCATION: 108 Cannery Road, Hoonah, Alaska 99829

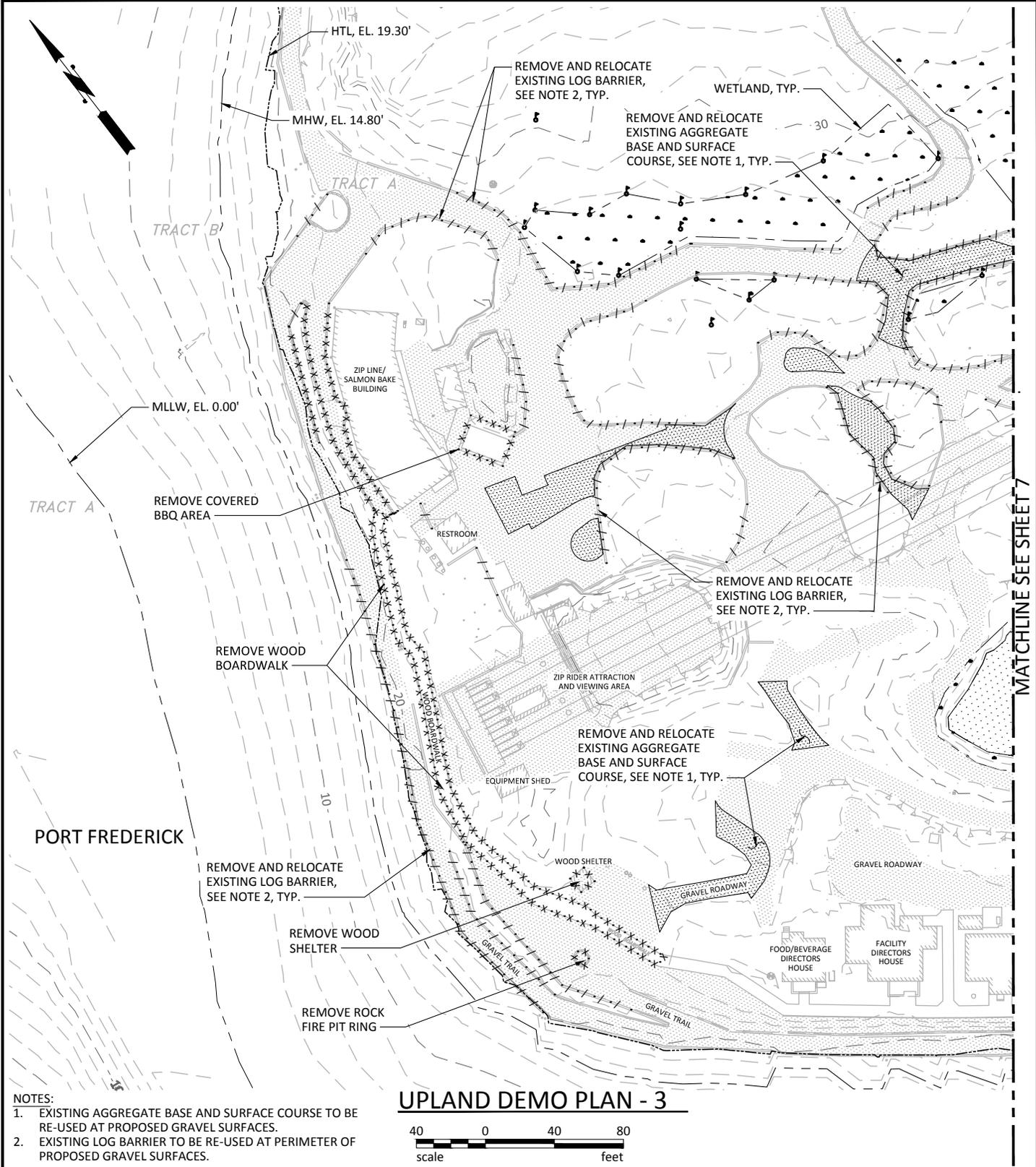
LAT/LONG: 58.1315306 / 135.465197

IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

UPLAND DEMOLITION PLAN - 2



MATCHLINE SEE SHEET 7

- NOTES:**
- EXISTING AGGREGATE BASE AND SURFACE COURSE TO BE RE-USED AT PROPOSED GRAVEL SURFACES.
 - EXISTING LOG BARRIER TO BE RE-USED AT PERIMETER OF PROPOSED GRAVEL SURFACES.

UPLAND DEMO PLAN - 3



PROPOSED PROJECT:
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- US Forest Service (Tongass)
- City of Hoonah
- Alaska Department of Natural Resources

