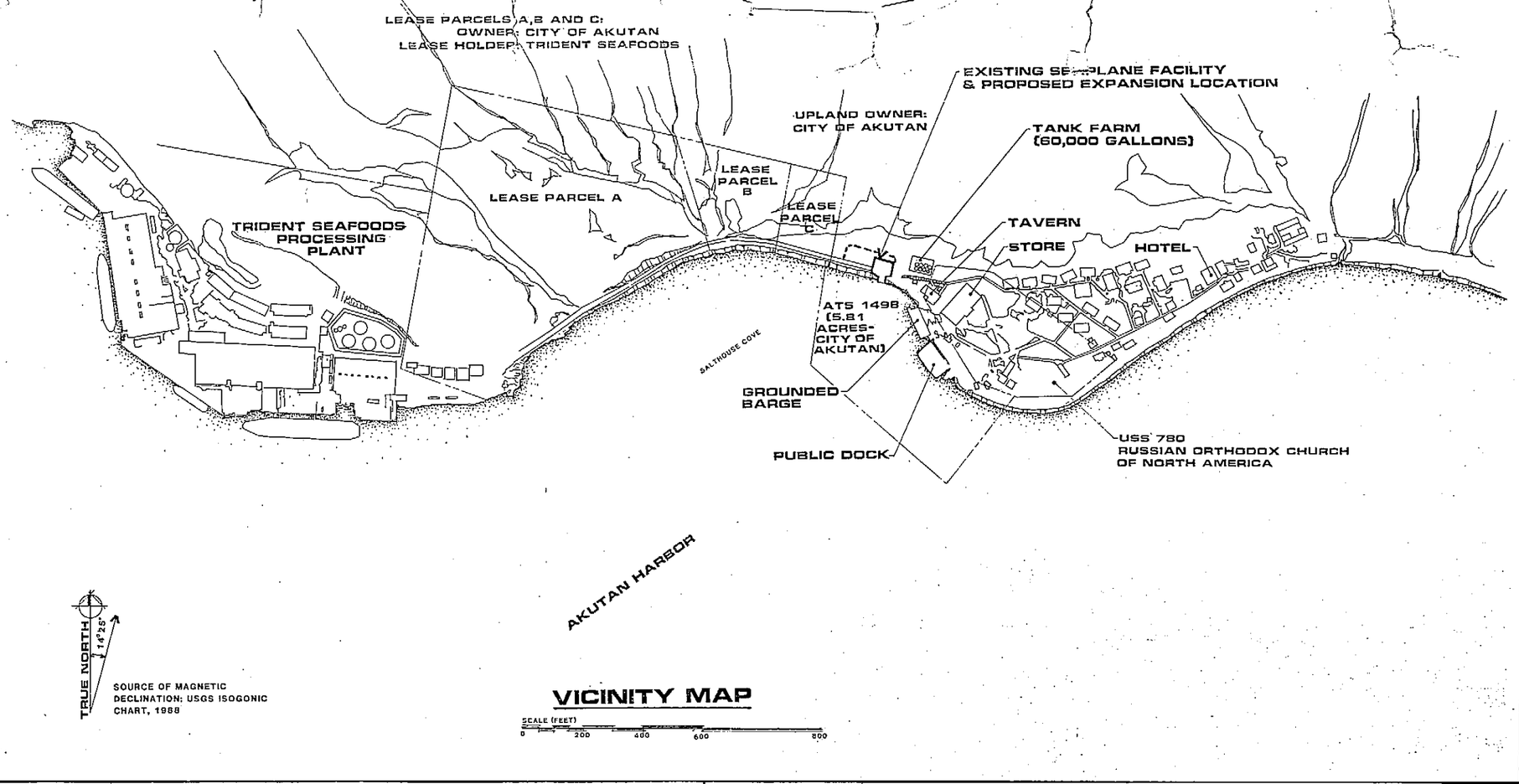
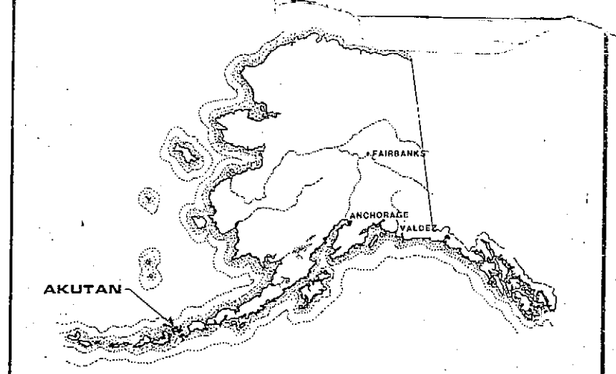
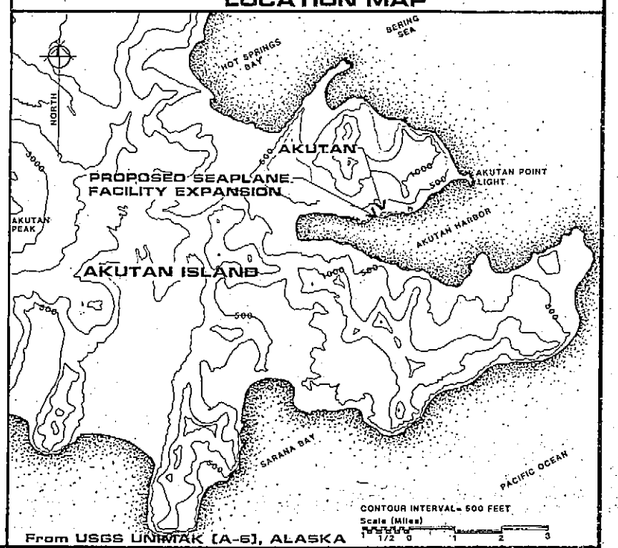


