NOTES

1. HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83, IN U.S. SURVEY FEET, HOLDING USACE SBC 'AH-D 1999' AS N 2,365,793.89, E 2,537,506.20 AND 'AH-B' AS N 2,364,793.22, E 2,538,662.93.
2. VERTICAL CONTROL IS IN FEET BASED ON MEAN LOWER LOW WATER (MLLW = 0.0'), HOLDING 'AH-D, 1999' AT 23.17'.
3. SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
4. THE EXISTING PROJECT CONSISTS OF AURORA HARBOR AND THE SURROUNDING BASIN LOCATED IN JUNEAU ALASKA.
5. BATHYMETRY WAS COLLECTED MAY 28–30, 2005. SOUNDINGS WERE COLLECTED USING AN 'INTERSPACE 448' SOUNDER WITH A 3° SINGLE BEAM TRANSDUCER. SOUND VELOCITY VELOCITY PROBE, AND VERIFIED WITH A MANUAL BAR CHECK AT 10' INCREMENTS TO PRODUCE DEPTH. POSITIONING AND VESSEL ATTITUDE WERE MEASURED USING A 'TRIMBLE 5700 RTK' SYSTEM AND TSS MOTION REFERENCE UNIT. RTK CORRECTIONS WERE BROADCAST FROM LOCAL BASE STATION DCCUPYING 'AH-D'. DATA WAS COLLECTED AND FIELD PROCESSED USING 'HYPACK MAX VERSION 02.2A' SOFTWARE. TIDE ELEVATIONS WERE MEASURED USING A 'TRIMBLE 5700 RTK' SYSTEM AND VERIFIED THROUGH CONVENTIONAL DIFFERENTIAL LEVELING TECHNIQUES.
6. THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.

CONTROL DATA

STATION	NORTHING	EASTING	ELEV.	DESCRIPTION
JA-1 RESET 1989	2,363,831.81	2,538,658.22	23.96	USACE SBC
LENA PT	2,365,509.48	2,537,214.21	25.84	4" DOMED BC
TL-1 1977	2,364,349.00	2,538,986.59	25.63	USACE SBC
TL-9 1977	2,365,301.36	2,537,130.30	25.14	USACE SBC
AH-B 1996	2,364,793.22	2,538,662.93	23.12	3 1/4" FLAT BC IN CONC.
AH-C 1999	2,365,272.83	2,538,273.21	23.10	3 1/4" DOMED BC IN CONC.
AH-D 1999	2,365,793.89	2,537,506.20	23.17	3 1/4" DOMED BC IN CONC.
AH-E 2002	2,365,616.41	2,537,231.87	25.69	3 1/4" DOMED BC
AH-F 2002	2,364,059.05	2,538,951.21	24.21	3 1/4" DOMED BC
AH-1 2005	2,365,658.64	2,537,898.76	25.91	SET 3.5" DOMED BC IN ROCK
AH-2 2005	2,365,310.12	2,537,134.39	24.97	SET 2.5" ALM CAP ON ALM ROD

PROJECT LIMITS

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
1	2,365,201.8	2,537,241.6	9	2,363,849.8	2,538,535.6
2	2,365,473.8	2,537,350.6	10	2,364,082.8	2,538,387.6
3	2,365,720.8	2,537,640.6	11	2,364,261.8	2,538,566.6
4	2,364,912.8	2,538,455.6	12	2,364,639.8	2,538,190.6
5	2,364,904.8	2,538,455.6	13	2,364,639.8	2,538,181.6
6	2,364,711.8	2,538,647.6	14	2,365,396.8	2,537,427.6
7	2,364,325.8	2,538,841.6	15	2,365,164.8	2,537,334.6
8	2,364,138.8	2,538,826.6			

NAVIGATION AIDS

DESCRIPTION	USCG No.	NORTHING	EASTING
AURORA BASIN LIGHT 1A	23710	2,364,231.8	2,538,486.6
AURORA BASIN LIGHT 1B	23720	2,365,295.8	2,537,126.6