USACE REFERENCE NO: NWS-POA-2012-0404

APPLICANT: Huna Totem Corporation

LOCATION: 108 Cannery Road, Hoonah, Alaska 99829

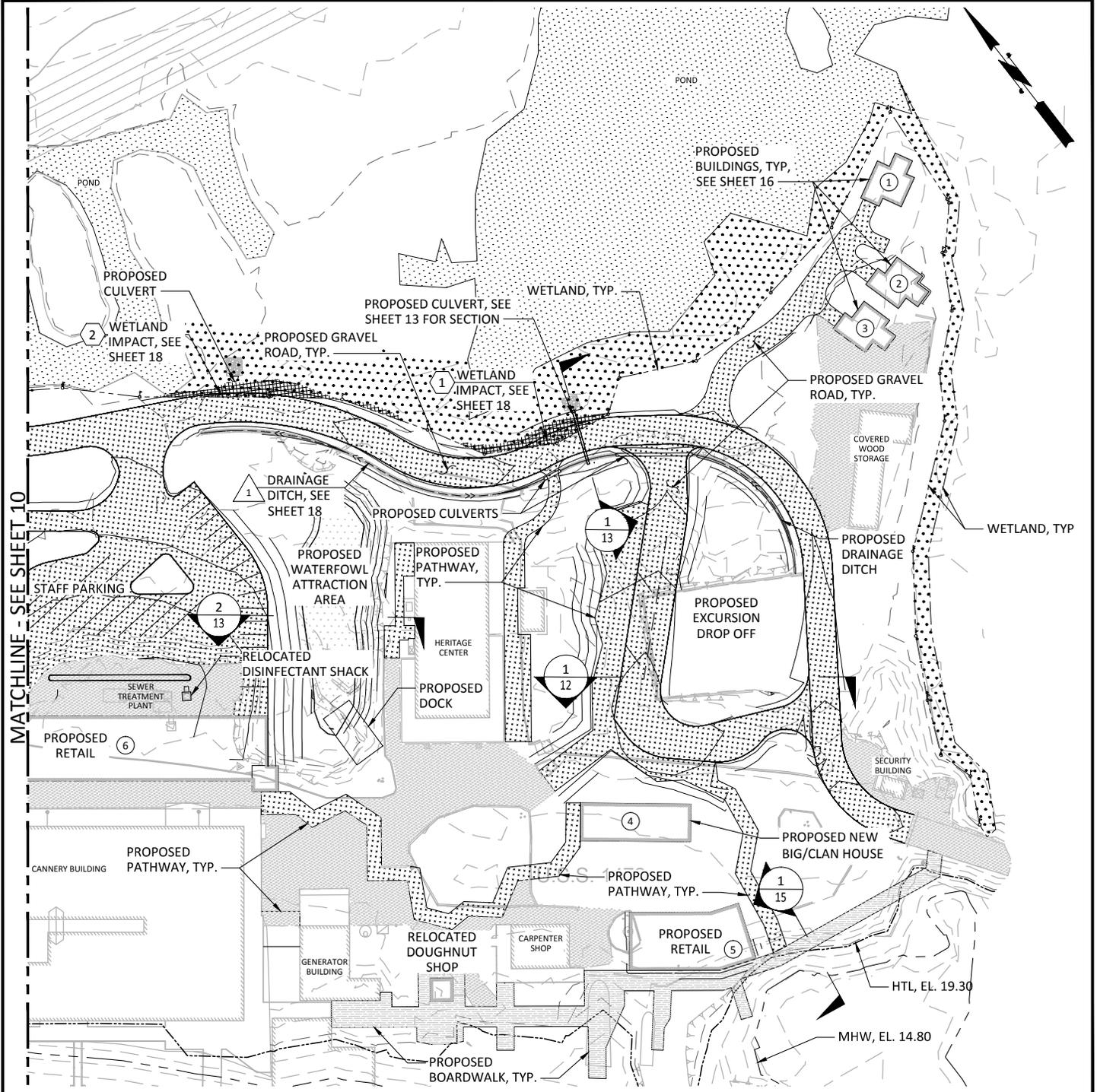
LAT/LONG: 58.1315306 / 135.465197

IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

UPLAND DEMOLITION PLAN - 3



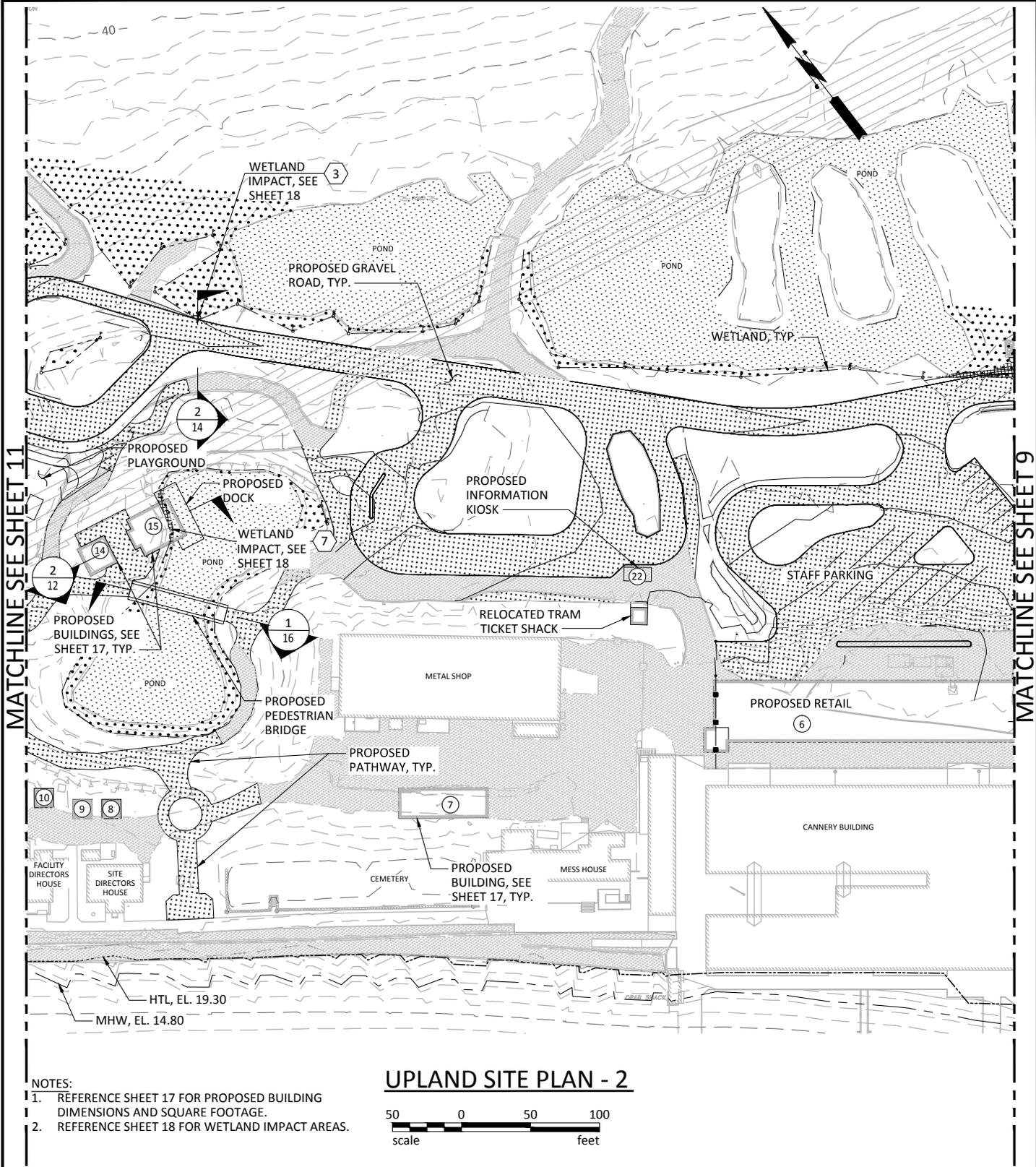
MATCHLINE - SEE SHEET 10

- NOTES:**
1. REFERENCE SHEET 17 FOR PROPOSED BUILDING DIMENSIONS AND SQUARE FOOTAGE.
 2. REFERENCE SHEET 18 FOR WETLAND IMPACT AREAS.

UPLAND SITE PLAN - 1



<p>PROPOSED PROJECT: Proposed Hoonah Berthing Facility and Upland Improvements. Includes in-water and upland construction, upland demolition, and other activities.</p> <p>ADJACENT PROPERTY OWNERS:</p> <ol style="list-style-type: none"> 1) US Forest Service (Tongass) 2) City of Hoonah 3) Alaska Department of Natural Resources 	<p>USACE REFERENCE NO: NWS-POA-2012-0404</p> <p>APPLICANT: Huna Totem Corporation</p> <p>LOCATION: 108 Cannery Road, Hoonah, Alaska 99829</p> <p>LAT/LONG: 58.1315306 / 135.465197</p> <p>IN: Icy Strait & Port Frederick</p> <p>NEAR: Hoonah, AK (1.5 miles NW)</p> <p>COUNTY: Hoonah Angoon Borough STATE: AK</p>	<p style="text-align: center;">UPLAND SITE PLAN - 1</p> <p style="text-align: right;">Sheet 9 OF 24 Date: 8/4/14</p>
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MATCHLINE SEE SHEET 11

MATCHLINE SEE SHEET 9

- NOTES:**
1. REFERENCE SHEET 17 FOR PROPOSED BUILDING DIMENSIONS AND SQUARE FOOTAGE.
 2. REFERENCE SHEET 18 FOR WETLAND IMPACT AREAS.

UPLAND SITE PLAN - 2



PROPOSED PROJECT:
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APPLICANT: Huna Totem Corporation

LOCATION: 108 Cannery Road, Hoonah, Alaska 99829

LAT/LONG: 58.1315306 / 135.465197

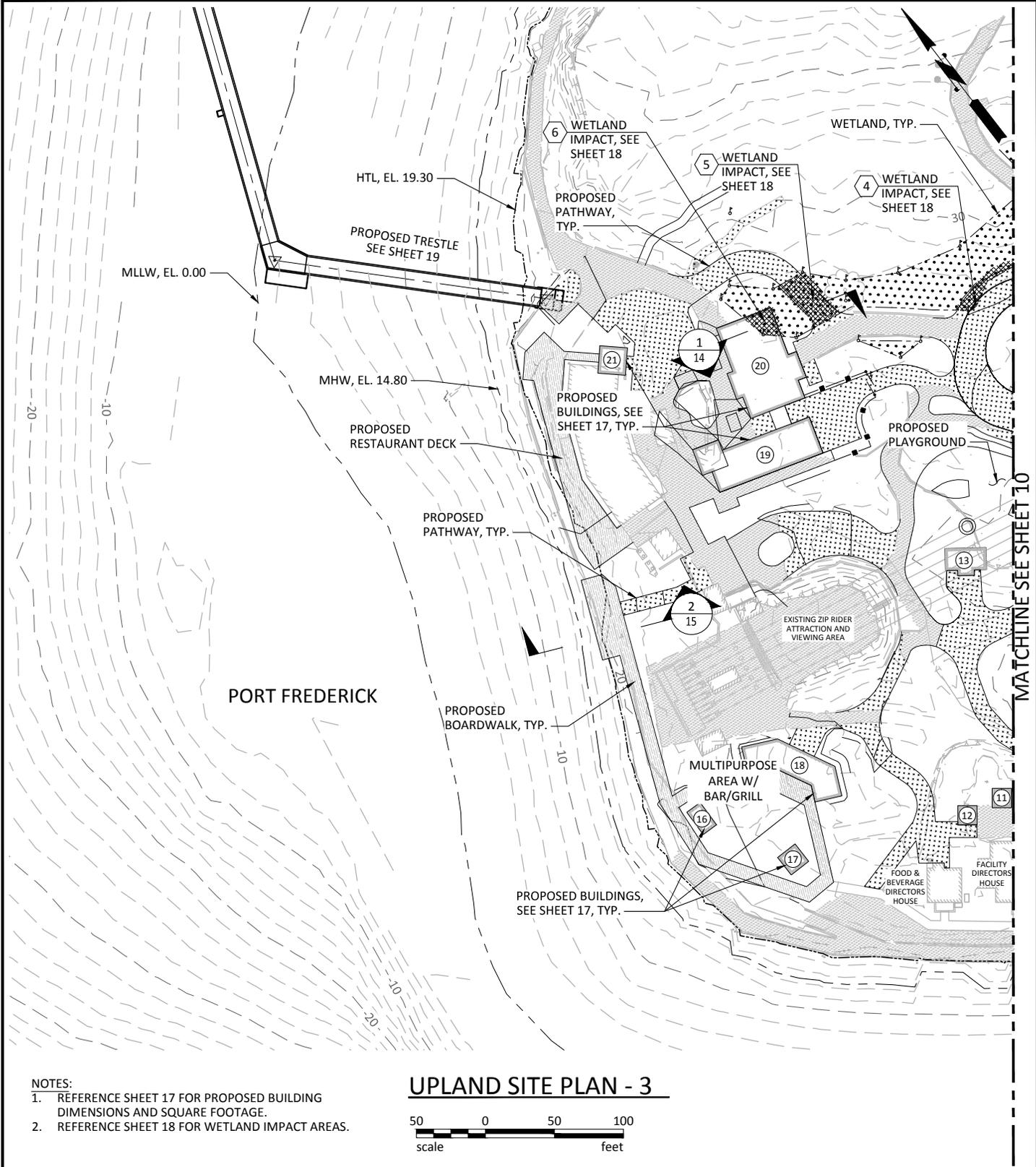
IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

**UPLAND
 SITE PLAN - 2**

Sheet 10 OF 24 Date: 8/4/14



- NOTES:**
1. REFERENCE SHEET 17 FOR PROPOSED BUILDING DIMENSIONS AND SQUARE FOOTAGE.
 2. REFERENCE SHEET 18 FOR WETLAND IMPACT AREAS.

UPLAND SITE PLAN - 3



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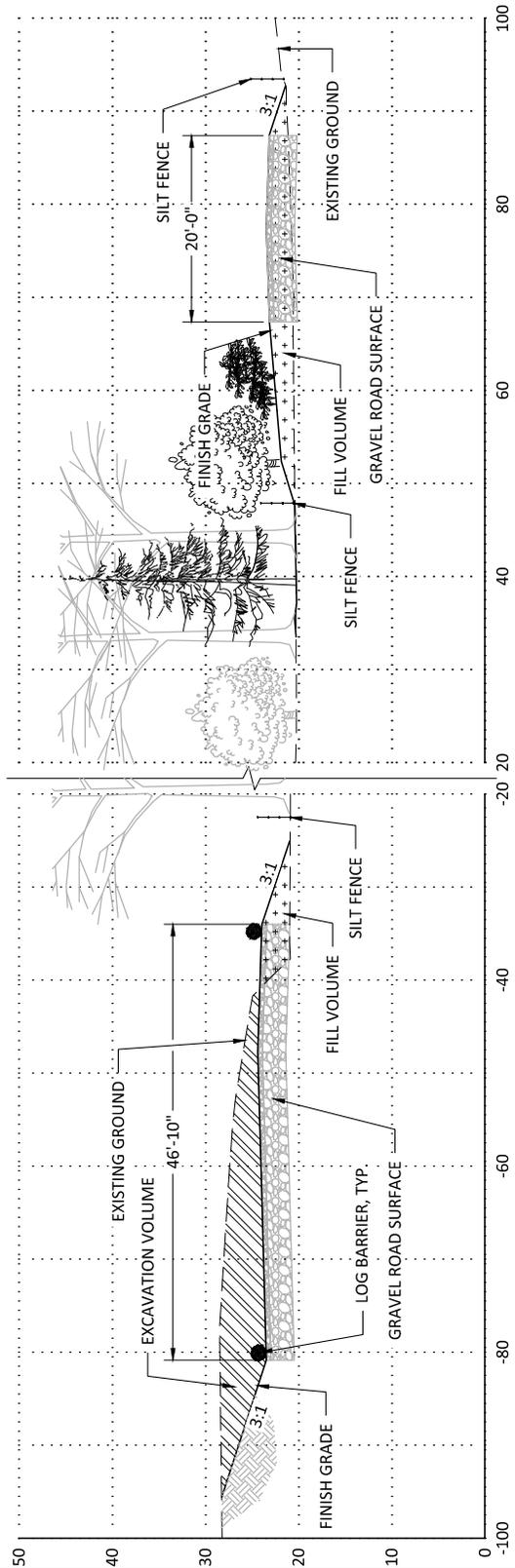
IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

