GRAVINA ACCESS PROJECT

Draft Archeological Reconnaissance Survey

Agreement 36893013
DOT&PF Project 67698
Federal Project ACHP-0922(5)

Prepared for
STATE OF ALASKA
Department of Transporation
and Public Facilities
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I-Executive Summary

Archeological and historical sites are sensitive to physical disturbance and could be affected by development associated with the Gravina Access Project, which is intended to improve transportation access between Ketchikan on Revillagigedo Island and Gravina Island. A reconnaissance level field survey of the project area was conducted during May 2001 to evaluate the cultural resources potential of the seven alternatives currently under consideration.

The principal impact issue for cultural resources is the loss or degradation of prehistoric and historic archaeological sites, either through direct disturbance during construction or indirect disturbance due to changes in public accessibility. Alternatives F3, G2, and G3 are the most archaeologically sensitive of the seven alternatives currently under consideration. The northern shores of both Pennock and Gravina Islands along Alternative F3 were heavily occupied during the first half of the twentieth century. These are areas of both known historic sites and high archeological potential. The proposed ferry terminals for Alternatives G2 and G3 along the Ketchikan waterfront are in areas with little archeological potential. However, the ferry landings on Gravina Island, near Lewis Point and southeast of East Clump bight, respectively, are in areas of both known historic and prehistoric sites, and high archeological potential.

Alternatives C3, C4, D1, and G4 are the least archeologically sensitive. Alternatives C3, C4, and D1, which would originate on the mountain slope above Ketchikan and terminate on Gravina Island in the developed area of the Ketchikan Airport, are in areas with little archeological potential. Alternative G4, involving two new terminals adjacent to the existing airport ferry terminals, is also in an area with little archeological potential.

The principal measure to mitigate the impacts on cultural resources is a commitment to comply with Section 106 of the National Historic Preservation Act. Cultural resources should continue to be considered through all phases of the project. Once a final route is selected, cultural resources within the project's area of potential effect should be identified and evaluated in accordance with the requirements of 36 CFR 800.4. In consultation with appropriate land managing agencies and the Alaska State Historic Preservation Officer, specific measures should be developed and implemented to mitigate any identified adverse impacts.

1—Introduction

The following describes a reconnaissance level field survey, undertaken during May 2001, of areas of the Gravina Access Project (Figure 1). This work is part of archaeological research designed to evaluate cultural resources that could be affected by the project and to meet the requirements of Section 106 of the National Historic Preservation Act of 1966.

The U. S. Congress has allocated funds to a special project to improve transportation access between Ketchikan and Gravina Island. This link will provide access to the Ketchikan International Airport and to the island itself. The Alaska Department of Transportation and Public Facilities (ADOT&PF) has contracted with HDR Alaska, Inc. to define issues of concern and identify environmental impacts of a range of alternatives. The seven alternatives currently under consideration are designated C3, C4, D1, F3, G2, G3, and G4 (Figure 2).