CONTRACTOR HUGHES & ASSOCIATES
CONTRACT NO. W912KB-04-D-0007
CITY PALMER STATE ALASKA

CORPS OF ENGINEERS
ALASKA DISTRICT
ANCHORAGE, ALASKA

SURVEYED: BTH/CSH
DRAWN: BTH/CSH
CHECKED: JSH
SUBMITTED:

JUNEAU, ALASKA
AURORA HARBOR
PROJECT CONDITION SURVEY
May 28–30, 2005

RECOMMENDED: CHIEF OPERATIONS–REAGNTS BRANCH
APPROVED:
DATE:
PROJECT MANAGER

SURVEY NO. 2245–05
SCALE: 1" = 50'
SHEET 1 OF 2

VOLUME COMPUTATIONS

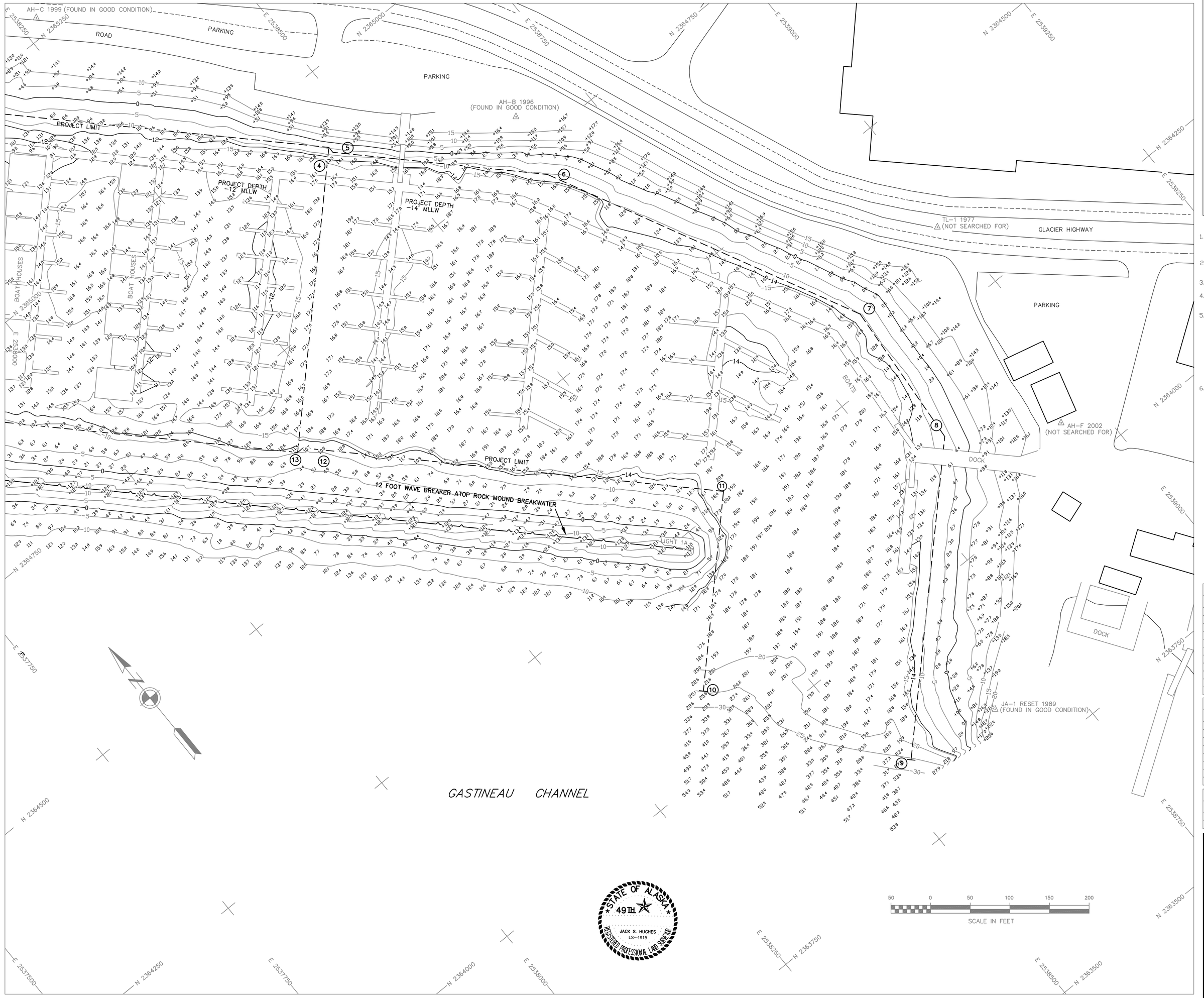
Project Depth –12' MLLW	
VOLUME AVAILABLE TO PROJECT DEPTH (–12' MLLW)	3,426 (cubic yards)
VOLUME AVAILABLE BETWEEN PROJECT DEPTH AND OVERDEPTH (–13' MLLW)	2,897 (cubic yards)
VOLUME AVAILABLE along the side slope (3:1; H:V)	4,811 (cubic yards)
TOTAL	11,134 (cubic yards)
Project Depth –14' MLLW	
VOLUME AVAILABLE TO PROJECT DEPTH (–14' MLLW)	1,496 (cubic yards)
VOLUME AVAILABLE BETWEEN PROJECT DEPTH AND OVERDEPTH (–15' MLLW)	1,238 (cubic yards)
VOLUME AVAILABLE along the side slope (3:1; H:V)	5,393 (cubic yards)
TOTAL	8,127 (cubic yards)