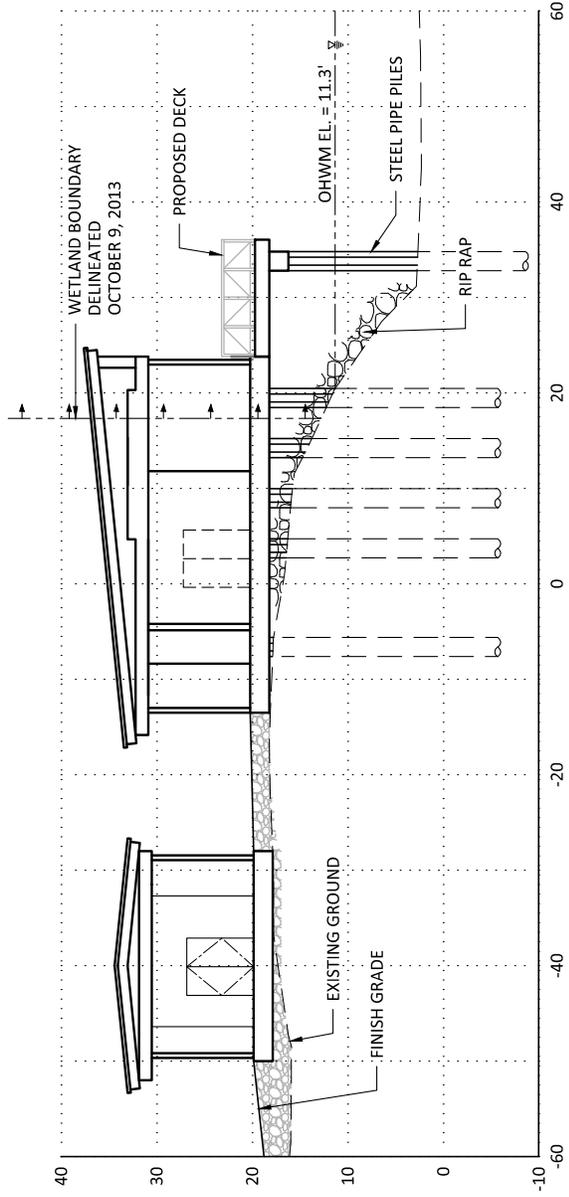
UPLAND SITE PLAN - 3

Sheet 11 OF 24 Date: 8/4/14



EXCURSION DROP-OFF AND ROAD PROFILE

SECTION NUMBER, TYP 1
 SHEET WHERE SECTION IS SHOWN, TYP 9



CULINARY VENUE PROFILE

SECTION NUMBER, TYP 2
 SHEET WHERE SECTION IS SHOWN, TYP 10



PROPOSED PROJECT:
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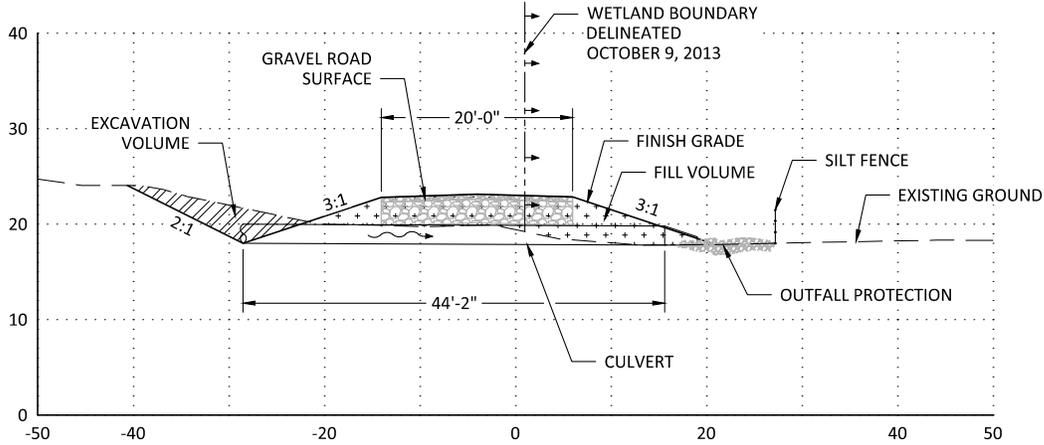
IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

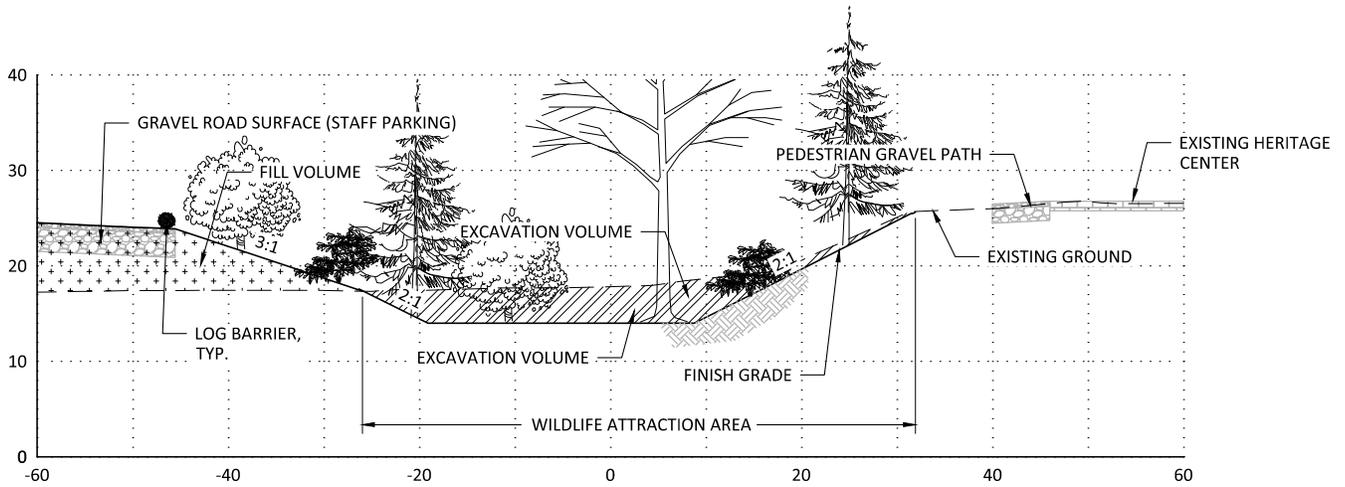
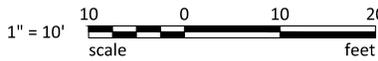
UPLAND SECTIONS

Sheet 12 OF 24 Date: 8/4/14



SECTION NUMBER, TYP 1 **ROAD SECTION AT CULVERT**

SHEET WHERE SECTION IS SHOWN, TYP 9



2 **WATERFOWL ATTRACTION PROFILE**

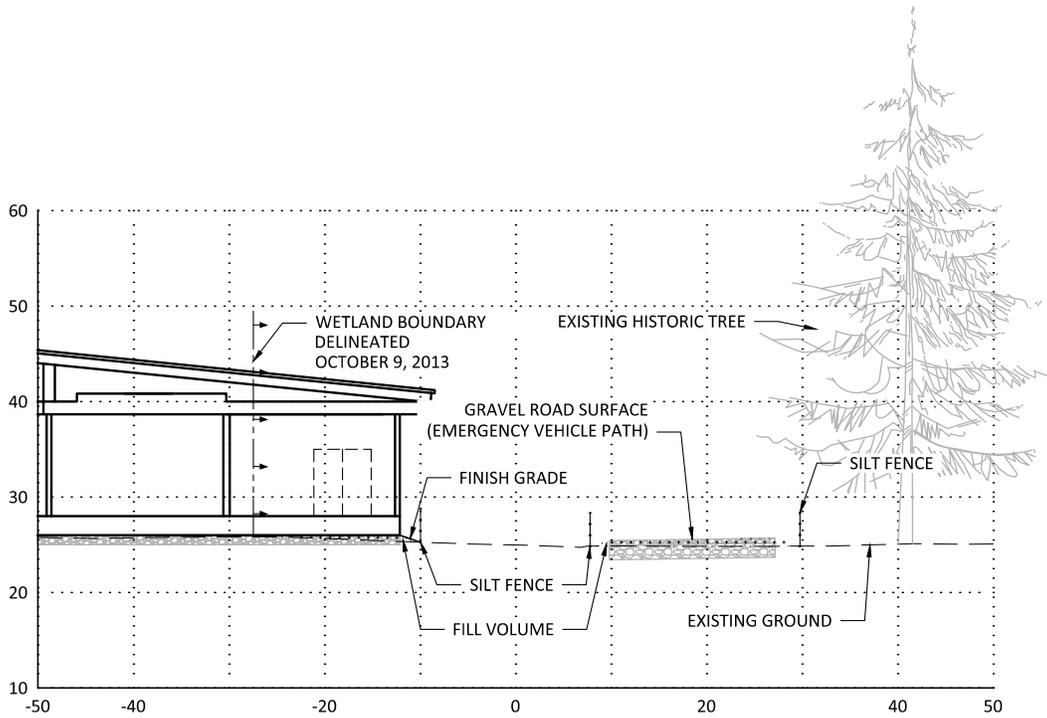


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UPLAND SECTIONS

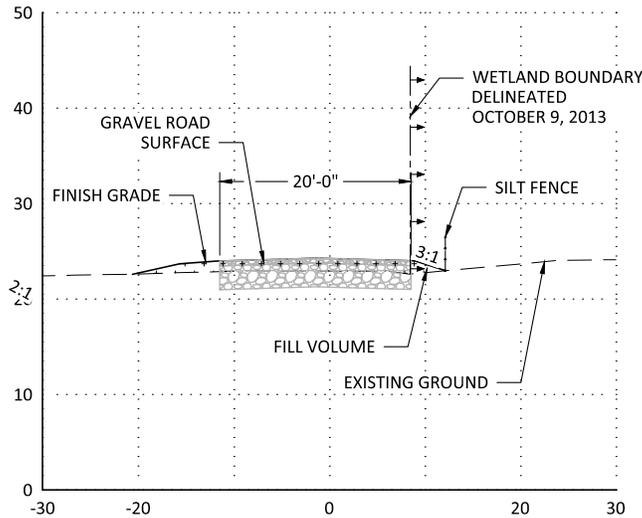
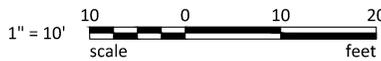


SECTION NUMBER, TYP

1
11

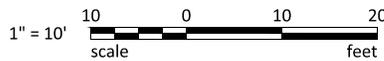
WELCOME CENTER/GRAVEL ACCESS ROAD SECTION

SHEET WHERE SECTION IS SHOWN, TYP



2
10

GRAVEL ROAD SECTION



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APPLICANT: Huna Totem Corporation

