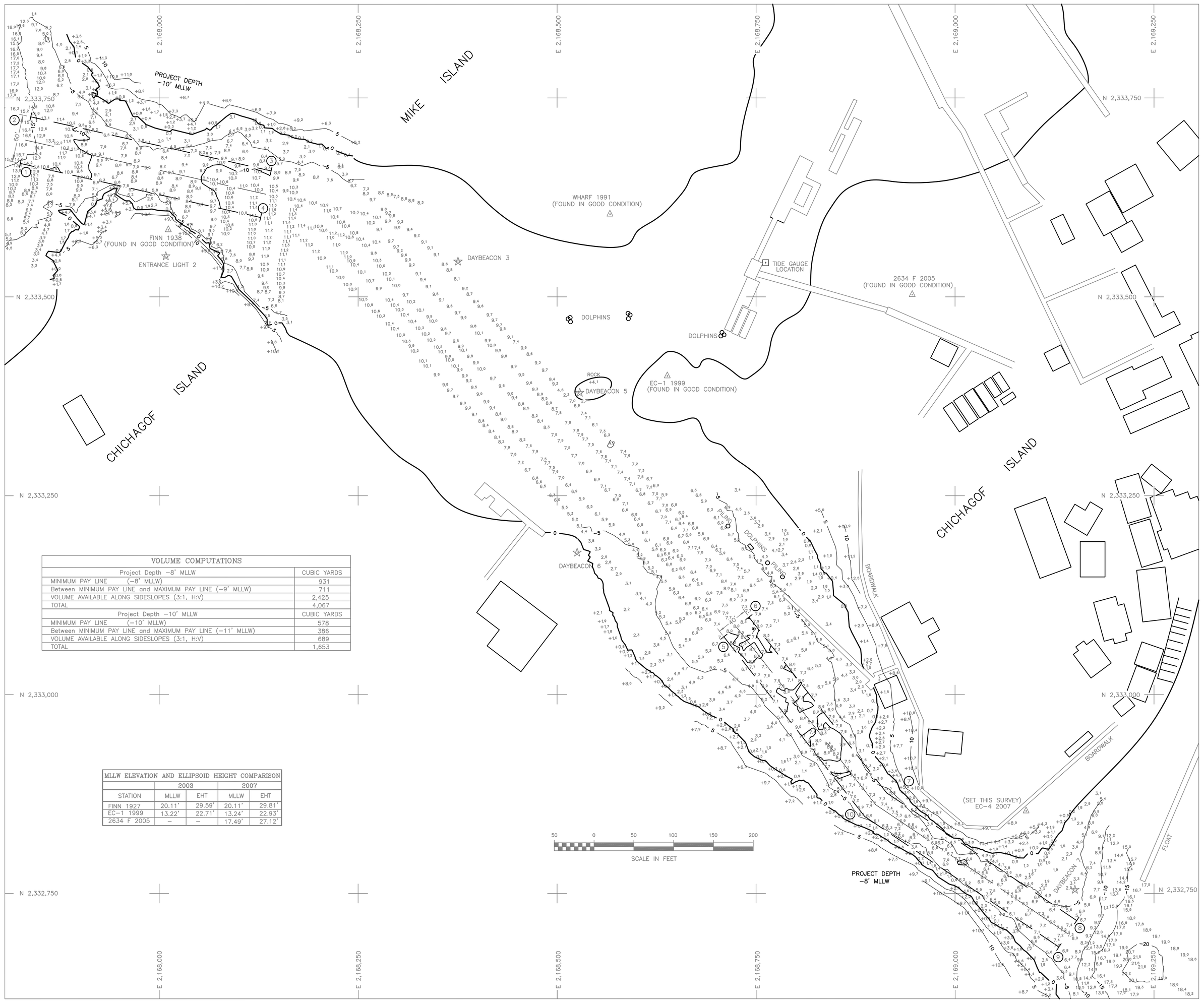

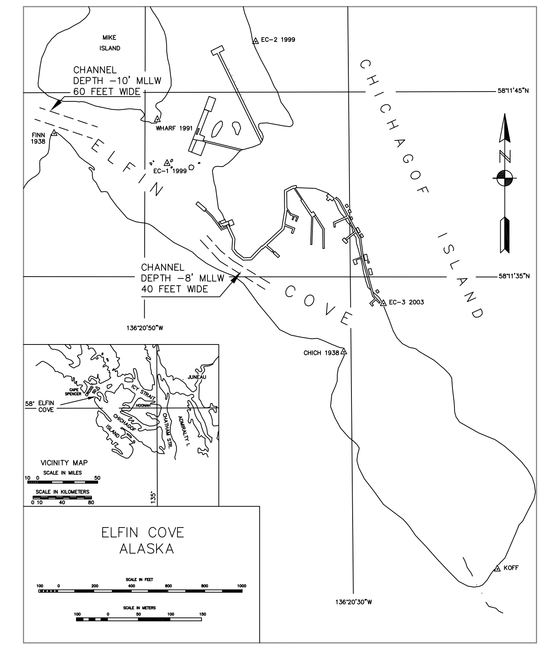

NOTES

1. HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83(CORS96), IN US SURVEY FEET, BASED ON A 2003 STATIC GPS NETWORK HOLDING THE NGS EPOCH 2003.00 CORS L1 PHASE CENTER VALUES FIXED FOR "LEVEL ISLAND 1" (NGS PID AJ4431), "BIORKA ISLAND 1" (NGS PID AI5023) AND "GUSTAVUS 2" (NGS PID AJ7921). HARBOR CONTROL WAS TRANSFORMED INTO THE NGS EPOCH 2003.00 DATUM HOLDING USCGS SBC "FINN 1938" AS N 2,333,584.31, E 2,168,011.75 AND USACE DOMED BC "EC-1 1999" AS N 2,333,400.55, E 2,168,638.72.(SEE NOTE 6 BELOW)

2. VERTICAL CONTROL IS MEAN-LOWER-LOW-WATER DATUM, IN US SURVEY FEET (MLLW=0,0') HOLDING USCGS TIDAL BENCH MARK "BENCH MARK 4 1959" AS 21.18'. TIDAL DATUM IS BASED ON NATIONAL OCEAN SERVICE (NOS) PUBLISHED BENCH MARK SHEET FOR 9452634 ELFIN COVE, PORT ALTHORP, ALASKA, PUBLISHED MARCH 24, 2006. TIDAL DATUMS BASED ON 1983-2001 TIDAL EPOCH.

3. SOUNDINGS ARE IN US SURVEY FEET AND ARE MINUS UNLESS INDICATED OTHERWISE.

4. THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF SURVEY.

5. SURVEY DATA ACQUISITION WAS PERFORMED MAY 15-18, 2007. SOUNDINGS WERE COLLECTED USING AN ODOM HYDROTRAC PRECISION DEPTH SOUNDER WITH A 200KHZ, 3 DEGREE BEAM-WIDTH, SINGLE-BEAM TRANSDUCER. POSITIONING WAS PROVIDED USING A TRIMBLE 4000SSI RECEIVER OPERATING ON RTCM CORRECTIONS BROADCAST FROM A TRIMBLE 4000SSE RECEIVER SET AT USACE DOMED BC "EC-1 1999". NAVIGATION, DATA COLLECTION AND DATA PROCESSING WERE PERFORMED USING HYPACK MAX INTEGRATED SOFTWARE. SOUNDINGS WERE CORRECTED FOR TIDE USING 1HZ RTK DATA. REDUNDANT WATER LEVEL DATA COLLECTED USING A DAA WATERLOG H-500XL RECORDER AND H-310 PRESSURE TRANSDUCER SET BY TERRASOND, LTD THIS SURVEY. HORIZONTAL CONTROL WAS SURVEYED USING CONVENTIONAL EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING OPTICAL INSTRUMENTS AND DIFFERENTIAL LEVELING TECHNIQUES. PLANIMETRIC FEATURES WERE SURVEYED USING OPTICAL INSTRUMENTS, CONVENTIONAL LAND-SURVEYING TECHNIQUES AND RTK GPS.