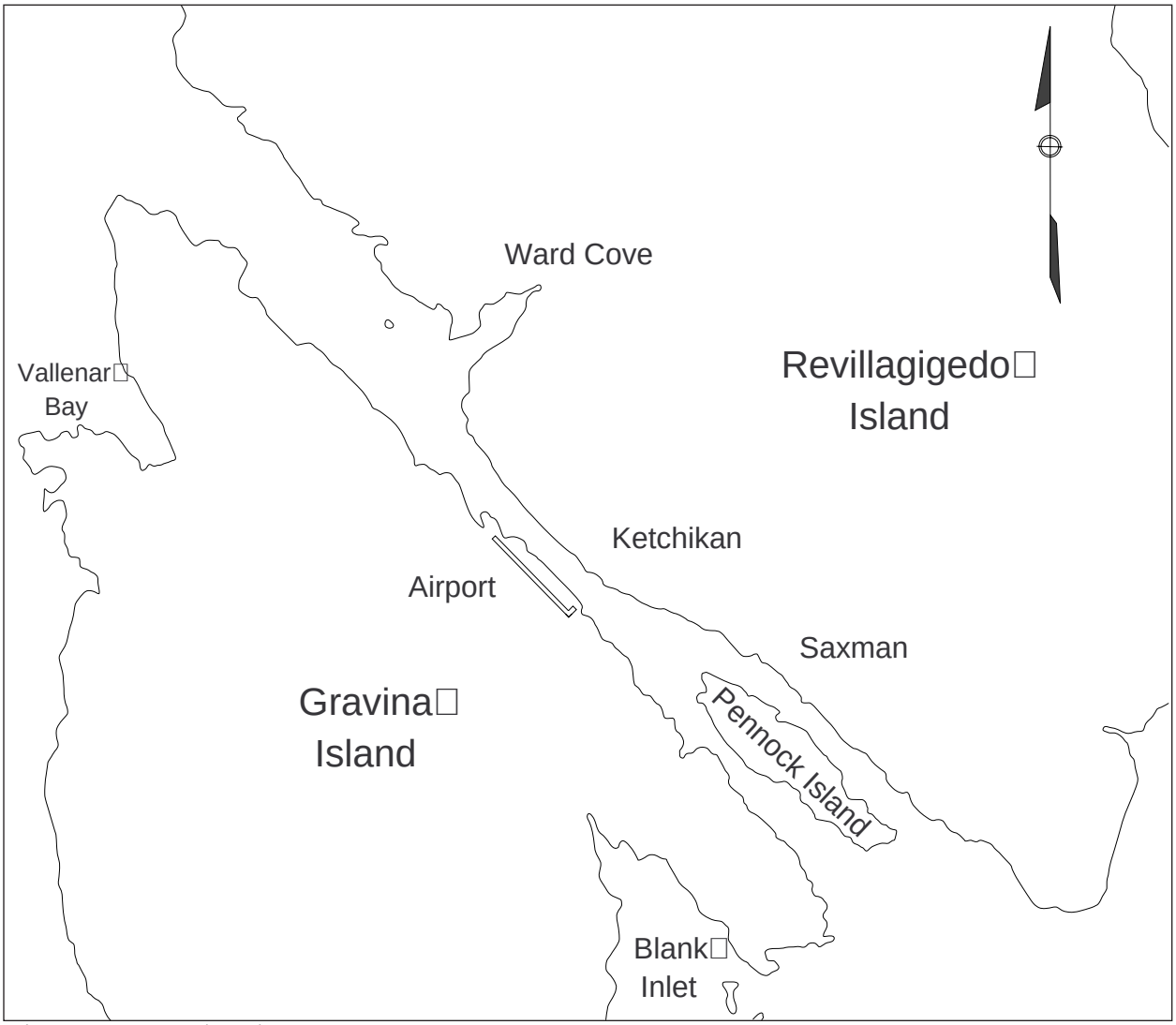


Figure 1. General Project Area

Figure 2
Gravina Access Project
Study Area:
Access Alternatives

Revillagigedo Island

Tongass Narrows

Gravina Island

Pennock Island

Streams

Roads

Ketchikan City Limits

Proposed Airport Circulation Road

Bodies of Water

Access Alternatives

C3 - 120-foot bridge

C3 - 200-foot bridge

C4 - 200-foot bridge

D1 - 120-foot bridge

F3 - 200-foot bridge

G2 - Additional Ferry

G3 - Additional Ferry

G4 - Additional Ferry

0 0.5 1 Miles

A Gateway to the Future
Gravina Access Project

2—Overview

2.1 Archeology

To date, archaeologists have recorded more than 2,100 sites in southeastern Alaska. A large percentage of these are shell middens, although numerous other types of prehistoric and historic resources are known (Autrey 1992). A four-part cultural sequence for southeastern Alaska proposed by Davis (1990:197) includes a Paleomarine tradition (9000-4500 B.C.), a Transitional stage (4500-3000 B.C.), a Developmental Northwest Coast stage (3000 B.C. to European contact), and a Historic period.

The Paleomarine tradition is used to define the earliest cultural stage yet identified within coastal southeastern Alaska. It is characterized by a well-developed microblade industry with wedge-shaped microblade cores, few or no bifacial tools, and an economy based on coastal-marine subsistence (Davis 1990:197). The Paleomarine tradition is followed by a transitional stage. While this stage has not been well defined, its existence is inferred because of the appearance of a ground stone tool industry that became dominant over the microblade and unifacial stone tool industry by 5,000 years ago. The Developmental Northwest Coast stage is differentiated from the Paleomarine and transitional stages by the presence of shell midden deposits, ground stone and bone technology, human burials, and the establishment of large settlements or winter villages, specialized camps, and fortifications.

Previous archaeological fieldwork in the Ketchikan area has been limited to small-scale surveys and testing of a prehistoric site at Refuge Cove on Rivellagigedo Island (Douglas Reger, personal communication 1999). Douglas Reger and Robert Shaw (1982:3) of the Alaska Division of Geological and Geophysical Surveys examined reported grave locations on Pennock Island in the early 1980s, and Charles Mobley inventoried U.S. Coast Guard facilities at Base Ketchikan and Point Higgins in 1995. Most recently, John Autrey and Martin Stanford of the Tongass National Forest conducted a survey in 2000 along the northeastern shore of Gravina Island in the vicinity of the airport. Their survey added four additional historic sites, including one with a prehistoric component, to the AHRS.

2.2 Ethnography

The early historic Native peoples of southeastern Alaska represent three broad groups: the Tlingit, the Alaskan Haida (Kaigani), and the Tsetsuat. Of these, the Tlingit are the most widespread and numerous within the region. Ethnographic Tlingit culture embodies most of what is usually thought of as northern Northwest Coast culture. This culture included an economy based upon fish (particularly anadromous fish); settled villages; a sophisticated wood working industry; a highly developed and distinctive art form; a social organization structured around lineages, clans, and phratries; and a ritual life focused upon totemism, shamanism, and the attainment of status through potlatching.

At least one principal village was established in each Tlingit tribal area. It was occupied in winter, but was usually deserted in summer when families dispersed to fishing and hunting camps. Village sites were preferably located on sheltered bays with views of the approaches. A sandy beach was important for landing canoes and for access to salmon streams, fresh water, timber, and hunting, fishing, and gathering

grounds. Aboriginal houses were planked rectangular structures, with excavated centers and low-pitched gabled roofs. They could accommodate six or more families with slaves, often totaling 40 to 50 persons. Single houses or whole villages were occasionally surrounded by palisades (de Laguna 1990:207).

The Tlingit were distributed in a number of localized, clan-based, territorial groups across southeastern Alaska, with some 10 or more such groups being known. At the time of historic contact, the Ketchikan area was situated within the territory of the Tongass (Tan-ta kwan) Tlingit, which included the southern portion of Revillagigedo Island; Annette, Gravina, and Duke Islands; and the area around the mouth of Portland Canal (de Laguna 1990:204).

The last village of the Tongass before they moved to Ketchikan was south of Nakat Inlet on Tongass Island (Goldschmidt and Haas 1946:140). There was a Tongass summer fishing camp at Ketchikan Creek by 1881 (Welsh 1999:6), and the 1883 *Coast Pilot* noted three Indian Houses in the area. However, except for a totem pole, all evidence of this Native settlement has apparently been destroyed by modern construction (Sealaska Corporation 1975:90).

On Gravina Island, at the head of Vallenar Bay, there were Tongass Wolf clan smokehouses. At Bostwick Inlet, there was a large summer village that was used by the Tongass for drying fish and meat, and gathering berries (Goldschmidt and Haas 1946:142).

Saxman, a village two and one-half miles south of Ketchikan, was founded in 1894 by Cape Fox Natives (Roppel 1998:10-11). Early in the historic period, the Saxman Tlingit claimed all of Revillagigedo Island:

> Apparently at one time George and Thorne Arms and Carroll Inlet and the Tongass Narrows area were a portion of the Saxman territory…Though this area is [now] claimed by the Tongass people, and their right is recognized by the Saxman people, both groups actually use the area for hunting and fishing at the present time (Goldschmidt and Haas 1946:134, 140).

2.3 History

Captain George Vancouver sailed along the western shore of Gravina Island in 1793, "but did not explore or name any of the small bays" (Roppel 1998:229).

Ketchikan began as a fishing town, although it quickly grew into a regional hub supplying surrounding communities and nearby mining and logging camps. Settlement began in the area around Ketchikan Creek, where a saltery was built in 1884. A second saltery was located at Ward Cove at about the same time. The Ketchikan Cannery was established in 1889, and a year later George Clark and Mike Martin opened a trading post at the mouth of Ketchikan Creek (Welsh 1999:6).

Ketchikan was a supply center during the gold rush of the 1890s. The resulting influx of settlers and gold miners increased the population to 454 by 1900, the year Ketchikan was incorporated as a city. The city charter described the town as the center of the Ketchikan Mining District and:

> the distributing depot and furnishing station for the vast mining industries therein; that said town is the great high-way of commerce between the state and Alaska on the inland passage, and said point is the only available anchorage on the Tongass Narrows...

As the city outgrew the area surrounding Ketchikan Creek, the "Newtown" area, north of the present day tunnel, quickly developed into an important part of the city (Welsh 1999:6).

3—Study Methods

3.1 Literature Review

All pertinent archeological literature, U.S. surveys, and the records of the Alaska Heritage Resources Survey (AHRS) were reviewed to compile information about previously recorded archaeological and historical sites. The AHRS lists approximately 250 archeological and historical properties in the project area. The vast majority of these are historic buildings concentrated in Ketchikan. Other recorded sites in Ketchikan include a former city garbage dump (KET-435), two totem sites, a burial locale, and culturally modified trees (CMTs) on the U.S. Coast Guard base. There are five recorded properties in Saxman, including two petroglyph sites (one with canoe runs), a totem park, the Alaska Native Brotherhood Hall, and a clanhouse.