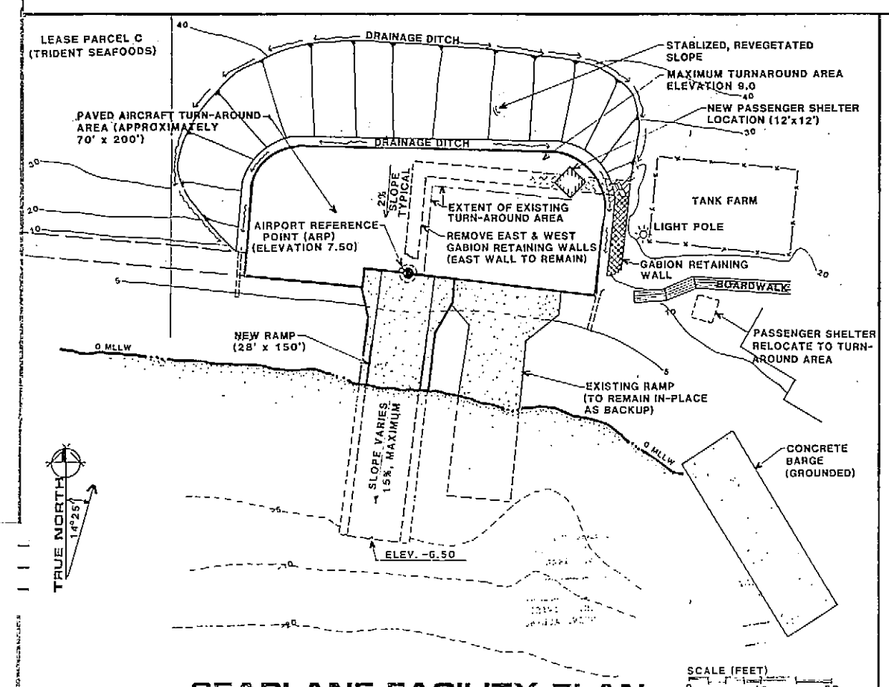
VICINITY MAP



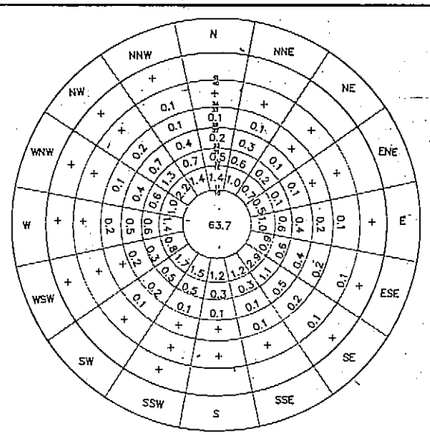
LOCATION MAP



From USGS UNIWAK (A-6), ALASKA



SEAPLANE FACILITY PLAN



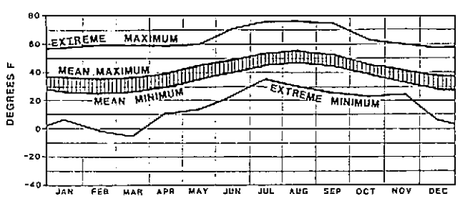
WIND ROSE (DUTCH HARBOR)

PERCENT BY WIND SPEED GROUPINGS:

0–10 KNOTS = 63.7%	28–33 KNOTS = 1.6%
11–16 KNOTS = 20.8%	34–40 KNOTS = 0.4%
17–21 KNOTS = 8.8%	41+ KNOTS = <1%
22–27 KNOTS = 4.7%	

NOTE: DUTCH HARBOR IS LOCATED ON UNALASKA ISLAND APPROXIMATELY 35 MILES TO THE WEST-SOUTHWEST. WIND CONDITIONS WILL VARY AT AKUTAN DUE TO LOCAL TERRAIN EFFECTS. WIND ROSE IS PROVIDED AS A GENERAL INDICATION OF WIND CONDITIONS ONLY.

SOURCE: ETAC/USAF AIR WEATHER SERVICE, HOURLY OBSERVATIONS, 1946-1947 AND 1950-1954.



TEMPERATURE (CAPE SARICHEF DATA)

AIRPORT LAYOUT PLAN CONDITIONALLY APPROVED subject to conditions in ALP approval letter dated

Nov 4 1995

By: Patricia A. Sullivan

FAA, AIRPORTS DIVISION, ALASKA REGION, ALL-600

AIRPORT DATA

1. AIRPORT CLASSIFICATION- SEAPLANE FACILITY
2. WIND ROSE DATA FROM DUTCH HARBOR (40 MILES WEST OF AKUTAN)
