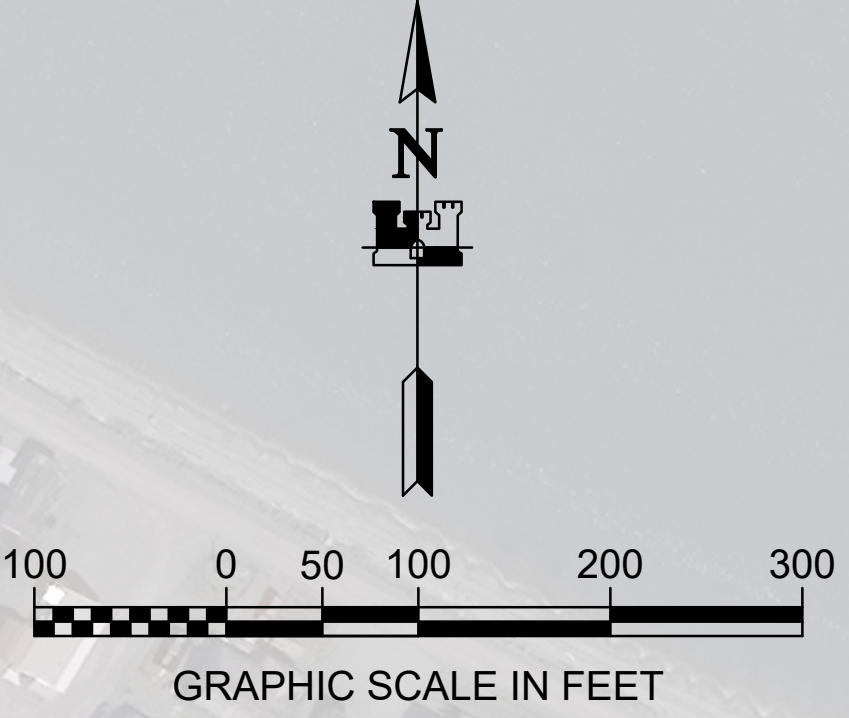


SHEET 2

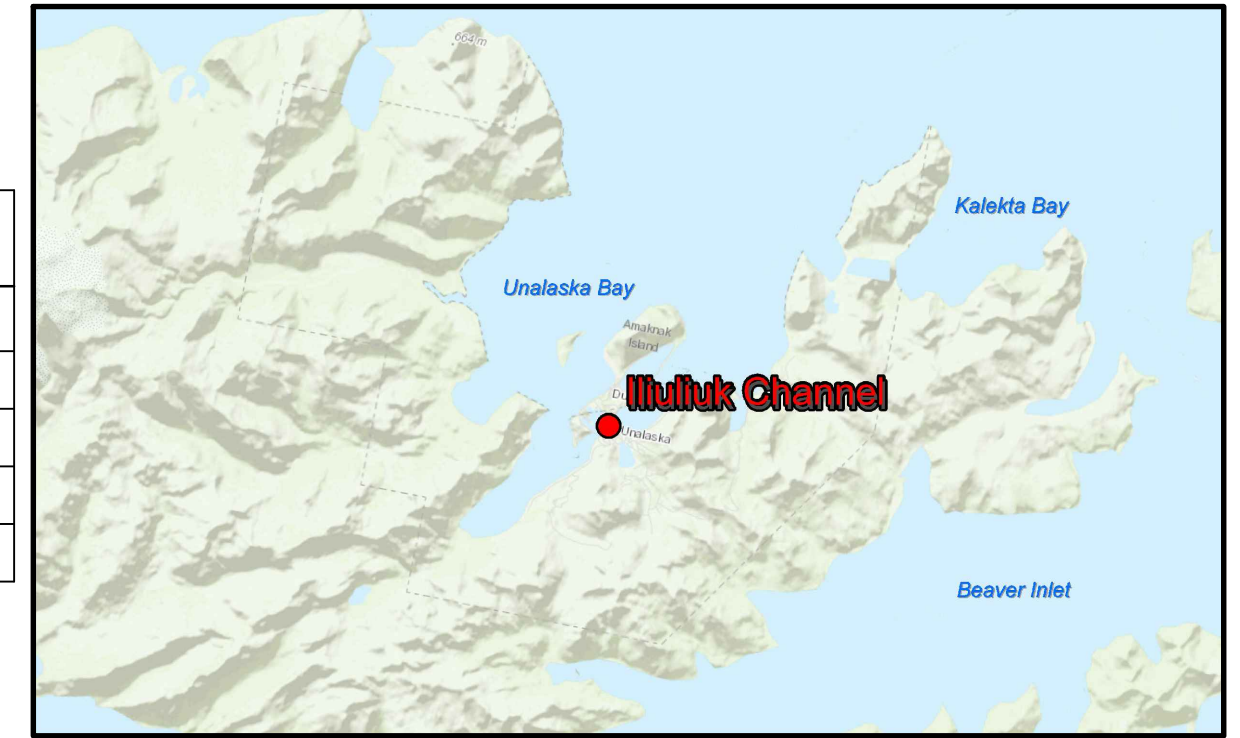