Nineteen properties in Ketchikan and Saxman are listed on the National Register of Historic Places, and another 30 have been determined eligible for the Register. Among these are the Headquarters Building of the 16th Lighthouse District (KET-279) and the Coast Guard Supply Warehouse (KET-356) in Ketchikan, and the Chief Kashakes House in Saxman. The latter, built in 1889, is associated with two totem poles and three burials.

On Pennock Island, opposite Saxman, there is a late nineteenth and early twentieth century cemetery (Sealaska Corporation 1975:106). This was originally a burial ground of the Saxman Tlingit, although it was also used by the people of Ketchikan (Roppel 1998:8).

The Port Gravina site (KET-027), on Gravina Island at the northern end of the Ketchikan airport runway (Figure 3), was established in 1893 by a group of Tsimshians from Metlakatla who had attended the Sitka Industrial Training School (Roppel 1998:226). Originally consisting of a sawmill,

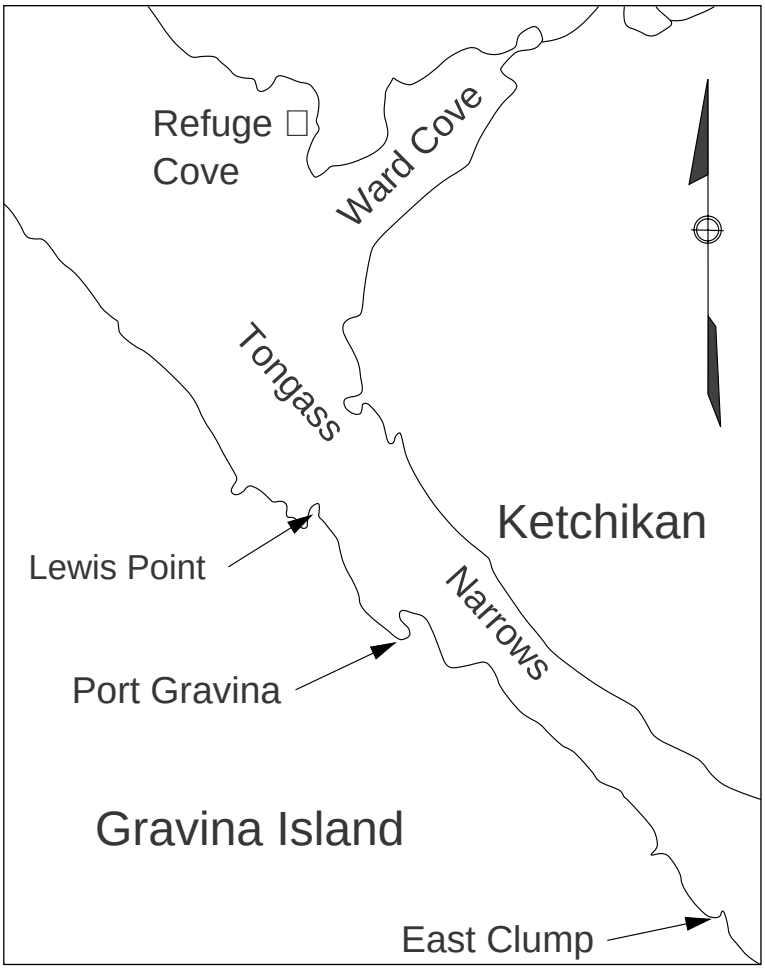


Figure 3. Ward Cove, Ketchikan, and Port Gravina (Redrawn from Roppel 1998)

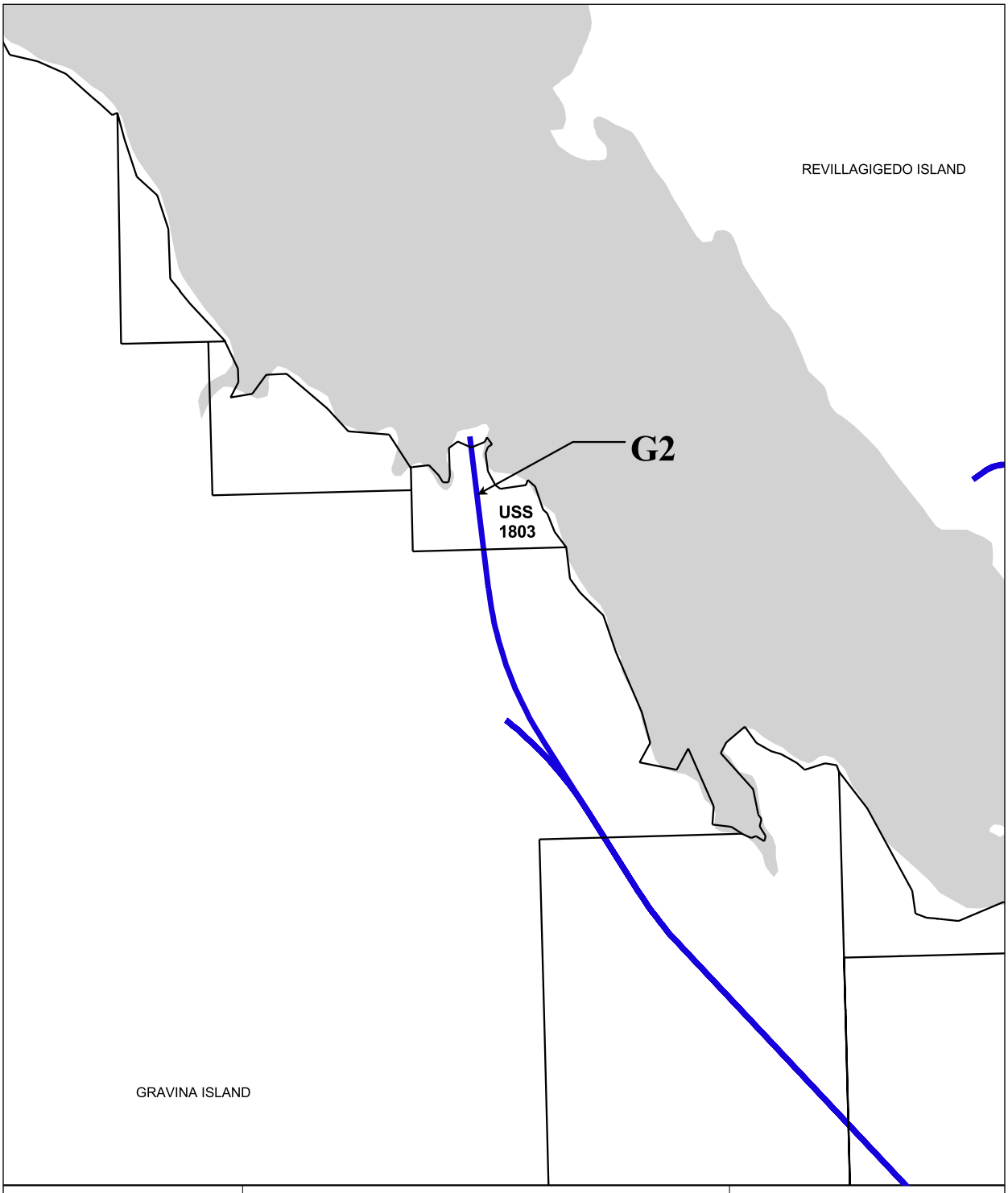
residences, a store, a government school, and a church, Port Gravina was the first business in Alaksa to be built, managed, and operated entirely by Alaskan Natives. The settlement was abandoned after the sawmill and more than half of the other buildings were destroyed by fire in 1904 (Roppel 1998:227).