3. PREVAILING WINDS FROM THE SOUTHEAST
4. TEMPERATURE DATA FROM CAPE SARICHEF (40 MILES EAST).MEAN MAXIMUM TEMPERATURE = 55°F
5. TIDAL DATA:
   - HIGHEST TIDE (est.).....6.5 FT.
   - MEAN HIGHER HIGH WATER.....3.90 FT.
   - MEAN HIGH WATER.....3.7 FT.
   - MEAN LOW WATER.....1.30 FT.
   - MEAN LOWER LOW WATER.....0.00 FT.
   - LOWEST TIDE (est.).....-2.5 FT.
6. SEAPLANE FACILITY (ARP) LOCATION (BASIS: GPS OBS., FEB. 1995 NAD-83 DATUM):
   - 54°08'02" N LATITUDE
   - 165°46'44" W LONGITITUDE
   - 7.50 FEET ELEVATION (DATUM)

AKUTAN SEAPLANE BASE EXPANSION
ADOT&PF PROJECT NO. 51630
A.I.P. 3-02-0346-01

Designed:	JC
Drawn:	AFM
Checked:	DN
Project No.	95014

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue,
Anchorage, Alaska 99503
(907) 561-1011

Date: JUNE '95
Scale: –

AIRPORT LAYOUT PLAN

sheet 1 of 2

AKUTAN SEAPLANE BASE
AIRPORT LAYOUT PLAN REPORT

Prepared For: City of Akutan
P.O. Box 109
Akutan, Alaska 99553
(907) 698-2228

Prepared By: Peratrovich Nottingham & Drage, Inc.
1506 West 36th Avenue
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July 1995