LOCATION: 108 Cannery Road, Hoonah, Alaska 99829

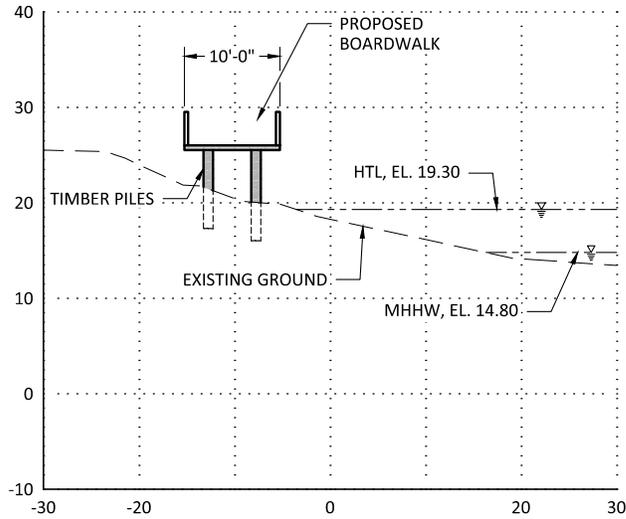
LAT/LONG: 58.1315306 / 135.465197

IN: Icy Strait & Port Frederick

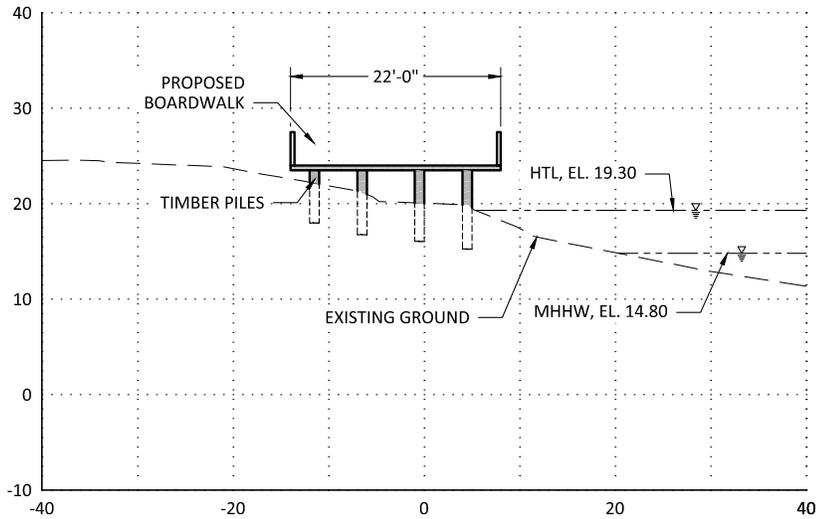
NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

UPLAND SECTIONS



SECTION NUMBER, TYP 1 **BOARDWALK SECTION**
 SHEET WHERE SECTION IS SHOWN, TYP 9
 1" = 10'
 scale 20 feet



2 **BOARDWALK SECTION**
11
 1" = 10'
 scale 20 feet

PROPOSED PROJECT:
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- 1) US Forest Service (Tongass)
- 2) City of Hoonah
- 3) Alaska Department of Natural Resources

USACE REFERENCE NO: NWS-POA-2012-0404

APPLICANT: Huna Totem Corporation

LOCATION: 108 Cannery Road, Hoonah, Alaska 99829

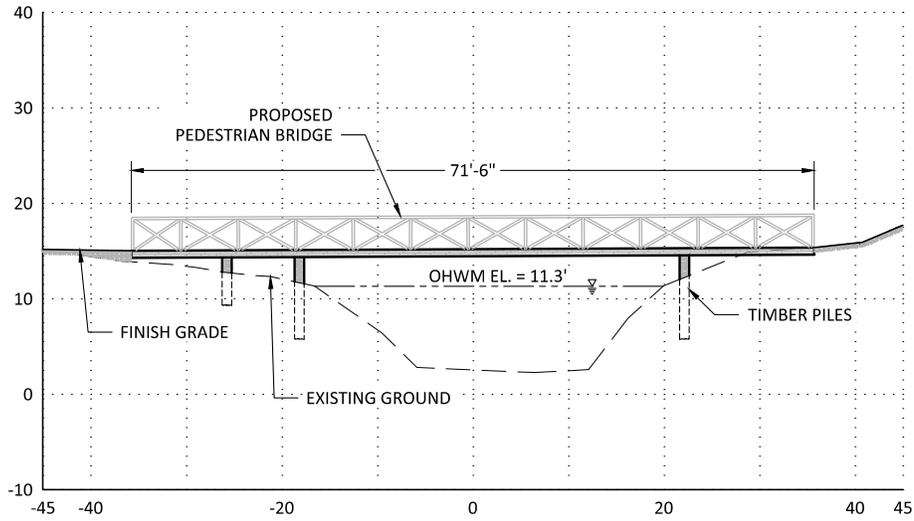
LAT/LONG: 58.1315306 / 135.465197

IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

UPLAND SECTIONS



SECTION NUMBER, TYP 1 **PEDESTRIAN BRIDGE SECTION**
 SHEET WHERE SECTION IS SHOWN, TYP 10
 1" = 10'
10
0
10
20

 scale feet

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APPLICANT: Huna Totem Corporation

LOCATION: 108 Cannery Road, Hoonah, Alaska 99829

LAT/LONG: 58.1315306 / 135.465197

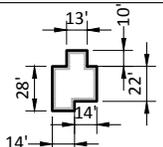
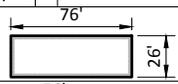
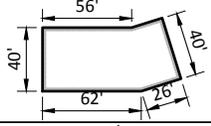
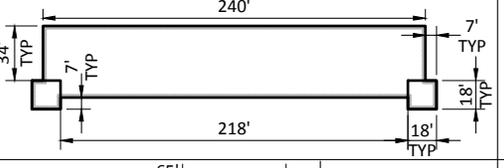
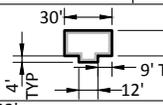
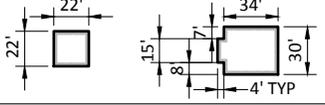
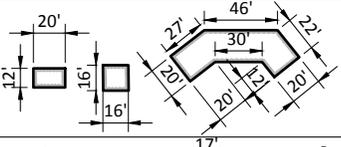
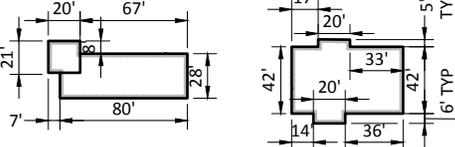
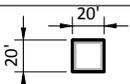
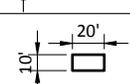
IN: Icy Strait & Port Frederick

NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

UPLAND SECTIONS

UPLAND BUILDING TABLE

ID #	BUILDING NAME	DIMENSIONS (FT)	TOTAL SQUARE FEET
①②③	STAFF HOUSING 1,2 & 3		2,500 SF
④	NEW BIG/CLAN HOUSE		2,000 SF
⑤	PROPOSED RETAIL 1		3,285 SF
⑥	PROPOSED RETAIL 2		11,500 SF
⑦	NEW WOOD BARN		1,450 SF
⑧⑨⑩⑪⑫	ARTS & CRAFTS SHOPS		1,000 SF
⑬	CHILDREN'S PLAY AREA BUILDING		625 SF
⑭⑮	CULINARY VENUE		1,600 SF
⑯⑰⑱	MULTIPURPOSE AREA W/ BAR/GRILL		2,150 SF
⑲⑳	WELCOME CENTER W/ RETAIL		6,100 SF
㉑	RENOVATED RESTAURANT ADDITION		6,100 SF
㉒	INFORMATION KIOSK		200 SF

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 IN: Icy Strait & Port Frederick
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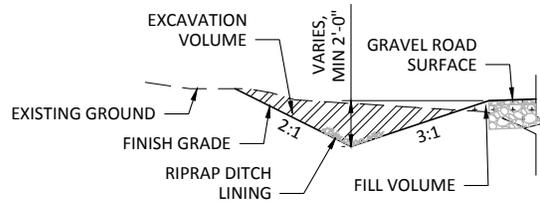
UPLAND BUILDING TABLE

WETLAND IMPACT TABLE

ID #	AREA (SQURE FEET)	CUT (CUBIC YARDS)	FILL (CUBIC YARDS)
1	900	0	120
2	1,200	0	100
3	50	0	5
4	500	15	5
5	1,000	0	30
6	300	0	10
7	150	0	5

DRAINAGE DITCH TABLE

ID #	AREA (SQURE FEET)	CUT (CUBIC YARDS)	FILL (CUBIC YARDS)
1	900	520	20



TYPICAL DITCH SECTION

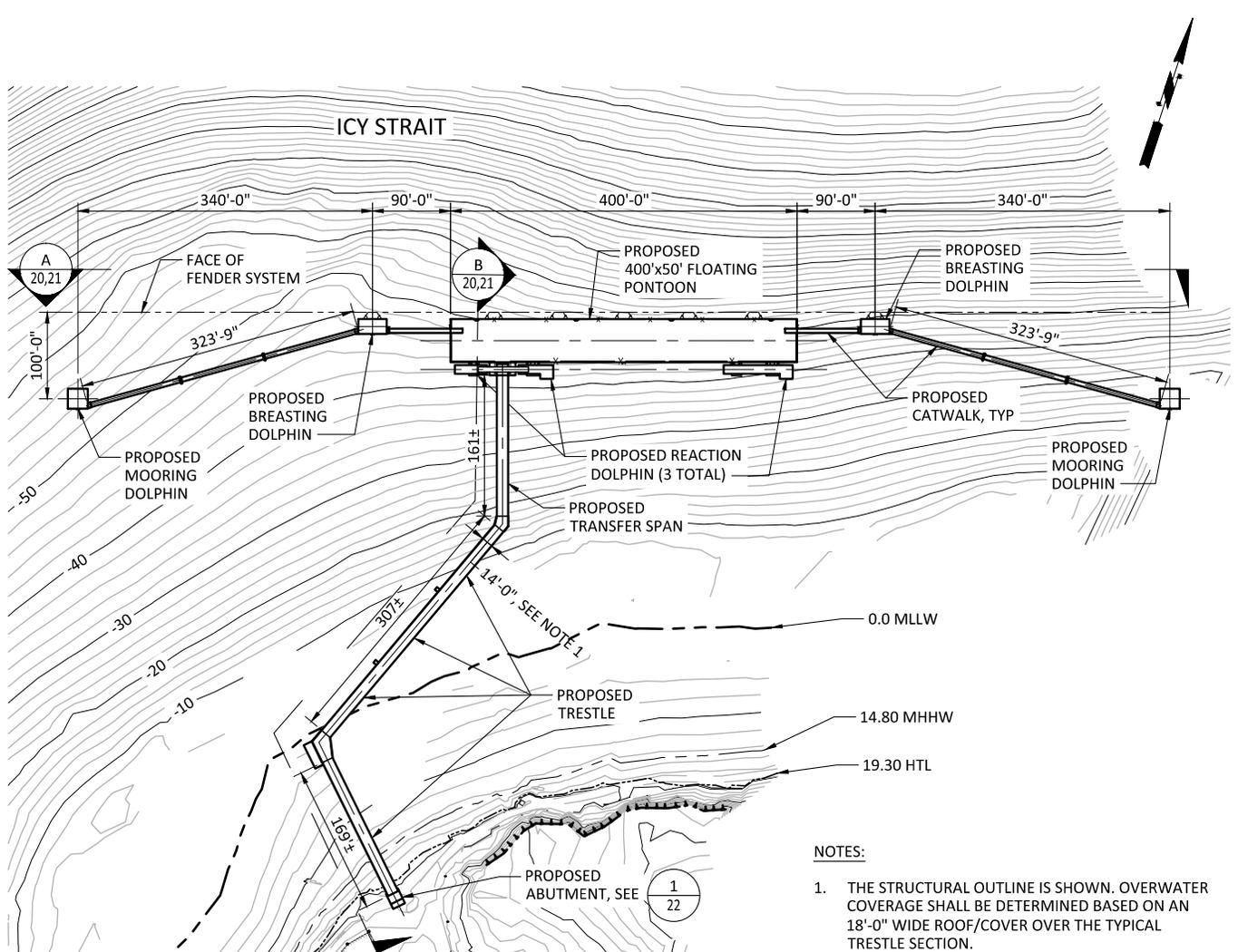
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 NEAR: Hoonah, AK (1.5 miles NW)
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WETLAND IMPACT TABLE AND DITCH TABLE



- NOTES:**
1. THE STRUCTURAL OUTLINE IS SHOWN. OVERWATER COVERAGE SHALL BE DETERMINED BASED ON AN 18'-0" WIDE ROOF/COVER OVER THE TYPICAL TRESTLE SECTION.