Nearby is the Airport Fence, Pilings, and Collapsed Structure site (KEN-669). This property is composed of fence posts, a series of approximately 100 pilings, and a collapsed, 15 by 30-foot frame structure. The Airport Bricks and Pilings site (KET-668) consists of the collapsed remnants of a small dock, wharf, or cabin that was on pilings. Associated with the structural remains are bricks, bottle fragments, and rusted machinery parts. Near Lewis Point are the Lewis Cove Sites (KET-670), consisting of shell midden; the remnants of a small, moss-covered structure; and the collapsed remains of a milled lumber structure on pilings (Figure 4).

The Lewis Point area was homesteaded by John E. Olafson (U.S. Survey 1803) (Figure 5). According to the field notes for the U.S. Survey (Dahlquist 1928), Olafson had approximately 1.5 acres under cultivation at the time of the survey. His other improvements consisted of two houses and a shed. Southeast of the airport is the Airport Waterfall Adit (KET-667), a twentieth century prospecting adit.

Although ethnographic accounts mention a number of localities used by the Tlingit in the Ketchikan area, only four prehistoric archaeological sites have been officially recorded on the AHRS. However, much of the project area has not been intensively inventoried, and the possibility of locating additional sites should not be ruled out. The few known prehistoric sites in the project area are along the coast.

Figure 4. Pilings and Tongue-and-Groove Siding from One of the Structures at KET-670


REVILLAGIGEDO ISLAND
G2
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0 500 1000 1500 Feet
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SURVEY LOCATIONS
State of Alaska
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USS 1803

Figure 5

In addition to the properties listed in the AHRS, there are numerous historic sites along the shores of Tongass Narrows mentioned in *Land of Mists...*, Patricia Roppel's (1998) geographical and historical guide to Revillagigedo and Gravina Islands. Roppel only occasionally mentions the condition of any remains at these sites, although her narrative does give a sense of the intensity of historic settlement in the region. Other sites are depicted on various U.S. surveys, which are invaluable sources of detailed information on the early settlement of Gravina and Pennock Islands.

F. H. Fiedler was apparently the first settler on Gravina Island (Roppel 1998:7). His homestead, surveyed in 1913 (U.S. Survey 1081) (Figure 6), was near East Clump (Figure 7), south of a lighthouse reservation (U.S. Survey 1600). South of the Fiedler claim was the homestead of Dan Whipple, who settled on Gravina Island in 1910, but in 1919 moved to a homesite on the northern end of Pennock Island (Roppel 1998:213).

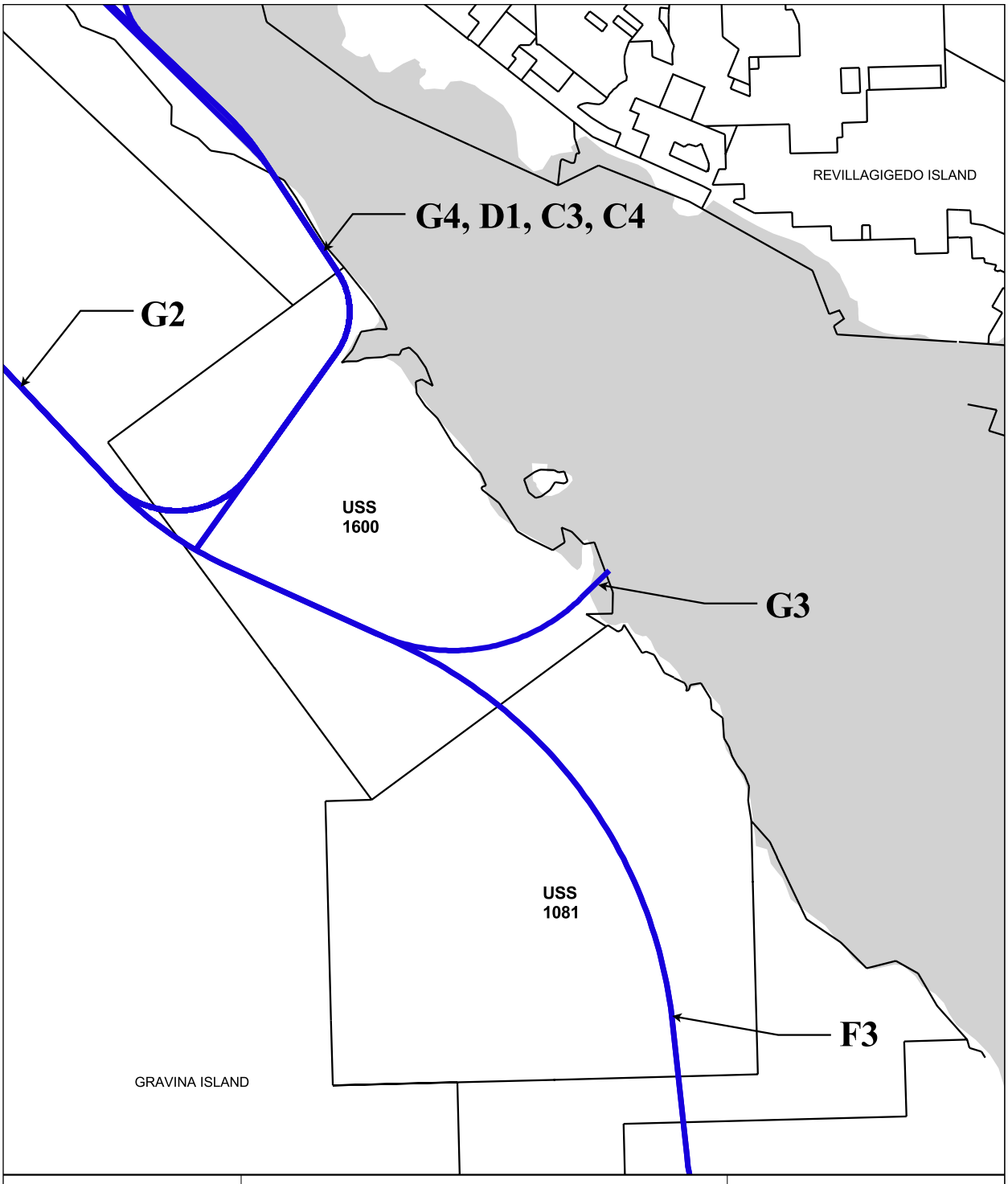
Fiedler's homestead included a tramway and plank walk that extended northeast to southwest across the property. There was a field along the tramway toward the northeastern corner of a tract, and a garden and two drained lakes to the southwest. The lakes were enclosed by an eight-foot high fence. A house, a cement root cellar, and a shed were located near the northeastern corner of the field. The spaded field and garden amounted to approximately fifteen acres (Crowther 1913).