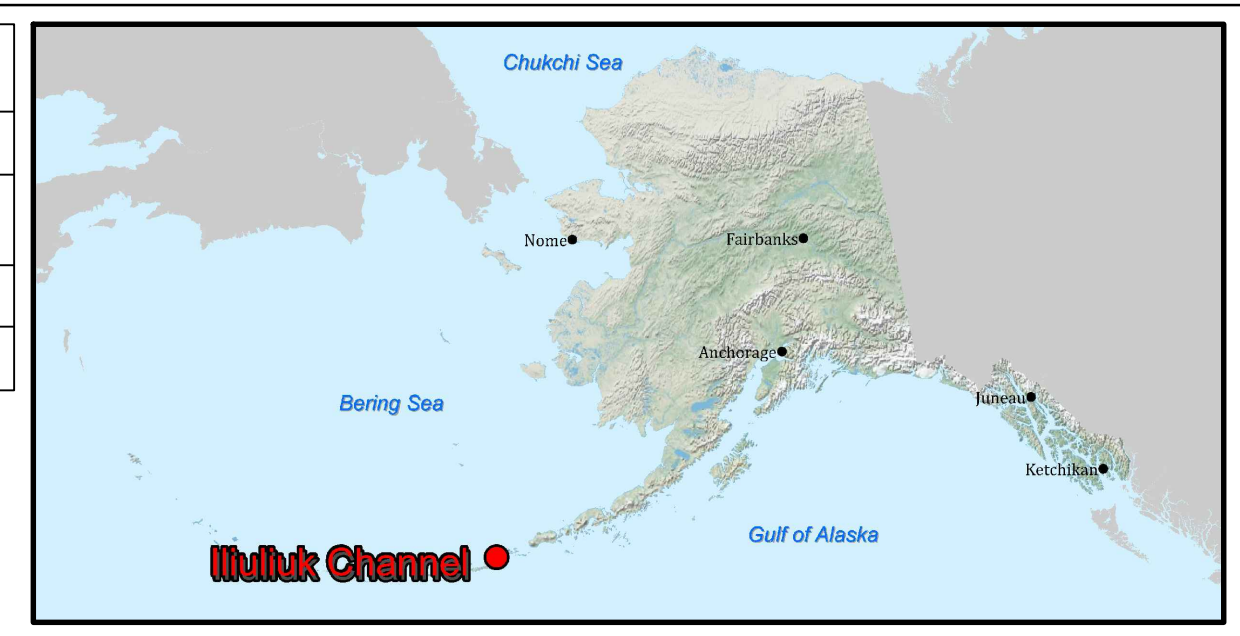
CHANNEL
PROJECT DEPTH:
-25 FT MLLW