SITE PLAN - PROPOSED BERTHING FACILITY



PROPOSED PROJECT:
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LOCATION: 108 Cannery Road, Hoonah, Alaska 99829

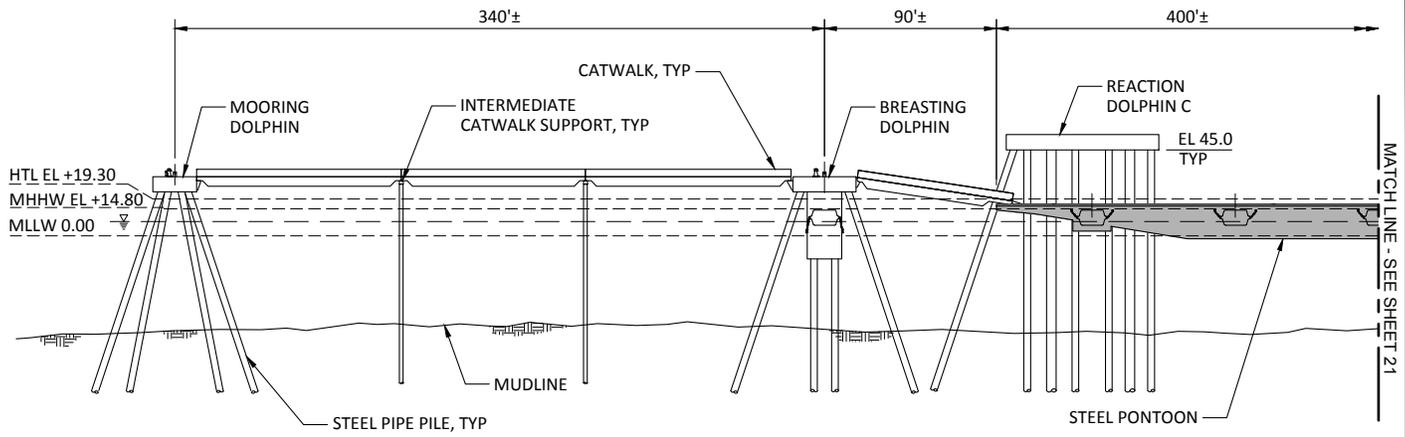
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IN: Icy Strait & Port Frederick

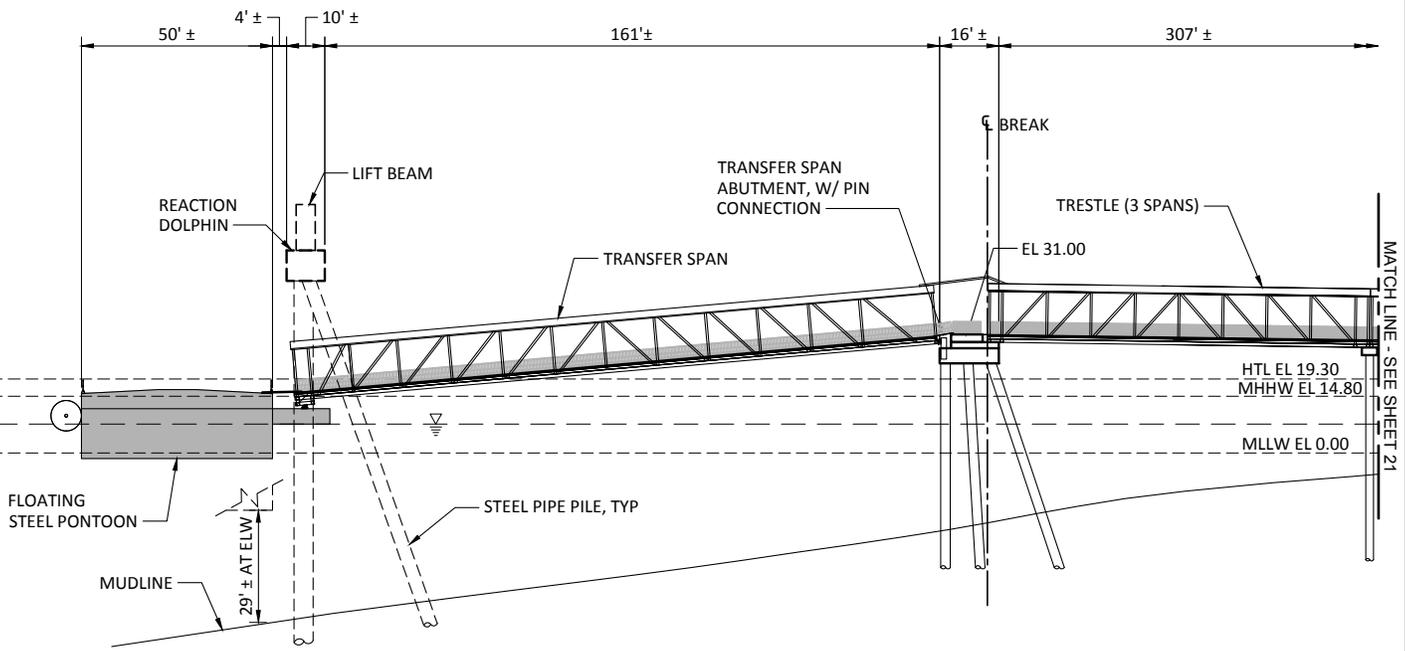
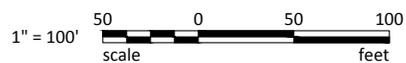
NEAR: Hoonah, AK (1.5 miles NW)

COUNTY: Hoonah Angoon Borough **STATE:** AK

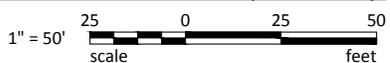
BERTHING FACILITY



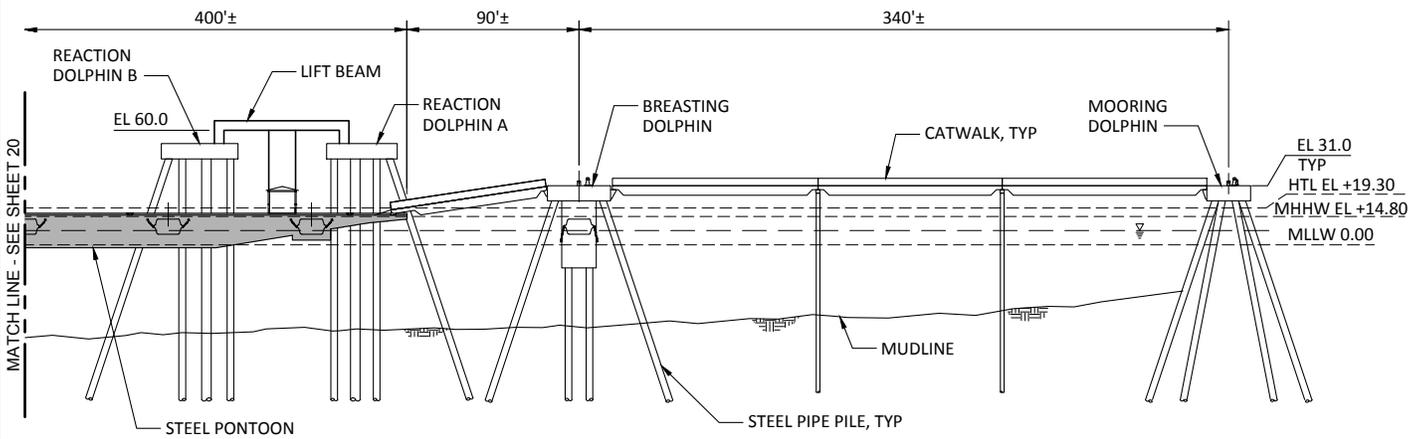
ELEVATION - PROPOSED BERTHING FACILITY (EAST)



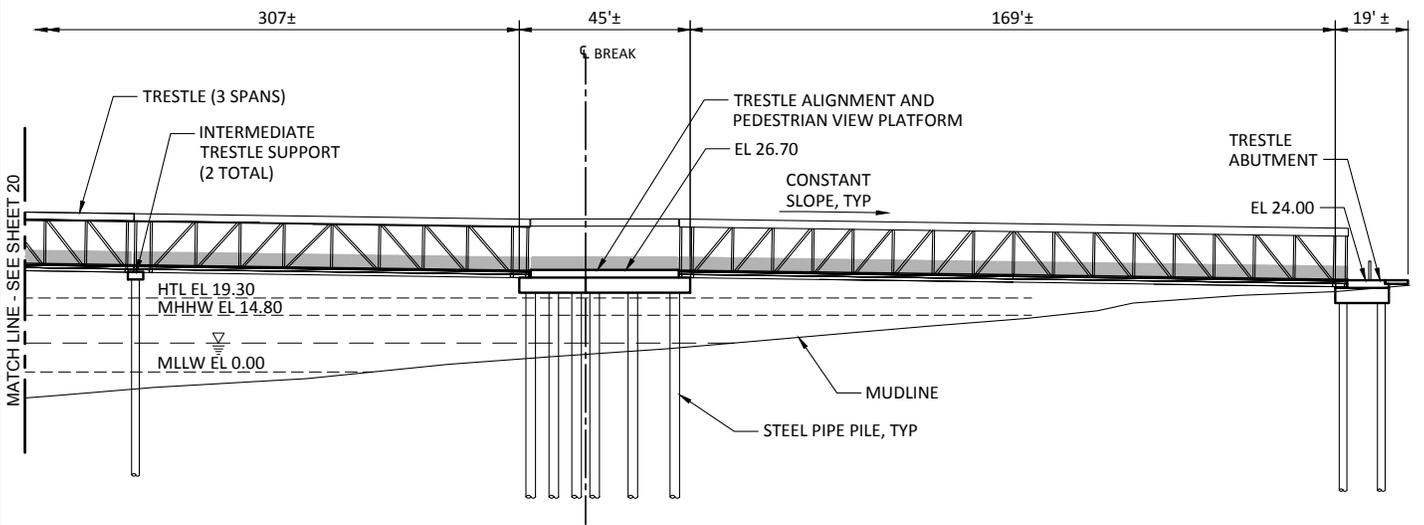
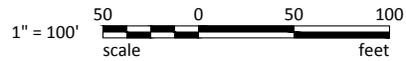
ELEVATION - TRESTLE AND TRANSFER SPAN (NORTH)