The tramway and plank walk ran over a 35-foot long bridge to the southeastern corner of the house and extended to the northeastern point of the northernmost drained lake. Drainage for the lakes was provided by ditching "in which loose moss (was) packed, the ditches then being covered with soil" (Crowther 1913). Fiedler put in over 10,000 feet of such drains in the lakebeds. Crowther (1913) remarked that "Cabbages, cauliflowers, rutabagas, and potatoes are raised by the ton, finding a ready market in Ketchikan."

Adjoining Fiedler's homestead to the northwest is U.S. Survey 1600, where the U.S. Coast and Geodetic Survey constructed a boathouse and wharf in East Clump bight in 1921. U.S. surveyor Fred Dahlquist (1926) noted that the coastal section of the tract was covered with heavy spruce, hemlock, and cedar, with an undergrowth of berry bushes and "buck brush." Inland areas tended towards muskeg, scattered pine, cedar, and hemlock with frequent areas of open land (Dahlquist 1926). The boathouse and wharf were located in the southeast section of the tract, directly west of East Clump Island. A trail ran across the southeastern section of the survey.

According to long-time Ketchikan residents George (Bud) Beck and Jean Howard (personal communications 2001), Fiedler's wife and children were killed by a prairie fire somewhere in the Midwest. He survived in an irrigation ditch and afterward moved to the wettest place he could find. Mrs. Howard's family occupied the homestead after Fiedler, raising goats and growing vegetables for sale in Ketchikan. Ironically, the house ultimately burned, although the cement walls still exist. Mrs. Howard remembered that the Galloway family lived "right on the beach" near the homestead, and the Dudlar family with "a large house and several children" lived 1/2 mile to the north. The area was occupied until the late 1960s and early 1970s, when the houses were purchased by the State of Alaska and torn down.

The largest settlement on Gravina Island was to the southeast at Clam Cove (Figure 8). Antone Stensland homesteaded there in 1913, and in 1914 the U.S. Forest Service built a boathouse and shipyard. This marine station, which included a one-room school and several houses, operated until about 1950 (Roppel 1998:6-7). Southeast of Clam Cove, U.S. Survey 3536 included a house, wood shed, chicken house, and two trails. According to Robert Q. Pickering's survey notes, the land was covered with cedar, pine, hemlock, and scattered spruce (Pickering 1957).



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Public Facilities

USS 1600, 1081

Figure 6

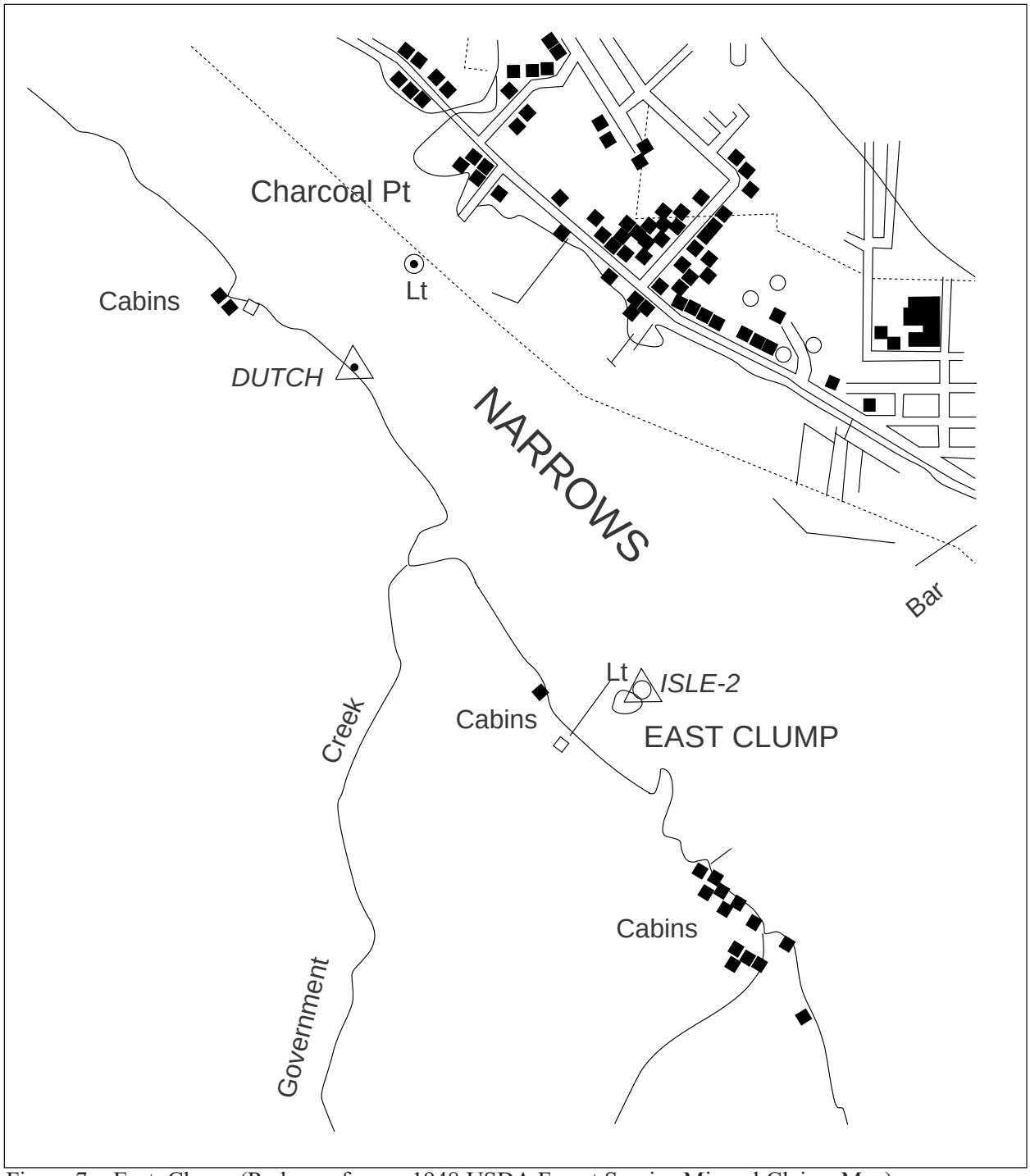


Figure 7. East Clump (Redrawn from a 1948 USDA Forest Service Mineral Claims Map)

On Pennock Island, there were two boathouses and a machine shop in Whisky Cove dating from the late 1910s or early 1920s. Erik Forss also had a ranch at the cove (Roppel 1998:9). The homestead of Carl Dennis (U.S. Survey 1562), just east of Whisky Cove, included a house, boatshed, chicken house, stable, garden, and "cleared land" (Crowther 1924). U.S. Surveys 3094 and 3316 show several more houses along the eastern shore of Pennock Island southeast to Bald Cove (Webber 1954).