Airport Service Area
The City of Akutan is located on Akutan Island in the Aleutian Islands, roughly 800 miles southwest of Anchorage. The nearest major communities are Unalaska/Dutch Harbor 35 miles to the west, and Cold Bay 150 miles to the east. There is no airstrip at Akutan. Instead, the City is reliant on amphibious aircraft as a primary means of transportation between the community and the rest of the State. All scheduled commercial flights to Akutan currently originate at Dutch Harbor. In addition to the existing seaplane base, Akutan has a public dock and is connected to the nearby Trident Seafoods docks and processing plant (see Airport Layout Plan sheet). Nearly all travel to and from Akutan, however, is by air service to the seaplane base.

Air Service
Akutan has a population of approximately 100 permanent residents. In addition, the nearby Trident Seafoods processing plant employs up to 700 people during peak seasons beginning in the fall and winter. Based on 1993 FAA data, just over 5000 passengers flew into Akutan during 1993. Currently, only Peninsula Air (PenAir) regularly flies into Akutan. Until recently, however, Mark Air Express also had regularly scheduled flights into Akutan. According to the PenAir pilot, there are very few private flights into Akutan. PenAir typically flies a Grumman Goose, and Mark Air Express was flying a DeHavilland Beaver and a Cessna Caravan to Akutan. All regular flights to Akutan originate in Dutch Harbor. All flights are conducted during daylight hours, under VFR flight rules.

Existing Facility
The existing seaplane base was built in 1985. Before 1985, amphibious airplanes pulled up on the beach at approximately the same location. The existing facility consists of an approximately 25-ft-wide by 120-ft long marine ramp connected to an approximately 50-ft by 100-ft on-shore aircraft turn-around area. The turn-around area is cut into the hillside and is surrounded by an approximately 12-15 feet high gabion retaining wall. The ramp and turn-around area are surfaced with 1-ft by 1-ft square concrete paver blocks which are tied together in a grid with steel cables. In addition, steel "Marston" matting has been placed in the center of the turn-around area to provide a smoother surface for float plane wheels, and the top of the ramp, down to about the low tide line, has been paved over with a concrete topping slab of varying thickness.

Purpose and Need
There are three primary problems with the existing facility: (1) the seaplane ramp has been degraded by wave action and storms and is now unusable by seaplanes during low tides; (2) the turn-around area is too small to safely accommodate larger or additional planes, and does not allow sufficient maneuvering room around parked planes; and (3) the turn-around surface

is difficult to maintain, cracks between the concrete paver blocks impede small-c... plane wheels, and the steel matting is very slippery when wet or covered with snow.

The seaplane ramp at Akutan is exposed to fairly heavy marine wave and storm attack. T... existing design, an un-armored ramp constructed of small concrete blocks, has proven insufficient to withstand the harsh environment. The deep end of the ramp has been torn apart during major storms, leaving a jagged edge and submarine rubble that can damage approaching planes. Also, the top of the ramp is quite steep, forcing approaching planes to "gun it" to make it onto the turn-around area, and then quickly throttle back and turn.

The existing turn-around area is inadequately sized for its current use, and does not allow expanded use. The existing area is approximately 50-ft deep, measured from the top of the ramp to the back retaining wall. In comparison, the wingspan of a Grumman Goose is 48 feet. A minimum separation distance of at least 20 feet between planes and structures should be maintained. The primary pilot for PenAir, Nick Sias, has stated that the existing turn-around is barely large enough to turn a Grumman Goose around on. To allow safe use by larger planes, such as a Cessna Caravan or a DeHavilland Twin Otter, the area must be expanded.

Air Traffic Forecast
Air traffic through Akutan fluctuates significantly with major fishing seasons, and with long-term trends in the Aleutians fishery. Trident Seafoods has a major processing plant at Akutan which is currently being significantly expanded. Much of the expected growth in air travel to Akutan is attributable to this expansion.

