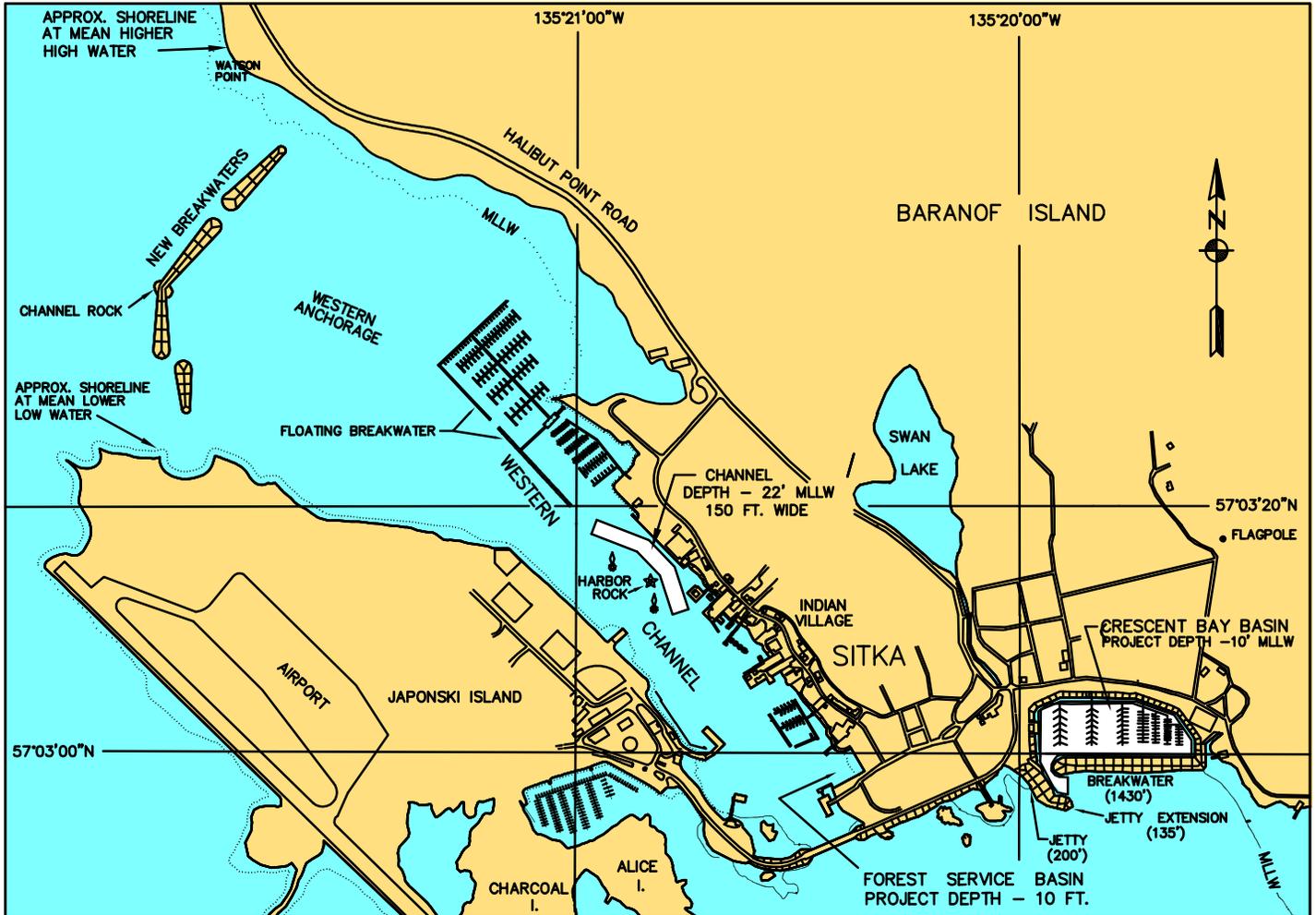
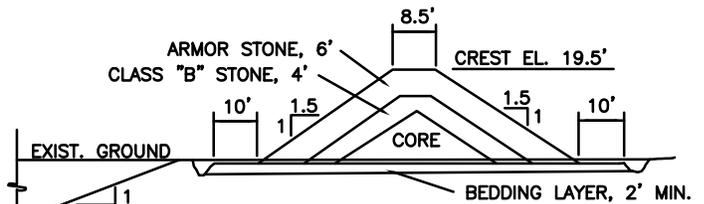