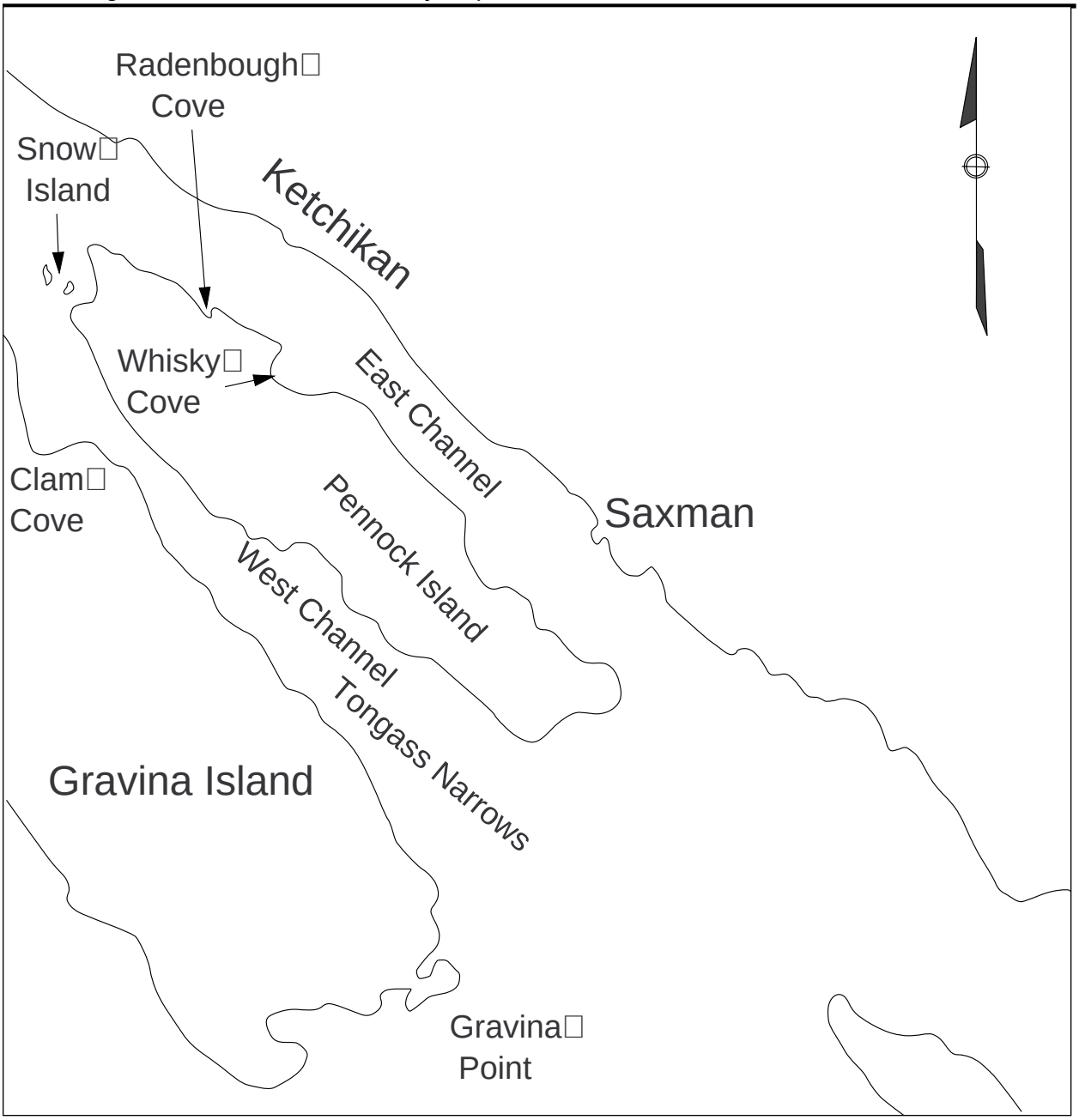


Figure 8. East and West Channels of Tongass Narrows (Redrawn from Roppel 1998)

3.2 Reconnaissance Survey

As defined by *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44717- 44742), a reconnaissance survey is an extensive rather than intensive "walk-over," conducted with little or no subsurface testing. A reconnaissance survey is only a sampling that may locate some (but not all) of the properties that could be affected by a project and allow an evaluation of their significance. However, historic properties in a project area may go undiscovered. Therefore, it must be recognized that "[i]n most cases, areas surveyed in this way will require resurvey if more complete information is needed about specific properties" (*Federal Register* 48(190):44722).

The potential bridge crossing points and ferry terminal locations were located in the field with aerial photographs and a global positioning system. On Gravina and Pennock Islands, the survey was primarily restricted to the forest fringe above the beach. The width of the survey area varied, depending on the terrain and vegetation, from a few to several hundred feet inland. The survey also ranged varying distances northwest and southeast along the shore from the crossing points and terminal locations.

4—Survey Results

4.1 Alternative F3

Bridge alternative F3 would originate on Revillagigedo Island just east of the Nelbro Packing Company dock. Here, the highway is notched into the steep hillside above the beach. Nearby, at 1749 Tongass Avenue, is a wood-framed Craftsman dwelling (Figure 9) similar to many built in the Ketchikan area during the town's 1920s economic boom. This gable-roofed house retains many features indicative of its style, including original 8/1 double-hung windows, wide window casings and trim, exposed rafter tails at the eaves, and rake-supporting brackets and shingle siding at the gable ends. Nonhistoric modifications include a shed-roofed dormer and large picture window on the south side, a shed-roofed addition to the north, composite shingle siding (except at gables), and stone veneer on the foundation walls (Amanda Welsh, personal communication 2001).