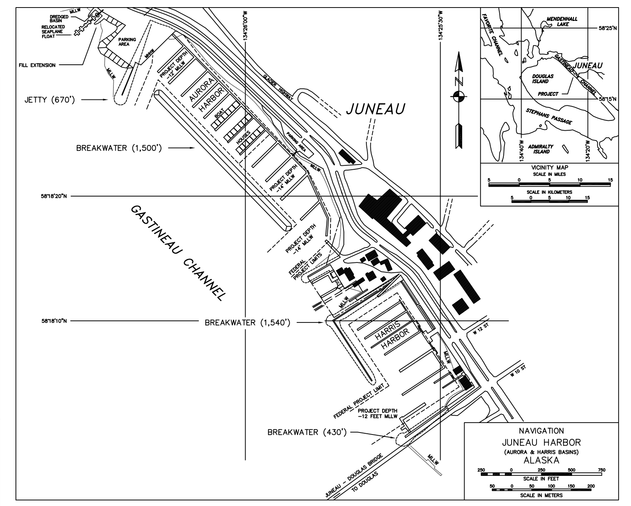
CORPS OF ENGINEERS

U. S. ARMY

CORPS OF ENGINEERS

U. S. ARMY





NOTES

1. HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83, IN U.S. SURVEY FEET, HOLDING USACE SBC "AH-D 1999" AS N 2,365,793.89, E 2,537,506.20 AND "AH-B" AS N 2,364,793.22, E 2,538,662.93.
2. VERTICAL CONTROL IS IN FEET BASED ON MEAN LOWER LOW WATER (MLLW = 0.0'), HOLDING "AH-D, 1999" AT 23.17'.
3. SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
4. THE EXISTING PROJECT CONSISTS OF AURORA HARBOR AND THE SURROUNDING BASIN LOCATED IN JUNEAU, ALASKA.
5. BATHYMETRY WAS COLLECTED MAY 28-30, 2005. SOUNDINGS WERE COLLECTED USING AN "INTERSPACE 448" SOUNDER WITH A 3° SINGLE BEAM TRANSDUCER. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN ODOM DIGIBAR PRO SOUND VELOCITY PROBE, AND VERIFIED WITH A MANUAL BAR CHECK AT 10' INCREMENTS TO PROJECT DEPTH. POSITIONING AND VESSEL ATTITUDE WERE MEASURED USING A "TRIMBLE 5700 RTK" SYSTEM AND TSS MOTION REFERENCE UNIT. RTK CORRECTIONS WERE BROADCAST FROM LOCAL BASE STATION OCCUPYING "AH-D". DATA WAS COLLECTED AND FIELD PROCESSED USING "HYPACK MAX VERSION 02.12A" SOFTWARE. TIDE ELEVATIONS WERE MEASURED USING A "TRIMBLE 5700 RTK" SYSTEM AND VERIFIED THROUGH CONVENTIONAL DIFFERENTIAL LEVELING TECHNIQUES.
6. THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.

