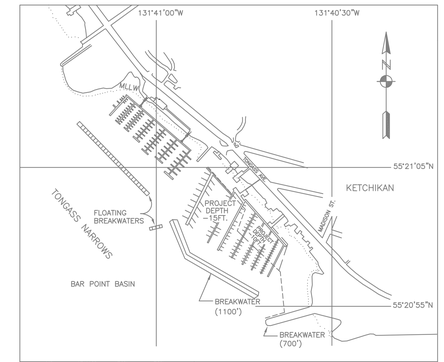
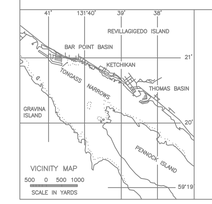
STATE OF ALASKA 49TH JACK S. HUGHES LS-4915 REGISTERED PROFESSIONAL LAND SURVEYOR

VOLUME COMPUTATIONS

Project Depth -10' MLLW			Project Depth -15' MLLW		
PROJECT DEPTH (-10' MLLW)	3,878	(cubic yards)	PROJECT DEPTH (-15' MLLW)	2,388	(cubic yards)
Between PROJECT DEPTH and MAXIMUM PAY LINE (-11' MLLW)	2,250	(cubic yards)	Between PROJECT DEPTH and MAXIMUM PAY LINE (-16' MLLW)	2,691	(cubic yards)
TOTAL (-10')	6,128	(cubic yards)	TOTAL (-15')	5,079	(cubic yards)
SIDESLOPES (3:1)	10,454	(cubic yards)			
TOTAL (Entire Basin)	21,661	(cubic yards)			





KETCHIKAN HARBOR
ALASKA
BAR POINT

300 0 300 600 900
SCALE IN FEET
100 0 100 200 300
SCALE IN METERS

NOTES

1. HORIZONTAL CONTROL IS ALASKA STATE PLANE ZONE 1, NAD83, IN US SURVEY FEET, HOLDING USACE DOMED BRASS CAP "BPB-3, 2001" AS N 1,289,765.91, E 3,099,832.70 AND USACE DOMED BRASS CAP "BPB-1, 1998" AS N 1,290,108.71, E 3,099,572.75.
2. VERTICAL CONTROL IS BASED ON MEAN-LOWER-LOW WATER, IN US SURVEY FEET (MLLW = 0.0') HOLDING USACE DOMED BRASS CAP MONUMENT "BPB-3, 2001" AT 22.99' AND "BPB-1, 1998" AT 22.27'.
3. SOUNDINGS ARE IN US SURVEY FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
4. THIS SURVEY INDICATES GENERAL CONDITIONS AT THE TIME OF SURVEY.
5. SOUNDING OPERATIONS WERE CONDUCTED ON MAY 28, 2007 USING AN INNERSPACE 448 ECHO SOUNDER WITH A 200 KHZ, 3 DEGREE BEAM WIDTH, SINGLE-BEAM TRANSDUCER. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN ODOM DIGIBAR PRO SOUND VELOCITY PROBE, AND VERIFIED WITH A BAR CHECK AT 10' INCREMENTS TO PROJECT DEPTH. POSITIONING WAS PROVIDED USING A TRIMBLE 5700 RECEIVER OPERATING ON RTK CORRECTIONS BROADCAST FROM A TRIMBLE 5700 BASE STATION SET AT USACE DOMED BRASS CAP "BPB-3". NAVIGATION, DATA COLLECTION AND DATA PROCESSING WERE PERFORMED USING HYPACK MAX 6.2 INTEGRATED SOFTWARE. TIDE CORRECTIONS WERE PROVIDED BY TRIMBLE 5700 RTK GPS RECEIVER AND CHECKED THROUGH CONVENTIONAL METHODS.
6. HORIZONTAL CONTROL WAS SURVEYED MAY 24-25, 2007 USING BOTH STATIC AND REAL-TIME KINEMATIC GPS EQUIPMENT AND TECHNIQUES. ALL BREAKWATERS, BASINS, HARBOR LEADLINE SOUNDINGS AND SURROUNDING AREAS WERE SURVEYED USING A TRIMBLE 5700 RTK SURVEY ROVER

CONTROL DATA

STATION	NORTHING	EASTING	ELEV.	DESCRIPTION
BAR-2, 1972	1,289,302.31	3,099,766.90	21.16	USACE SBC
BAR-4, 1972	1,289,559.92	3,098,794.08	21.89	USACE SBC
BAR-6, 1976	1,290,671.95	3,098,651.22	21.42	USACE SBC
BPB-1, 1998	1,290,108.71	3,099,572.75	22.27	USACE DOMED BC
BPB-2, 1998	1,289,536.99	3,099,009.71	19.61	USACE DOMED BC
BPB-3, 2001	1,289,765.91	3,099,832.70	22.99	USACE DOMED BC
BPB-4, 2001	1,290,602.71	3,098,428.97	23.08	USACE DOMED BC

PROJECT LIMITS

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
1	1,289,357	3,099,723	8	1,290,015	3,099,150
2	1,289,447	3,099,837	9	1,290,433	3,098,597
3	1,289,732	3,099,690	10	1,289,880	3,098,566
4	1,290,027	3,099,688	11	1,289,622	3,098,832
5	1,290,565	3,098,666	12	1,289,532	3,099,667
6	1,290,481	3,098,622	13	1,289,427	3,099,668
7	1,290,203	3,099,152			

☆ NAVIGATION AIDS ☆

DESCRIPTION	USCG #	NORTHING	EASTING
SOUTH ENTRANCE LIGHT 2S, FL. RED	22200	1,289,303	3,099,772
SOUTH ENTRANCE DAYBEACON 3S, GRN	22205	1,289,473	3,099,593
ENTRANCE LIGHT 2, FL. RED	22210	1,289,717	3,098,322
ENTRANCE DAYBEACON 3, GRN	22215	1,290,085	3,098,274
NORTH ENTRANCE LIGHT 2N, FL. RED	22220	1,290,548	3,097,433

CONTRACT NO. W911KB04-D-0007
CONTRACTOR HUGHES & ASSOCIATES
CITY WASILLA STATE AK

ALASKA DISTRICT
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SURVEYED: HUGHES & ASSOCIATES
DRAWN: CSH/EJC
CHECKED: JSH
SUBMITTED:

KETCHIKAN, ALASKA
BAR POINT BASIN
MAY 24 -28, 2007
PROJECT CONDITION SURVEY

RECOMMENDED: PROJECT MANAGER
APPROVED: CHIEF OPERATIONS-READINESS BRANCH
DATE:

SURVEY NO. 2449-07
SCALE: 1"= 60'
SHEET 1 OF 1