Sitka Harbor

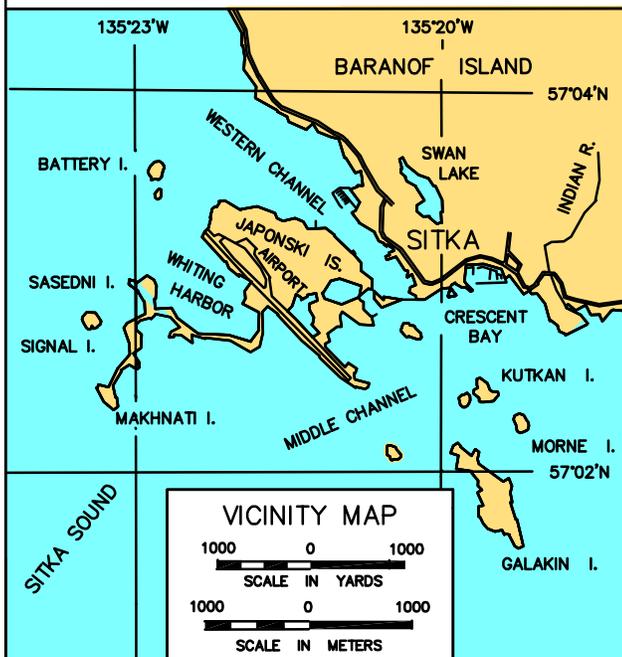


NOTES

1. ELEVATIONS AND DEPTHS ARE IN FEET AND REFER TO MEAN LOWER LOW WATER (MLLW = 0.0').
2. THIS LOCALITY IS SHOWN ON USC & GS CHART NOS. 17320, 17324, 17326, 17327.



**TYPICAL BREAKWATER SECTION
CRESCENT BAY**
NOT TO SCALE



**SITKA ALASKA
CRESCENT BAY BASIN
AND
WESTERN CHANNEL**

REVISED 2001



SCALE IN FEET



SCALE IN METERS

Condition of Improvements

30 December 2014

Sitka Harbor, Alaska

(CWIS No. 010322, 013787, 016840, 055030, 072845)

Authorization (1) Rivers and Harbors Act, 30 August 1935 (Rivers and Harbors Committee Doc. 59, 74th Congress, 1st Session) as adopted, provides a channel on the easterly side of Harbor Rock, 150 feet wide and 22 feet below MLLW, and for the removal of Indian Rock. (2) Rivers and Harbors Act, 2 March 1945 (House Doc. 744, 79th Congress, 2nd Session) as adopted, provides for the improvement of Crescent Bay by dredging a 13 acre area to a depth of 10 feet below MLLW, protected by two breakwaters. (3) Rivers and Harbors Act, 3 September 1954 (House Doc. 414, 83rd Congress, 2nd Session) provides for dredging the Forest Service basin, a 130 foot by 270 foot area, and its approach to a depth of 10 feet below MLLW. (4) Water Resources Development Act of 1992, Section 101 (Public Law 102-580, 31 October 1992) as adopted, and authorized by the Report of the Chief of Engineers, dated 29 June 1992 (House Doc. 103-37), provides for the construction of three breakwaters near the location of Channel Rock at Sitka, Alaska to create a protected harbor for a minimum of 315 vessels.

Table 1

Existing Project	Length (ft.)	Width (ft.)	Depth (ft.)
Western Channel			
Channel	1300	150	-22
Crescent Bay Harbor			
Basin	15 acres		-10
Entrance Channel	205	varies	-10
Main breakwater	1430		
Jetty (with extension)	335		
Forest Service Basin	270	130	-10
Channel Rock (Thomsen Harbor)			
Breakwater No. 1	480		
Breakwater No. 2	1200		
Breakwater No. 3	320		

Project Usage The channel on the easterly side of Harbor Rock in the Western Channel provides suitable access for ocean-going vessels. Crescent Bay basin provides a base of operations for commercial fishing and moorage for approximately 500 vessels. The Channel Rock Breakwaters provide protection for the new Thomsen Harbor expansion project, a major harbor addition to provide for current and anticipated future moorage needs.

Progress of Work

1937	Indian Rock and an isolated boulder are removed; the channel on the easterly side of Harbor Rock in the Western Channel is completed.
1964	Design Memorandum No. 2 is approved which increases the basin area to 15 acres and modifies the breakwater design to accommodate increased vessel activity. Construction of the small boat basin and dredging of the Forest Service Basin begins in July.
1965	The project is completed in December; 304,300 cubic yards of common material were removed, and 27,100 tons of rock was placed during construction.
1972	In order to reduce a wave surge problem in Crescent Bay basin, a 135 foot extension to the jetty is begun in September.
1973	The jetty extension is successfully completed in January.
1988	Sampling and testing is carried out on sediments from Thomsen Harbor.
1990	A condition survey of the project in Western Channel is completed in February.
1992	A condition survey of Crescent Bay is conducted in July.
1994	Construction begins on the Channel Rock breakwaters (Thomsen Harbor). 188,500 cubic yards of rock are placed during the construction season.
1995	Construction is completed on the Channel Rock breakwaters. A total of 310,500 cubic yards of rock are placed to complete the contract.
2001	Crescent Bay Harbor, Western Channel, the Forest Service Basin, and the Channel Rock Breakwaters are surveyed under contract.
2003	Vertical and oblique aerial photography is taken in May.
2005	A condition survey of all three federal projects including the Forest Service Basin is conducted in May.
2008	A Channel Rock breakwaters project condition survey was conducted in April 2008.
2010	A project condition survey was completed in August of Crescent Harbor and Western Channel
2012	Awarded a contract to construct a new breakwater which closes the gap between the two Channel Rock Breakwaters nearest Japonski Island. USACE Comprehensive Evaluation of Project Datums (CEPD) Compliance report completed and recorded in September.

