

SURVEYOR'S CERTIFICATE
 I HEREBY CERTIFY THAT I AM PROPERLY REGISTERED AND LICENSED TO PRACTICE AS A SURVEYOR IN THE STATE OF ALASKA AND THAT THIS PLAN REPRESENTS A HYDROGRAPHIC SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH THE REQUIREMENTS OF THE SURVEYING ACT OF 1968, AS AMENDED, AND THE REGULATIONS THEREUNDER. I AM NOT PROVIDING ANY GUARANTEE OF ACCURACY OR BELIEF.

KARL D. WOODS, P.L.S.
 REGISTRATION NO. LS 10990
 DATE: _____



MILW ELEVATION AND ELLIPSOID HEIGHT COMPARISONS

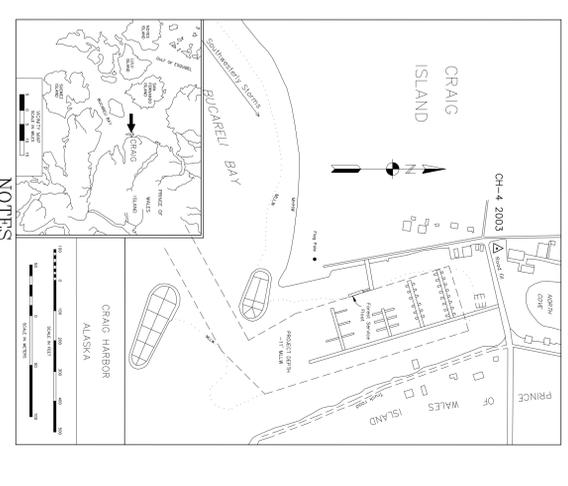
STATION	MILW	2003 EHT	MILW-EHT	MILW	2007 EHT	MILW-EHT
N-BR-7-1981	20.28	20.28	0.00	20.28	20.28	0.00
N-BR-8-1981	19.01	19.01	0.00	19.01	19.01	0.00
N-BR-9-1981	18.66	18.66	0.00	18.66	18.66	0.00
CH-1-1999	17.83	17.83	0.00	17.83	17.83	0.00
CH-2-2003	14.12	14.12	0.00	14.12	14.12	0.00

DISPOSAL AREA

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
1	1,329,800.00	2,794,256.36	4	1,327,853.18	2,792,250.01
2	1,329,975.92	2,794,548.41	5	1,330,714.02	2,794,514.18
3	1,330,115.81	2,794,464.15	6	1,330,038.46	2,794,723.44
4	1,330,634.33	2,794,299.17	7	1,329,890.25	2,794,600.01
			8	1,329,714.34	2,794,300.78

PROJECT LIMITS

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
1	1,329,800.00	2,794,256.36	5	1,330,714.02	2,794,514.18
2	1,329,975.92	2,794,548.41	6	1,330,038.46	2,794,723.44
3	1,330,115.81	2,794,464.15	7	1,329,890.25	2,794,600.01
4	1,330,634.33	2,794,299.17	8	1,329,714.34	2,794,300.78