VOLUME COMPUTATIONS		
Project Depth -12' MLLW		
VOLUME AVAILABLE TO PROJECT DEPTH (-12' MLLW)	3,426	(cubic yards)
VOLUME AVAILABLE BETWEEN PROJECT DEPTH AND OVERDEPTH (-13' MLLW)	2,897	(cubic yards)
VOLUME AVAILABLE along the side slope (3:1; H:V)	4,811	(cubic yards)
TOTAL	11,134	(cubic yards)
Project Depth -14' MLLW		
VOLUME AVAILABLE TO PROJECT DEPTH (-14' MLLW)	1,496	(cubic yards)
VOLUME AVAILABLE BETWEEN PROJECT DEPTH AND OVERDEPTH (-15' MLLW)	1,238	(cubic yards)
VOLUME AVAILABLE along the side slope (3:1; H:V)	5,393	(cubic yards)
TOTAL	8,127	(cubic yards)

CONTROL DATA

STATION	NORTHING	EASTING	ELEV.	DESCRIPTION
JA-1 RESET 1989	2,363,831.81	2,538,658.22	23.96	USACE SBC
LENA PT	2,365,509.48	2,537,214.21	25.84	4" DOMED BC
TL-1 1977	2,364,349.00	2,538,986.59	25.63	USACE SBC
TL-9 1977	2,365,301.36	2,537,130.30	25.14	USACE SBC
AH-B 1996	2,364,793.22	2,538,662.93	23.12	3 1/4" FLAT BC IN CONC.
AH-C 1999	2,365,272.83	2,538,273.21	27.10	3 1/4" DOMED BC IN CONC.
AH-D 1999	2,365,793.89	2,537,506.20	23.17	3 1/4" DOMED BC IN CONC.
AH-E 2002	2,365,616.41	2,537,231.87	25.69	3 1/4" DOMED BC
AH-F 2002	2,364,059.05	2,538,951.21	24.21	3 1/4" DOMED BC
AH-1 2005	2,365,658.64	2,537,898.76	25.91	SET 3.5" DOMED BC IN ROCK
AH-2 2005	2,365,310.12	2,537,134.39	24.97	SET 2.5" ALM CAP ON ALM ROD

PROJECT LIMITS

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
1	2,365,201.8	2,537,241.6	9	2,363,849.8	2,538,535.6
2	2,365,473.8	2,537,350.6	10	2,364,082.8	2,538,387.6
3	2,365,730.8	2,537,640.6	11	2,364,261.8	2,538,566.6
4	2,364,912.8	2,538,455.6	12	2,364,639.8	2,538,190.6
5	2,364,904.8	2,538,455.6	13	2,364,639.8	2,538,181.6
6	2,364,711.8	2,538,647.6	14	2,365,396.8	2,537,427.6
7	2,364,325.8	2,538,841.6	15	2,365,164.8	2,537,334.6
8	2,364,138.8	2,538,826.6			

NAVIGATION AIDS

DESCRIPTION	USCG No.	NORTHING	EASTING
AURORA BASIN LIGHT 1A	23710	2,364,231.8	2,538,486.6
AURORA BASIN LIGHT 1B	23720	2,365,295.8	2,537,126.6

CONTRACT NO. W911KB-04-D-0007

CONTRACTOR HUGHES & ASSOCIATES

CITY PALMER STATE ALASKA

STATE OF ALASKA 49TH
JACK S. HUGHES
LS-4915
REGISTERED PROFESSIONAL LAND SURVEYOR

ALASKA DISTRICT
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SURVEYED: BTH/CSH
DRAWN: BTH/CSH
CHECKED: JSH
SUBMITTED:

JUNEAU, ALASKA
AURORA HARBOR
PROJECT CONDITION SURVEY
May 28-30, 2005

RECOMMENDED: PROJECT MANAGER

APPROVED: CHIEF OPERATIONS-READINESS BRANCH

DATE:

SURVEY NO. 2245-05

SCALE: 1" = 50'

SHEET 2 OF 2