6. STATIC GPS SESSIONS OF 2+ HOURS WERE OBSERVED AT "2634 F 2005", "EC-1 1999" AND "FINN 1938". ELLIPSOID HEIGHTS WERE PROCESSED USING THE NOS ONLINE POSITIONING USER SERVICE (OPUS) HOLDING NAD83 (CORS96), EPOCH 2003.00 VALUES FOR "BIORKA ISLAND 1 CORS ARP" (NGS PID AI5022), "LEVEL ISLAND 1 CORS ARP" (NGS PID AJ4430) AND "GUSTAVUS 2 CORS ARP" (NGS PID AF9622). ELLIPSOID HEIGHTS AND MLLW ELEVATIONS ARE SHOWN IN THE "MLLW ELEVATIONS AND ELLIPSOID HEIGHT COMPARISONS" TABLE. ALL MLLW ELEVATIONS ARE BASED ON THE MOST CURRENT TIDAL DATUM AND EPOCH AS DESCRIBED IN NOTE 2.

VOLUME COMPUTATIONS

Project Depth -8' MLLW	CUBIC YARDS
MINIMUM PAY LINE (-8' MLLW)	931
Between MINIMUM PAY LINE and MAXIMUM PAY LINE (-9' MLLW)	711
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, H:V)	2,425
TOTAL	4,067
Project Depth -10' MLLW	**CUBIC YARDS**
MINIMUM PAY LINE (-10' MLLW)	578
Between MINIMUM PAY LINE and MAXIMUM PAY LINE (-11' MLLW)	386
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, H:V)	689
TOTAL	1,653

MLLW ELEVATION AND ELLIPSOID HEIGHT COMPARISON

	2003		2007	
STATION	MLLW	EHT	MLLW	EHT
FINN 1927	20.11'	29.59'	20.11'	29.81'
EC-1 1999	13.22'	22.71'	13.24'	22.93'
2634 F 2005	–	–	17.49'	27.12'

△ CONTROL DATA △

STATION	NORTHING	EASTING	ELEV.	DESCRIPTION
FINN 1938	2,333,584.31	2,168,011.75	20.11	USCGS SBC
CHICH 1938	2,332,329.64	2,169,537.25	18.69	USCGS SBC
WHARF 1991	2,333,603.96	2,168,566.55	14.87	NOS SBC
EC-1 1999	2,333,400.55	2,168,638.72	13.24	USACE DOMED BC
EC-2 1999	2,334,018.78	2,169,124.37	15.19	USACE DOMED BC
EC-3 2003	2,332,497.32	2,169,733.70	13.54	USACE DOMED BC
EC-4 2007	2,332,853.75	2,169,089.49	11.06	USACE DOMED BC
2634 F 2005	2,333,502.84	2,168,946.39	17.49	NOS SBC
BM 4 1959	VERTICAL ONLY		21.18	USCGS SBC
TIDAL BM YAGER	VERTICAL ONLY		19.68	USACE DOMED BC

PROJECT LIMITS

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
1	2,333,667.70	2,167,825.51	6	2,333,097.40	2,168,741.02
2	2,333,726.24	2,167,838.69	7	2,332,876.40	2,168,914.11
3	2,333,658.25	2,168,140.69	8	2,332,715.94	2,169,152.85
4	2,333,599.71	2,168,127.51	9	2,332,682.74	2,169,130.54
5	2,333,072.73	2,168,709.53	10	2,332,846.74	2,168,886.53

☆ NAVIGATION AIDS ☆

USCG NO.	DESCRIPTION	NORTHING	EASTING
24245	ENTRANCE LIGHT 2	2,333,551.19	2,168,008.07
24255	DAYBEACON 3	2,333,544.47	2,168,375.47
24260	DAYBEACON 5	2,333,379.46	2,168,528.45
24265	DAYBEACON 6	2,333,178.63	2,168,525.19
24270	DAYBEACON 7	2,332,754.76	2,169,150.59

CONTRACT NO. W911KB-04-D-0006-0016
CONTRACTOR TERRA SURVEYS, LLC
CITY PALMER STATE ALASKA

ALASKA DISTRICT
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SURVEYED: CDK/CRR
DRAWN: LES
CHECKED: KDW
SUBMITTED:

ELFIN COVE, ALASKA
NAVIGATION CHANNELS
PROJECT CONDITION SURVEY
MAY 15-18, 2007

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

SURVEY NO. 2457-07
SCALE: 1" = 50'
SHEET 1 OF 1