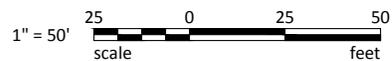
<p>PROPOSED PROJECT: Proposed Hoonah Berthing Facility and Upland Improvements. Includes in-water and upland construction, upland demolition, and other activities.</p> <p>ADJACENT PROPERTY OWNERS:</p> <ol style="list-style-type: none"> 1) US Forest Service (Tongass) 2) City of Hoonah 3) Alaska Department of Natural Resources 	<p>USACE REFERENCE NO: NWS-POA-2012-0404</p> <p>APPLICANT: Huna Totem Corporation</p> <p>LOCATION: 108 Cannery Road, Hoonah, Alaska 99829</p> <p>LAT/LONG: 58.1315306 / 135.465197</p> <p>IN: Icy Strait & Port Frederick</p> <p>NEAR: Hoonah, AK (1.5 miles NW)</p> <p>COUNTY: Hoonah Angoon Borough</p> <p>STATE: AK</p>	<p align="center">BERTHING FACILITY</p> <p align="right">Sheet 20 OF 24</p> <p align="right">Date: 8/4/14</p>
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A
19
ELEVATION - PROPOSED BERTHING FACILITY (WEST)



B
19
ELEVATION - TRESTLE AND TRANSFER SPAN (SOUTH)



PROPOSED PROJECT:
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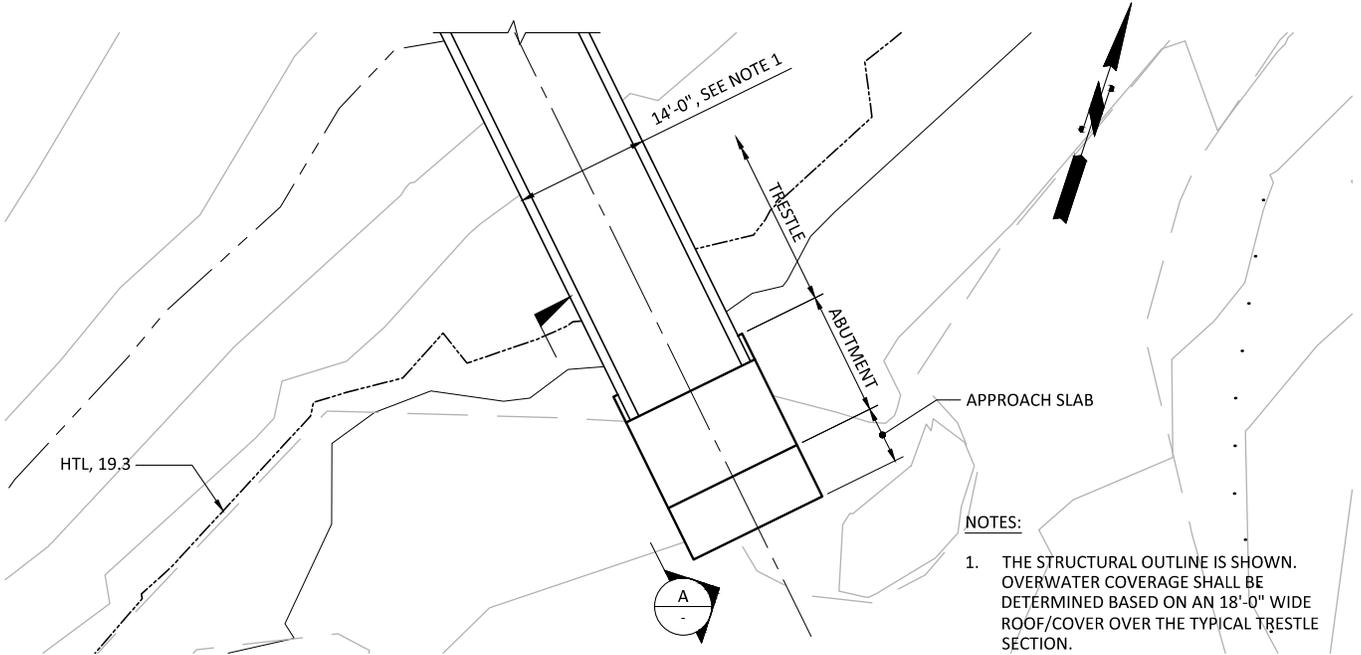
LAT/LONG: 58.1315306 / 135.465197

IN: Icy Strait & Port Frederick

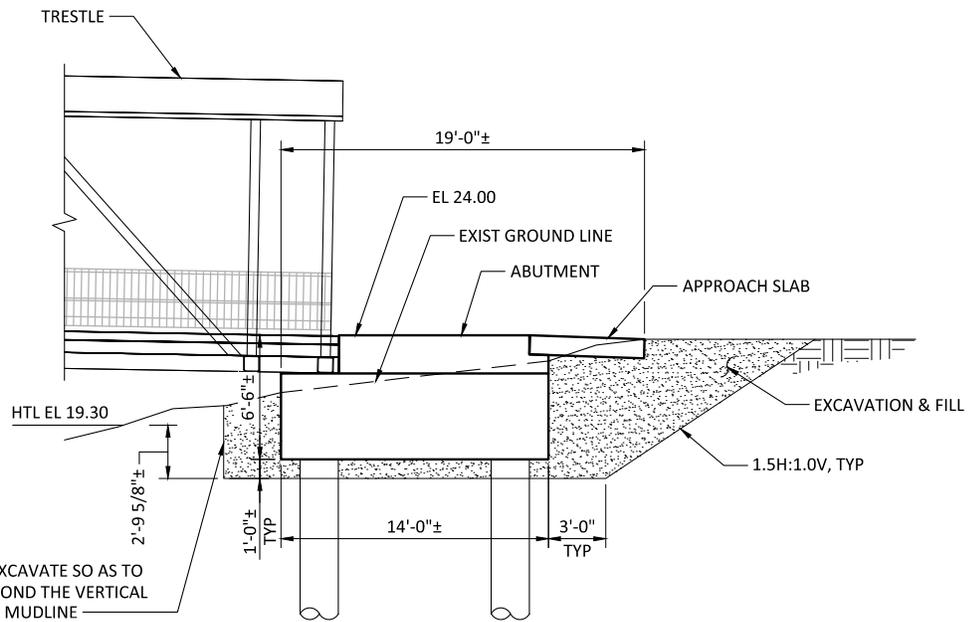
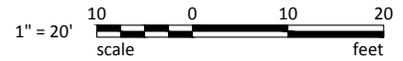
NEAR: Hoonah, AK (1.5 miles NW)

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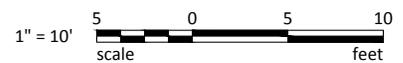
BERTHING FACILITY



1
19 PLAN - TRESTLE ABUTMENT



A SECTION - TRESTLE ABUTMENT



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TRESTLE ABUTMENT



MITIGATION: SHORELINE DEBRIS REMOVAL
 SCALE: NOT TO SCALE

NOTE:

ESTIMATED WEIGHT OF MAN-MADE DEBRIS IS 1 TON.



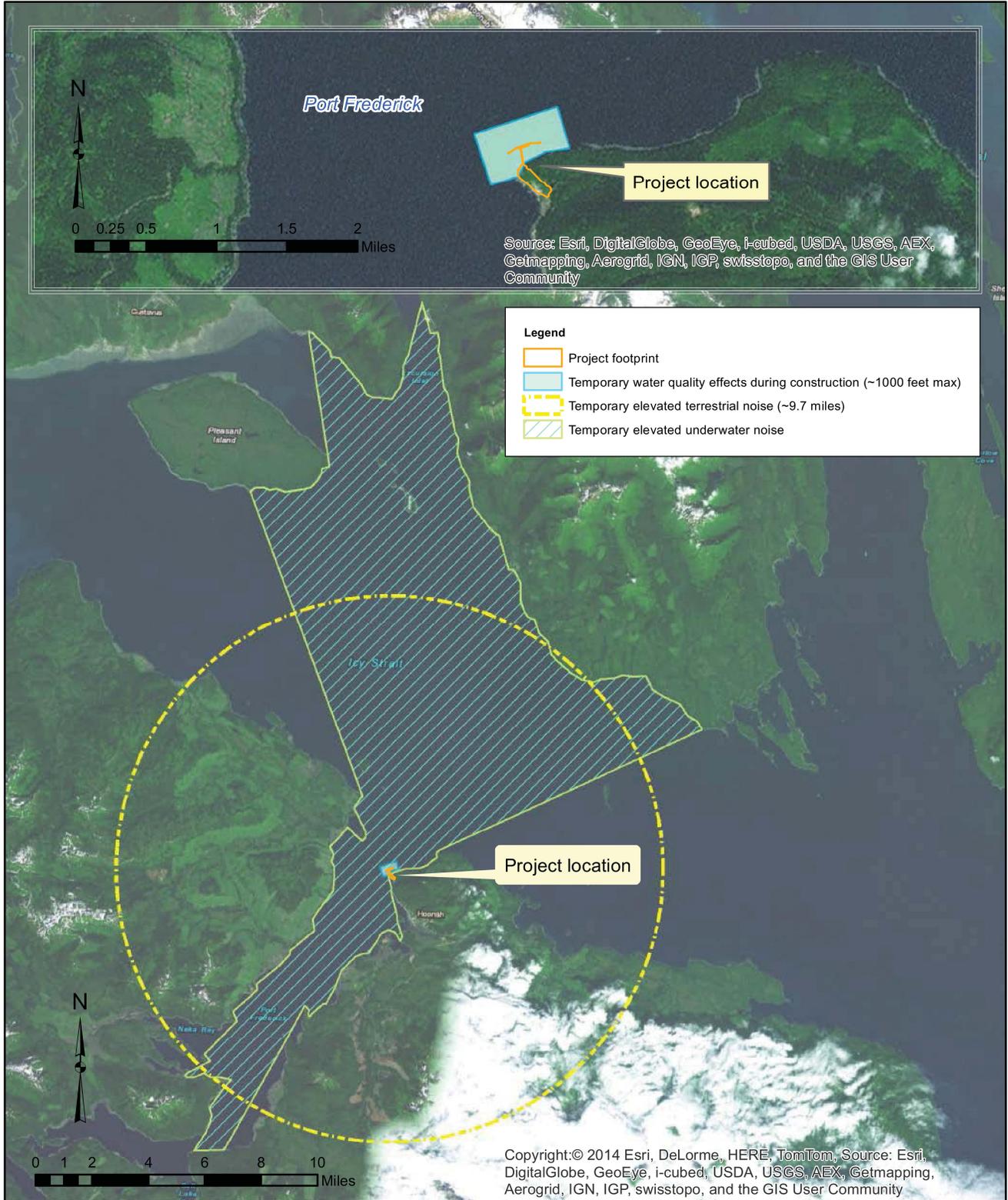
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**MITIGATION:
 SHORELINE DEBRIS REMOVAL**



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ACTION AREA

**Icy Strait Point Cruise Ship Terminal
Request for Incidental Harassment Authorization
Hoonah, Alaska**

**Appendix B
Marine Mammal Monitoring Plan**

APPENDIX B
HUNA TOTEM CORPORATION
ICY STRAIT POINT CRUISE SHIP TERMINAL
MARINE MAMMAL MONITORING PLAN

INTRODUCTION

This monitoring plan has been prepared for the Huna Totem Corporation (HTC) for proposed improvements to the existing Icy Strait Point tourist facility in Hoonah, Alaska (proposed project). The plan has been prepared as an appendix to, and in support of, a request for an Incidental Harassment Authorization (IHA) under the Marine Mammal Protection Act (MMPA) and the Biological Evaluation (BE) for Section 7 consultation with National Marine Fisheries Service (NMFS) under the Endangered Species Act (ESA).