Progress of Work

2013	The Channel Rock Breakwater Modification project constructed a 315-foot-long breakwater to connect the main and south breakwaters to reduce wave energy entering Eliason Harbor. This resulted in closure of the secondary entrance that was part of the initial Channel Rock Breakwater project.
2014	The Channel Rock Breakwater Modification project was modified to include an extension of the south breakwater 115 feet towards Japonski Island and an extension of the main breakwater at an angle seaward 100 feet into the main entrance.

Table 2 Cost to Date

Project	Description	Cost \$
010322	GI PED Appropriation	445,109
	GI PED Costs	445,109
	CG Appropriation	19,467,054
	CG Costs	18,900,628
	CG ARRA Appropriation	45,930
	CG ARRA Costs	45,930
	CG Contributed Appropriation	1,238,620
	CG Contributed Cost	1,238,620
055030	O&M Appropriation	129,329
	O&M Costs	129,329

Table 3 Range of Tides in feet

Tide Station	Mean Range	Diurnal Range	Extreme Range
945 1600 Sitka AK	7.7	9.94	18.98

Controlling Depth Project depth was available in most of Crescent Bay with some light shoaling around the entire project limit, May 2005. For Western Channel a depth of -19.1 feet MLLW controls on the eastern side of the project limits. About half of the Forest Service Basin was found to be above project depth with +3.2 feet MLLW controlling in the eastern corner. The controlling depth for Crescent in 2010 is -11.6 feet in the mid maneuvering channel with -7.9 feet near corner 8 and -2.5 near corner 5. Western Channel 2010 controlling depth is -21.0 feet between corners 5 and 6.

Maintenance Dredging Supplement

A. General

1. The Federal project at Crescent Bay Basin has not required dredging since original construction in 1965, and likewise Western Channel has required no maintenance dredging. Federal responsibility for Thomsen Harbor includes only breakwater repair, if necessary, and will not require Federal maintenance dredging.
2. Some shoaling has occurred around the entire limit of Crescent Bay Basin with heavier shoaling along the northern limit.
3. A dredging window from 1 June to 14 March was approved for the Thomsen expansion project; further agency review should be conducted prior to the dredging of Crescent Bay Basin.
4. The method of dredging depends in part on the selection of the disposal site which is yet to be determined.

B. Sampling & Testing

1. Nine sites were sampled in May of 1997, seven in Crescent Bay Basin and two in Western Channel. The basin samples were classified by ASTM D 2487 as follows

Table 4A Soil Sampling

Sample No.	Classification	Results
1, 2	SM	Silty SAND with gravel
3	ML	Sandy SILT
6, 8	SM	Silty SAND
7	GM	Silty GRAVEL with sand
9	SP-SM	Poorly graded SAND with silt

The two samples from Western Channel were classified as GP-GM, Poorly graded GRAVEL with silt and sand. Classification

2. Chemical analysis was conducted using (7) test methods as outlined with results below

Table 4B Chemical Testing

Method	Chemical analysis	Results
9060	Total Organic Carbon	9,500 - 67,200 ppm
8260A	Volatile Organic Compounds	All below management levels
8270B	Semi-volatile Organic Compounds	(3) sites total (7) SVOCs over management levels
Series 6000-7000	(8) RCRA Metals + Copper	All below management levels
8081	PCBs & Pesticides	All below management levels or thresholds not established
9200	Nitrate + Nitrogen	ND (none detect)
9035	Sulfate	560 - 5,200 ppm

C. Disposal

1. Designated upland sites, including intertidal if greater than +4 feet MLLW, has met previous agency approval. Environmental impacts are lessened and dredged material is put to good use when upland sites are utilized, but the costs of such activity can be prohibitive.
2. Deep water sites in the vicinity will have to be investigated and are subject to agency approval, if onshore options are exhausted.

Sitka Harbor, Sitka, Alaska



Crescent Bay Basin (right), Western Channel, and Channel Rock Breakwater, 2003.



Southeast oblique of Channel Rock Breakwater and Western Channel, 2003.

Sitka Harbor, Sitka, Alaska



Crescent Bay Basin, 2003.



Western Channel, 2010.