Table 1. Commercial Air Traffic Forecast

	1993	1996	2000	2005	2010
Annual Commercial Enplanements	5070	6000	6800	7200	7400
Peak Month (August) Enplanements	700	800	950	1000	1000

Design Requirements
There are few specific design requirements for seaplane facilities of this type. Design guidelines in a 1984 FAA document entitled "Seaplane Facilities" and a 1992 draft FAA Advisory Circular entitled "Seaplane Bases" were considered in the developing the proposed seaplane base improvements. PN&D Inc. also consulted with ADOT&PF Aviation Design, Southeast Region where much seaplane/floatplane facility design is done. Target design criteria are listed below.

- Ramp slope — 12.5%, max.
- Ramp depth — 3 ft below lowest tide, min.
- Ramp width — 30 ft, min.
- Clear zone around aircraft — 20 ft, min.
- Design Plane — DeHavilland Twin Otter

Table 2. Ai...

Aircraft Class		
Wingspan (ft):	48	
Length (ft):	33	38
Minimum Turning Radius (ft):	30	33
Maximum Takeoff Weight (lbs):	5,100	9,200

Proposed Alternative
The design of the proposed expansion is dictated largely by the limited uplands at the seaplane base location. Relocation to a site with more upland area was not an option because the only other potential sites, east of the current location, are much less sheltered than the existing site. Other sites were considered before the existing seaplane base was constructed in 1985.

Due to the steep mountain slopes behind the site, a large excavation into the hillside, a large fill into the ocean, or a combination of both is required to expand the turn-around area. Options requiring ocean fill were dismissed because of the environmental impacts and topographic/bathymetric constraints, which would have required a much shorter and steeper ramp or a large fill extending out into Akutan Harbor on which to place the ramp. The proposed ramp design follows the existing sea bottom very closely, minimizing the required fill and cost. The proposed design features 1½ horizontal to 1 vertical (1½:1) stabilized and landscaped slopes. The alternative is to construct high retaining walls. Constructing retaining walls of any type, however, would be significantly more expensive than simply stabilizing the slopes with a rock armor layer, and re-seeding them.

The new turn-around area would be paved with a concrete slab, and graded at a 2 percent slope towards the shore-line. This area would average 70 feet wide and would be 200 feet long, over twice the size of the existing area. This area is required to allow two planes of up to Twin Otter size to use the facility at once, and to provide sufficient room for an approximately 120 square ft passenger shelter and waiting area. Currently, the only automobile on Akutan Island is owned by Trident Seafoods, and no parking is planned for the seaplane base. Aircraft tie-downs are to be cast into the turn-around area slab to accommodate a maximum of two planes.

The new ramp is required because the existing ramp has been degraded by storms and wave action, will continue to degrade further and cannot be repaired, except by replacing it. It is cheaper to build a new ramp next to the existing one, than to tear out the old one and construct a new ramp in its place. The proposed ramp would be a reinforced concrete slab with concrete and armor rock side-slope protection. The ramp will connect to the center of the expanded turn-around area to allow access to either side of the turn-around, thus accommodating two planes with a single ramp.

Because all flights into Akutan are conducted during daylight hours, under VFR flight rules, airport lighting is not necessary. The only lighting at the facility will be an entry light located over the door of the passenger shelter building. A wind sock is not proposed because no adequate location for one is available. Planes will be landing and taking-off out in Akutan Harbor, where winds are likely to be different than at the seaplane base, which is sheltered by the steep mountain sides. No fueling or maintenance facilities are currently present, nor are any planned for the Akutan seaplane base.

AIRPORT LAYOUT PLAN CONDITIONALLY APPROVED subject to conditions in ALP approval letter dated Nov 9 1995
By: Patrick Sullivan
FAA, AIRPORTS DIVISION, ALASKA REGION, ALL-600

AKUTAN SEAPLANE BASE EXPANSION
ADOT&PF PROJECT NO. 51630
A.I.P. NO. 3-02-0346-01

Designed: JC
Drawn: AFM
Checked: DN
Project No: 95014

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue,
Anchorage, Alaska 99503
(907) 561-1011

Date: JUNE '95
Scale:

AIRPORT LAYOUT PLAN REPORT

SHEET 2 OF 2