On the Pennock Island side of the channel, the landfall of F3 would be near the boundary between U.S. Surveys 1562 and 3316 (Figure 10). There are two historic cabins east of the crossing point. Inland and to the northwest, the ground slopes up more steeply and is studded with bedrock outcrops. There is a good landing beach in front of the cabins, but to the northwest, toward a headland, the bedrock slopes steeply up from the beach. U.S. Survey 3316 (Webber 1954) shows two houses and two sheds in this vicinity,

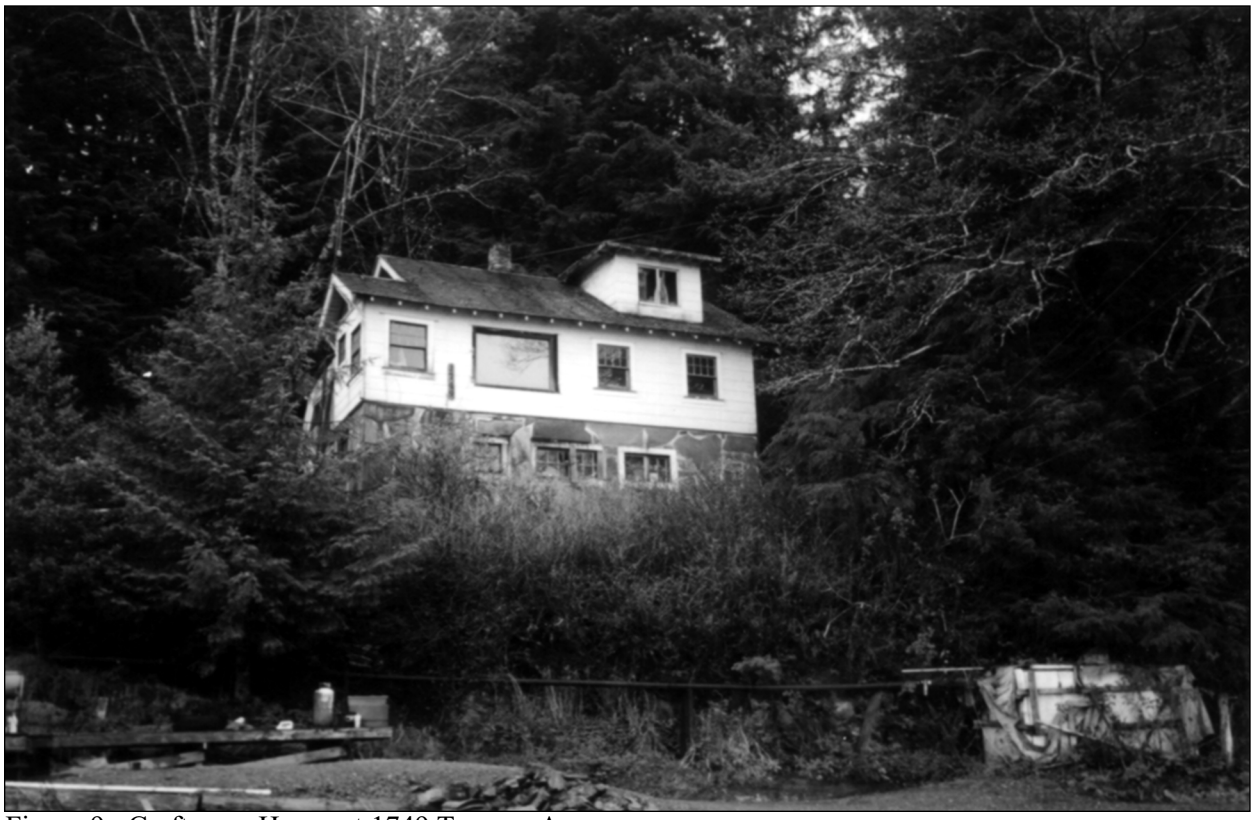
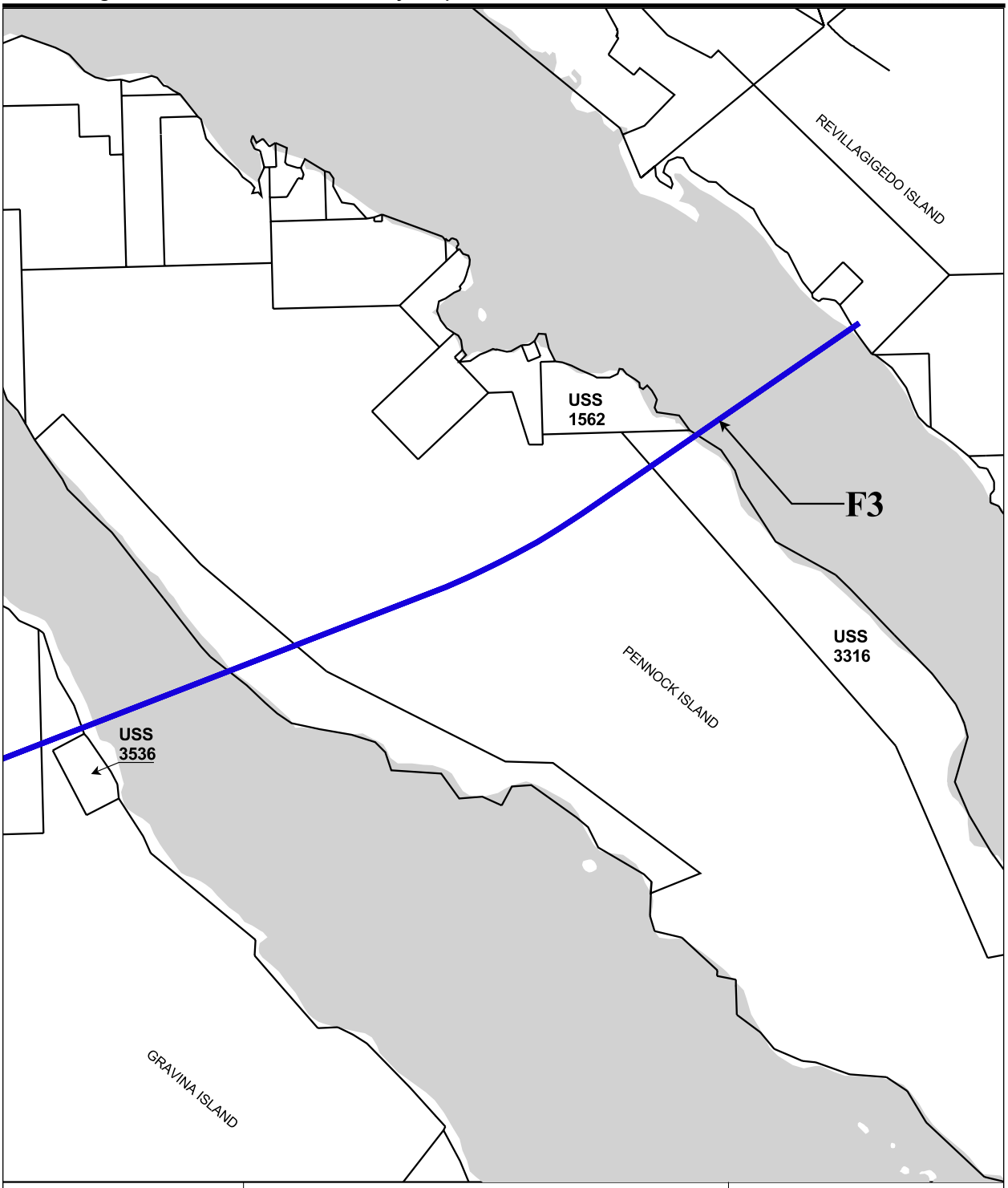


Figure 9. Craftsman House at 1749 Tongass Avenue



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USS 1562, 3316, 3536

Figure 10

although they do not seem to be the same structures noted above. According to Jean Howard (personal communication, 2001), daughter of early Gravina Island settler Vincent Boucher (see above), there were numerous small "shacks" on Pennock Island that miners and fishermen used during the winter. A Tlingit graveyard that once existed at the northern end of Pennock is now mostly destroyed.