This marine mammal monitoring plan is designed to ensure that the project does not result in Level A harassment to marine mammals within the action area (as identified in the IHA application and BE), and to monitor and record the extent of Level B harassment. For this reason the project will not result in Level A takes, and the project does not require a Letter of Authorization. Please refer to the IHA application and/or BE for a detailed discussion of the project and effects.

Nine marine mammal species, subspecies, or distinct population segments (DPSs) have known distribution ranges that include the portion of Icy Strait/Port Frederick in which construction activities will occur. These are humpback whale (*Megaptera novaeangliae*), Eastern and Western DPS Steller sea lion (*Eumatopius jubatus*), harbor seal (*Phoca vitulina*), Dall's porpoise (*Phocoenoides dalli*), gray whale (*Eschrichtius robustus*), harbor porpoise (*Phocoena phocoena*), killer whale (*Orcinus orca*), minke whale (*Balaenoptera acutorostrata*), and Pacific white-sided dolphin (*Lagenorhynchus obliquidens*).

The project will require pile installation within the waters of Icy Strait/Port Frederick, which has the potential to generate elevated levels of underwater and terrestrial noise that could exceed established injury and disturbance thresholds for marine mammals. In order to ensure that no marine mammals are exposed to levels of underwater noise that exceed the established thresholds for Level A take, the area within approximately 100 meters of pile driving activity (also referred to as the "marine mammal buffer zone") will be monitored during pile driving. Pile installation will not commence, or will be suspended temporarily, if any marine mammals are observed within this marine mammal buffer zone. Additionally, the area within the Level B harassment threshold (the area between approximately 100 and 2,150 meters from pile driving activity) also will be monitored for the purpose of documenting and reporting any Level B takes of marine mammals authorized under the IHA for this project.

DISCUSSION

Tables 1 and 2 show the underwater and terrestrial injury and disturbance thresholds that NMFS has established for marine mammals (Tables 1 and 2).

Table 1. Underwater Injury and Disturbance Threshold Decibel Levels for Marine Mammals

Criterion	Criterion Definition	Threshold*
Level A harassment	PTS (injury) conservatively based on TTS**	190 dB RMS for pinnipeds 180 dB RMS for cetaceans
Level B harassment	Behavioral disruption for impulsive noise (e.g., impact pile driving)	160 dB RMS
Level B harassment	Behavioral disruption for non-pulse noise (e.g., vibratory pile driving, drilling)	120*** dB RMS

*All decibel levels referenced to 1 micropascal (re: 1 μ Pa). Note all thresholds are based off root mean square (RMS) levels

** PTS=Permanent Threshold Shift; TTS=Temporary Threshold Shift

***The 120 dB threshold may be adjusted slightly if background noise levels are at or above this level.

Table 2. Terrestrial Injury and Disturbance Threshold Decibel Levels for Pinnipeds

Criterion	Criterion Definition	Threshold*
Level A harassment	PTS (injury) conservatively based on TTS**	None established
Level B harassment	Behavioral disruption for harbor seals	90 dB RMS
Level B harassment	Behavioral disruption for non-harbor seal pinnipeds	100 dB RMS

*All decibel levels referenced to 20 micropascal (re: 20 μ Pa). Note all thresholds are based off root mean square (RMS) levels

** PTS=Permanent Threshold Shift; TTS=Temporary Threshold Shift

Based on the results of the noise attenuation analysis for this project, it has been determined that the 190 dBRMS Level A harassment (injury) threshold for underwater noise for pinniped species could be exceeded at a distance of up to approximately 22 meters during impact pile driving activities, and the 180 dBRMS Level A harassment (injury) threshold for cetacean species could be exceeded at a distance of up to approximately 100 meters during impact pile driving activities. Additionally, the 160 dB RMS Level B harassment (behavioral disruption) for underwater noise for pinniped and cetacean species could be exceeded at a distance of up to approximately 2,150 meters during impact pile driving.

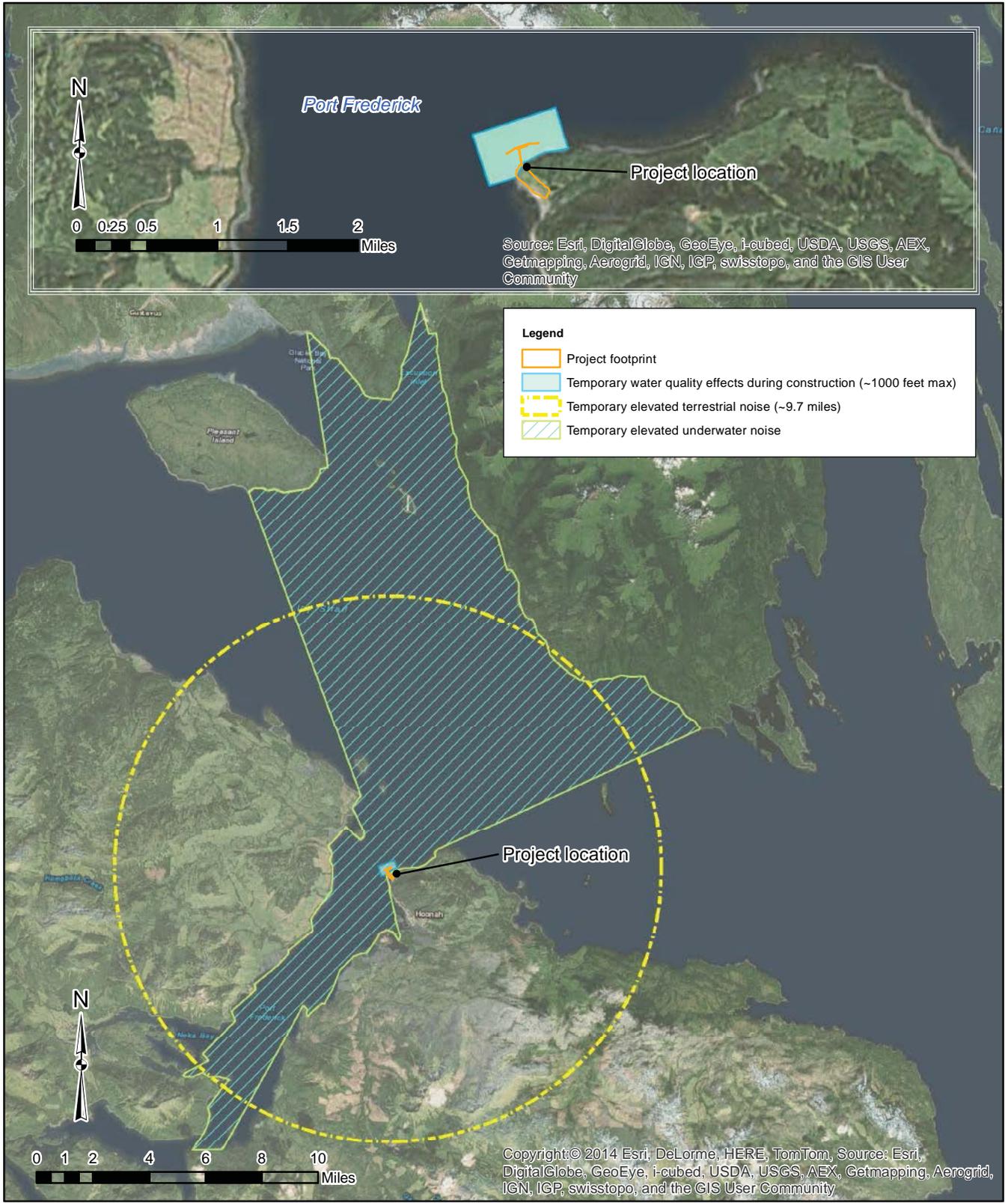
In order to avoid injury of marine mammals within the action area, the area within 100 meters of pile driving activity will be monitored and maintained as marine mammal buffer area in which pile installation, will not commence or will be suspended temporarily if any marine mammals are observed within the area of potential disturbance. This area will be monitored by one qualified field monitor stationed onshore or on a work barge.

The area within the Level B harassment threshold (the area between approximately 100 and 2,150 meters from pile driving activity) also will be monitored by the field monitor stationed onshore or on a work barge. In addition, a second qualified field monitor will be stationed on either Halibut Island or on a vessel traveling approximately along the 2,150 meter limit of the Level B harassment zone. Marine mammal presence within this Level B harassment zone, if any,

will be monitored, but pile driving activity will not be stopped if marine mammals are found to be present. Any marine mammal documented within the Level B harassment zone during impact driving would constitute a Level B take (harassment), and will be recorded and reported as such.

TERRESTRIAL NOISE

The loudest piece of equipment to be used at the site is an impact pile driver, which typically produce peak terrestrial noise levels of approximately 110 dB peak (BergerABAM 2014). The Level B harassment threshold for harbor seals is 90 dB RMS and for non-harbor seal pinnipeds is 100 dB RMS. A terrestrial noise attenuation analysis was performed using a Practical Spreading Loss model (BergerABAM 2014). The results of the analysis indicated that the 100 dB RMS threshold for non-harbor seal pinnipeds could be exceeded out to a distance of approximately 38 meters, while the 90 dB RMS threshold for harbor seals could be exceeded out to a distance of approximately 97 meters. Since this area is entirely within the area that would be maintained as a marine mammal buffer area, no marine mammals would be exposed to any terrestrial noise levels above the established Level B harassment threshold.