NOTES

- HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83(CORS98), IN US SURVEY FEET. BASED ON A SPARSE NETWORK CONTROL POINT APRIL 1988. THE POINTS WERE PROCESSED USING THE NAD83 TRANSFORMATION TO THE NAD83 DATUM. THE POINTS WERE PROCESSED USING THE NAD83 TRANSFORMATION TO THE NAD83 DATUM. THE POINTS WERE PROCESSED USING THE NAD83 TRANSFORMATION TO THE NAD83 DATUM.
- VERTICAL CONTROL IS MEAN-LOW-WATER DATUM. IN US SURVEY FEET (MLW=LO). HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83(CORS98), IN US SURVEY FEET. BASED ON A SPARSE NETWORK CONTROL POINT APRIL 1988. THE POINTS WERE PROCESSED USING THE NAD83 TRANSFORMATION TO THE NAD83 DATUM. THE POINTS WERE PROCESSED USING THE NAD83 TRANSFORMATION TO THE NAD83 DATUM.
- STATIONING ARE IN US SURVEY FEET AND ARE UNLESS INDICATED OTHERWISE.
- THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF SURVEY.
- SURVEY DATA ACQUISITION WAS PERFORMED MAY 2-6, 2007. SOUNDINGS WERE COLLECTED USING A SONAR SYSTEM. THE SONAR SYSTEM WAS CALIBRATED USING A TARGET CROSS REVEALER OPERATING ON RIK CORRECTIONS BROADCAST FROM A TRIMBLE ROSSER RECEIVER SET AT USACE STATION N-BR-9-1981. NAVIGATION, DATA COLLECTION AND DATA PROCESSING WERE PERFORMED USING A GARMIN 1800 GPS. THE DATA WAS COLLECTED USING A DTM WATERLOG HOLOGIC RECORDER AND 5-MD PRESSURE TRANSDUCER SET BY HERRINGTON. LIDAR SURVEY, HORIZONTAL CONTROL, AND VERTICAL CONTROL WERE PROVIDED BY HERRINGTON.
- VERTICAL CONTROL WAS SURVEYED USING OPTICAL INSTRUMENTS AND DIFFERENTIAL LEVELING CONVENTIONAL LAND-SURVEYING TECHNIQUES.
- STATIC GPS SESSIONS OF 24 HOURS WERE OBSERVED AT CH-1-1999, CH-2-1999, CH-3-2003 AND N-BR-9-1981. ELLIPSOID HEIGHTS WERE PROCESSED USING THE NGS ONLINE POSITIONING USER SERVICE (OPUS) USING NOAA'S CORS98.1 EPOCH 2000.0 VALUES FOR BUKORA ISLAND 1 ISLAND 1 CORNERS (NAD 83) AND ELLIPSOID HEIGHTS AND MILW ELEVATIONS ARE SHOWN AND BASED ON THE 1988 PERSPECTIVE DATUM AND PERSPECTIVE DATUM DESCRIBED IN NOTE 2.
- NO NEW MONUMENTS WERE SET THIS SURVEY.

VOLUME COMPUTATIONS

MINIMUM PLAY LINE (-1" MILW)	CUBIC YARDS
Between MINIMUM PLAY LINE (-1" MILW) and MAXIMUM PLAY LINE (-12" MILW)	489
VOLUME AVAILABLE ALONG SHORES (3.1' H.V.)	3,729
TOTAL	4,218

CONTROL DATA

STATION	NORTHING	EASTING	DESCRIPTION
N-BR-7-1981	1,330,027.90	2,794,367.44	USACE SBC
N-BR-8-1981	1,330,008.78	2,794,431.28	USACE SBC
N-BR-9-1981	1,330,001.85	2,794,461.63	USACE SBC
SBR-9-1981	1,329,202.77	2,794,429.14	USACE SBC
USM-1429	1,330,079.31	2,794,389.16	USACE SBC
SBR-2	1,330,164.04	2,794,800.87	USACE SBC
CH-5	1,330,674.05	2,794,601.23	USACE SBC
CH-1-1999	1,329,907.05	2,794,829.50	USACE DOWD BC
CH-2-2003	1,330,033.34	2,793,965.60	USACE DOWD BC
CH-4-2003	1,330,292.97	2,794,184.85	USACE DOWD BC

NAVIGATION AIDS

USCS No.	DESCRIPTION	NORTHING	EASTING
24485	BREAKWATER LIGHT 2	1,329,721.0	2,794,432.3
24486	ENTRANCE RANGE BEAR DAYBEACON	1,330,192.5	2,794,386.6
24487	ENTRANCE RANGE BEAR DAYBEACON	1,330,124.9	2,794,250.0

CONTRACTOR: TERESA SIMPSON, LLC
CITY PALMER
STATE ALASKA

CONTRACT NO.: W11K-04-D-0006-0016

SURVEYED: ALASKA DISTRICT
ENGINEER: CORPS OF ENGINEERS
DRAWN: ANCHORAGE, ALASKA
CHECKED: CRAIG HARBOR
DESIGNED: PROJECT CONDITION SURVEY
SUBMITTED: MAY 2-6, 2007
RECOMMENDED: APPROVED: _____ DATE: _____

SURVEY NO.: 2456-07
SHEET: 1 OF 1