Pennock Island slopes up dramatically from east to west. Along West Channel, the shore rises sharply above a boulder-strewn beach. Southeast of a point marked by a channel marker is an old rock quarry:

> On Pennock Island, facing West Channel, is a large gravel pit that Puget Sound Bridge and Dredging Company first used in 1931 for rock for construction of the Thomas Basin breakwater (Roppel 1998:8).

The northern shore of Gravina Island along F3 is much flatter, with a broad beach. Above the 1 to 2 m high beach face, the open forest is dotted with cut stumps, although the larger cedars are still standing. In this area are several CMTs, and the joists and floor boards of a house (Figure 11).

4.2 Alternative G3

Ferry Alternative G3 would originate south of Bar Harbor and north of the Plaza Mall and Carrs grocery store, in the area of a new Burger King. Archeologists and historians from the Alaska Office of History and Archaeology evaluated two buildings in this area--The Market Place and Union Oil station--during a

Figure 11. Cabin on Pennock Island

1990 study of the potential effects of the Tongass Avenue Capacity Improvements Project, but determined that neither were old enough to be eligible for the National Register (Ostrogorsky and McMahan 1991:45, Figures 9 and A-9, and Table 3).

The landfall of Alternative G3 on Gravina Island would be just southeast of East Clump, near the eastern corner of U.S. Survey 1600 (see Figure 6). East Clump was named in the 1880s by local pilots, although it is listed in the 1883 *Coast Pilot* as "Seat Island" (Roppel 1998:227). In the East Clump area are the remains of numerous early twentieth century homesteads.

4.3 Alternative G4

Alternative G4 involves adding ferry service in close proximity to the existing ferry route. This would require construction of two new terminals, one on either side of Tongass Narrows, adjacent to the existing airport ferry terminals. On Gravina Island, the ferry terminal would be in the developed area of the Ketchikan Airport, which was not included in this reconnaissance survey.

4.4 Alternatives C3, C4, and D1

On the Ketchikan side of the channel, Alternative C3 would originate on a high bench in the vicinity of a Walmart and an auto body shop. The origins of Alternatives D1 and C4 would be in the vicinity of Cambria Drive, an area of newly developed roads running up the steep hillside. Much of the high bench to the northwest of Cambria Drive has been destroyed by a rock quarry.

These three alignments would terminate on Gravina Island in the developed area of the Ketchikan Airport. Although this reconnaissance survey did not include any of the fenced airport property, it did encompass an area near the mouth of Government Creek, where access roads associated with these alternatives intersect other potential roads on Gravina Island.

Figure 12. Spring Board Notch on Stump Near Lewis Point

4.5 Alternative G2

The ferry terminal on the Revillagigedo Island side of G2, the northwesternmost of the alternatives, would be on a fill-covered peninsula now occupied by Temsco Helicopters. The landing on Gravina Island would be near Lewis Point, in U.S. Survey 1803 (see Figure 5). Here, there is a gravel beach protected between two bedrock outcrops. The upland slopes gradually in from the beach through open, old growth forest.

This area is a popular picnic spot. The point has been logged and several of the stumps have springboard notches (Figure 12). Further inland toward is a CMT with a scar that is over 2 m above the ground. To the south, at the head of the pocket beach, is a grounded barge. In this area are the various elements of the Lewis Cove Sites (KET-670), including the midden and the wood-framed structures.

5—Conclusions

5.1 Impacts

The principal impact issue for cultural resources is the loss or degradation of prehistoric and historic archaeological sites, either through direct disturbance during construction or indirect disturbance due to changes in public accessibility. Given this, Alternatives F3, G2, and G3 are the most archaeologically sensitive of the seven alternatives currently under consideration. Conversely, Alternatives C3, C4, D1, and G4 are the least sensitive.

5.1.1 Alternative F3

The Craftsman house at 1749 Tongass Avenue is not known to be associated with individuals prominent in local history, nor directly related to historic fish processing facilities located in the area. Although it retains some of its historic character, it is not an exemplary or rare example of Craftsman construction, and its historic setting has been modified extensively.

The late nineteenth and early twentieth century burial site on the southeastern shore of Pennock Island will not be affected by this alternative. However, the northern shores of both Pennock and Gravina Islands were heavily occupied during the first half of the twentieth century. These are areas of both known historic sites and high archeological potential.

5.1.2 Alternative G3

The ferry terminal for Alternative G3 along the Ketchikan waterfront would be just south of Bar Harbor, in an area with little archeological potential. However, the landfall of Alternative G3 on Gravina Island, just southeast of East Clump, is in an area that was intensively occupied during the early 1900s.

5.1.3 Alternative G4

This alternative, involving two new terminals adjacent to the existing airport ferry terminals, is in an area with little archeological potential.

5.1.4 Alternatives C3, C4, and D1

These alternatives, which would originate on the mountain slope above Ketchikan and terminate on Gravina Island in the developed area of the Ketchikan Airport, are in areas with little archeological potential.

5.1.5 Alternative G2

The proposed ferry terminal for Alternative G2 on Revillagigedo Island has little archeological potential. However, the ferry landing on Gravina Island near Lewis Point is an area of both known historic and prehistoric sites, and high archeological potential.

5.2 Recommendations

Cultural resources should continue to be considered through all phases of the project. Once a final route is selected, cultural resources within the project's area of potential effect should be identified and evaluated in accordance with the requirements of 36 CFR 800.4. In consultation with appropriate land managing agencies and the Alaska State Historic Preservation Officer, specific measures would be developed and implemented to mitigate any identified adverse impacts.

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Michael Yarborough, principal archeologist for Cultural Resource Consultants, has a Master of Arts degree in Anthropology from the University of Toronto. Mr. Yarborough began working in Alaska in 1974. Prior to joining Cultural Resource Consultants in 1981, he conducted archeological surveys and excavations along the Alyeska Pipeline for the University of Alaska and worked as an archeologist for the U.S. Fish and Wildlife Service's Alaska Regional Office. During the time that he has been with Cultural Resource Consultants, Mr. Yarborough has completed more than 70 archeological surveys throughout the state.