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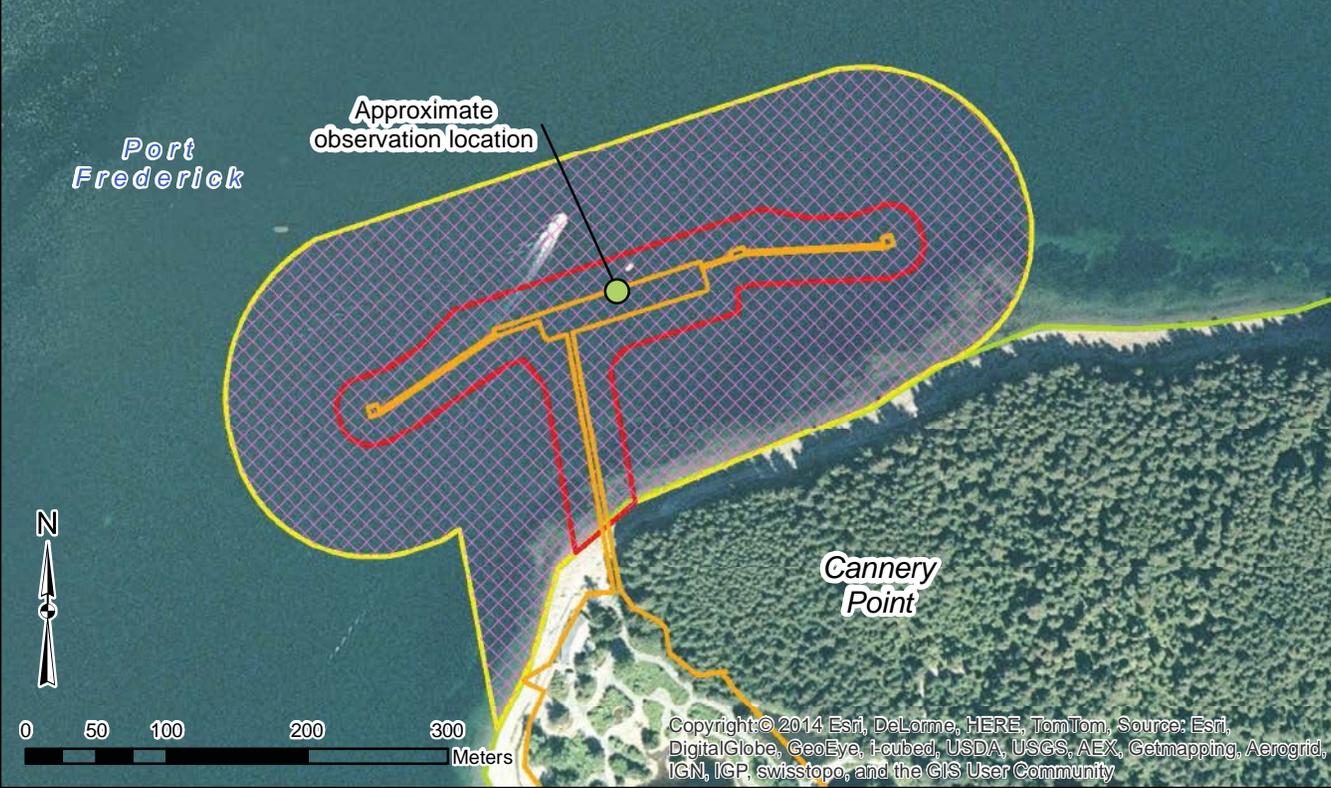
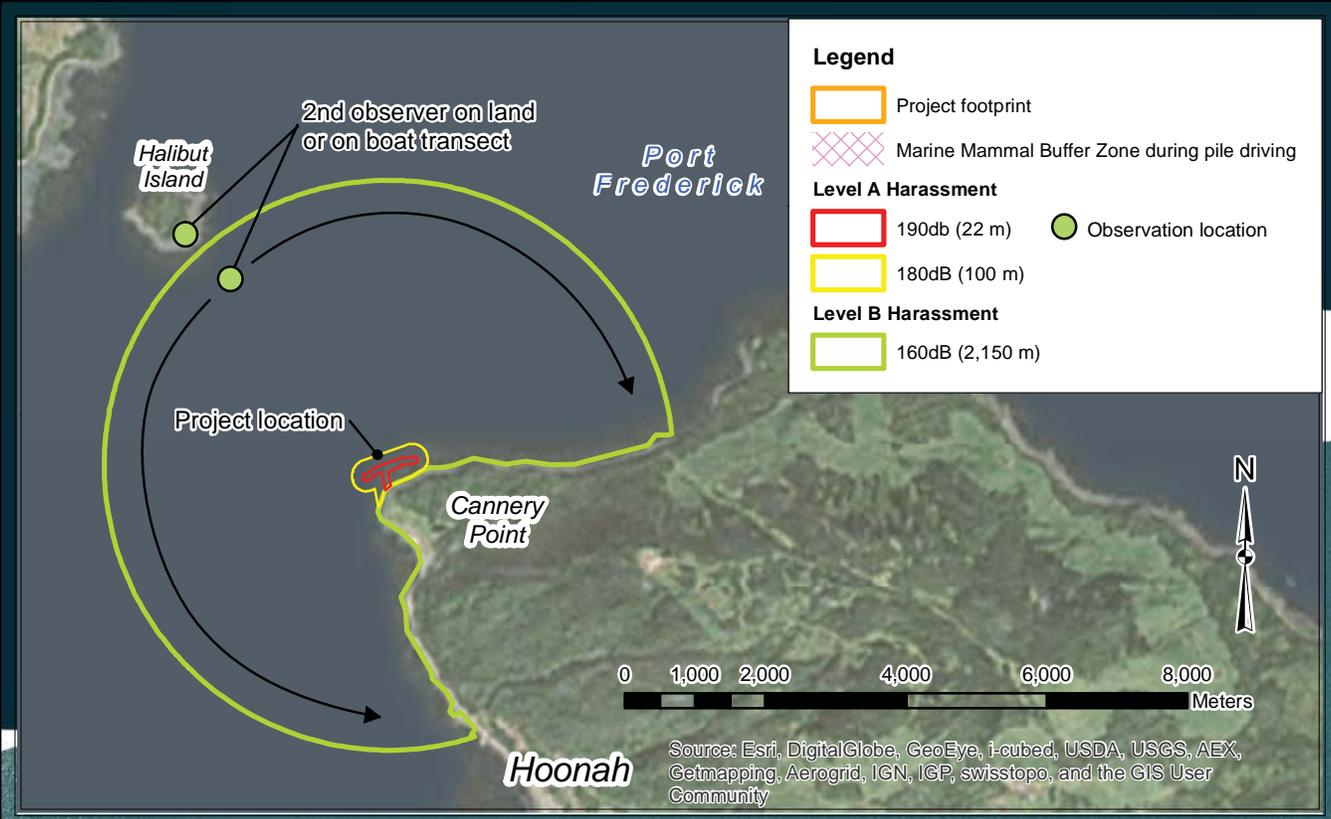
Appendix B - Marine Mammal Monitoring Plan

Figure B-1: Action Area

MONITORING PROTOCOL

Marine mammal monitoring during the project will consist of the following procedure.

1. Two individuals meeting the minimum qualifications identified below will be present on site (on land or dock) at all times during pile driving activities.
2. Pile driving will commence each day with soft-start measures to allow for any marine mammals to move away from the noise source and reduce the likelihood of noise-related injury. Pile driving will commence with a gradual ramping up of piling power over 15 to 20 minutes until full operational power is achieved.
3. The area will be monitored by two qualified observers during pile driving (Figure C-2). One individual will be stationed either on the pile driving rig or in the immediate vicinity, and will have clear line of sight views of the entire marine mammal buffer zone. This individual will be in charge of monitoring the marine mammal buffer zone (the 100 meter radius). A second individual will be stationed on either Halibut Island or on a vessel traveling the perimeter of the Level B harassment zone. Both monitors will conduct monitoring within the Level B harassment zone (the 2,150 meter radius). The monitoring staff will record any presence of marine mammals by species, will document any behavioral responses noted, and record Level B takes when sightings overlap with pile installation activities.
4. The individuals will scan the waters within each monitoring zone activity using binoculars (Vector 10X42 or equivalent), spotting scopes (Swarovski 20-60 zoom or equivalent), and visual observation.
5. The area within which the Level A harassment thresholds could be exceeded (the 100 meter radius) will be maintained as a marine mammal buffer zone, in which impact pile driving will be shut down immediately if any marine mammal is observed with the area.
6. The area within which the Level B harassment thresholds could be exceeded (the 2,150 meter radius) will also be monitored for the presence of marine mammals. Marine mammal presence within these zones, if any, will be monitored but pile driving activity will not be stopped if marine mammals were found to be present. Any marine mammal documented within the Level B harassment zone will constitute a Level B take, and will be recorded and used to document the number of take incidents.
7. If waters exceed a sea-state which restricts the observers' ability to make observations within the marine mammal buffer zone (the 100 meter radius) (e.g. excessive wind or fog), impact pile installation will cease until conditions allow the resumption of monitoring.
8. The waters will be scanned 20 minutes prior to commencing impact pile driving activities and during all pile driving activities. If marine mammals enter or are observed within the designated marine mammal buffer zone during or 20 minutes prior to impact pile driving, the monitors will notify the on-site construction manager to not begin or to cease work until the animal has moved outside the designated radius.
9. The waters will continue to be scanned for at least 30 minutes after pile driving has completed each day.



PROPOSED PROJECT:
 Proposed Hoonah Berthing Facility and Upland Improvements. Includes in-water and upland construction, upland demolition, and other activities.

ADJACENT PROPERTY OWNERS:

- 1) US Forest Service (Tongass)
- 2) City of Hoonah
- 3) Alaska Department of Natural Resources

USACE REFERENCE NO: NWS-POA-2012-0404
 APPLICANT: Huna Totem Corporation
 LOCATION: 108 Cannery Road, Hoonah, Alaska 99829
 LAT/LONG: 58.1315306 / 135.465197
 IN: Icy Strait & Port Frederick
 NEAR: Hoonah, AK (1.5 miles NW)
 COUNTY: Hoonah Angoon Borough STATE: AK

Appendix B - Marine Mammal Monitoring Plan
 Figure B-2: Monitoring location and buffer zones

Sheet 2 OF 2 Date: 8/8/14

MINIMUM QUALIFICATIONS FOR MARINE MAMMAL OBSERVERS

1. Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with the ability to estimate target size and distance. Use of binoculars may be necessary to correctly identify the target.
2. Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).
3. Experience or training in the field identification of marine mammals (i.e. pinnipeds).
4. Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations.
5. Writing skills sufficient to prepare a report of observations that will include such information as the number and types of marine mammals observed; the behavior of marine mammals in the project area during construction; the dates and times when observations were conducted; the dates and times when in-water construction activities were conducted; the dates and times when marine mammals were present at or within the defined disturbance zone; the dates and times when in-water construction activities were suspended to avoid incidental harassment by disturbance from construction noise; etc.
6. Ability to communicate orally, by radio or in person, with project personnel to provide real time information on marine mammals observed in the area.

REFERENCES

BergerABAM. 2014. Biological Evaluation. Icy Strait Point Cruise Ship Terminal. Hoonah, Alaska. August 2014