NAVIGATION AIDS			
NO.	NORTHING	EASTING	DESCRIPTION
27470	1,184,417	5,317,364	UNALASKA CHANNEL LIGHTED BUOY 5 FI G 2.5S
27475	1,184,718	5,317,464	ILIULIUK REEF LIGHTED BUOY 6 FE R 4S
27480	1,184,993	5,316,995	ENTRANCE BUOY 8 (RED NUN)

PROJECT LIMITS		
CORNER#	NORTHING	EASTING
1	1,184,672.87	5,317,588.33
2	1,184,401.44	5,317,357.95
3	1,184,872.40	5,316,534.03
4	1,185,132.08	5,316,784.98

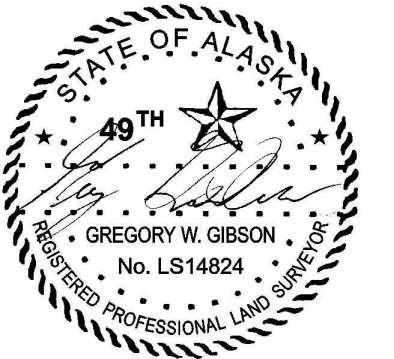
VOLUME COMPUTATIONS		
AREA A: CHANNEL	MLLW=0	CU. YD.
AVAILABLE TO PROJECT DEPTH (PD)	-25.0	2,929
AVAILABLE TO MAX PAY DEPTH (MP)	-26.0	4,143
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	2,530
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)		6,673



- NOTES**
- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 10, NAD83 (CORS). IN US SURVEY FEET BASED ON A STATIC GPS NETWORK HOLDING NGS EPOCH 2003.00 CORS L1 PHASE CENTER VALUES FOR "PLATINUM_AK 2007 CORS ARP" (NGS PID DL6672), "PORT HEIDEN AK 2007 CORS ARP" (NGS PID DL6447) AND "SAND POINT_AK 2004 CORS ARP" (NGS PID DL7635).
 - LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 10, NAD83, IN US SURVEY FEET HOLDING DOMED BC "NO 19 1973" AS N 1,183,685.10', E 5,317,889.85' AND DOMED BC "UH-4, 2014" AS N 1,181,692.30', E 5,313,719.62'.
 - VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0'), BASED ON THE NOAA/NOS TIDAL BENCH MARK LIST: "946 2620, UNALASKA, DUTCH HARBOR, ALASKA" PUBLISHED 10/24/2011. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/USCGS TIDAL BENCHMARK "NO. 19 1973" (VM#11816) AS 16.43'.
 - VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 (GEOID 12B) ELEVATIONS HOLDING NOAA/USCGS TIDAL BENCHMARK "NO. 19 1973" (PID BBBB51/VM#11816) AS 16.72'.
 - SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
 - BATHYMETRY WAS COLLECTED MAY 9, 2019. SOUNDINGS WERE COLLECTED USING AN R2SONIC 2020 MULTIBEAM ECHOSOUNDER OPERATING AT 400 KHZ. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH A AML BASE X SOUND VELOCITY PROBE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POSMV WAVEMASTER V5 SYSTEM RECEIVING RTK CORRECTIONS FROM A TRIMBLE R8 MODEL 3 GPS RECEIVER SET AT CONTROL STATION "NO 19 1973". DATA WAS COLLECTED AND PROCESSED USING QINSY 8.1 AND QIMERA 1.6 SOFTWARE. HORIZONTAL CONTROL WAS VERIFIED USING RTK GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING DIFFERENTIAL LEVELING TECHNIQUES.
 - THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
 - MAP SOUNDINGS ARE BINNED AT 24 FEET AND ARE SHOAL-BIASED. CONTOURS ARE BASED ON 12 FEET BINNED SHOAL-BIASED SOUNDINGS. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE MEAN VALUE SOUNDINGS.

SURVEY CONTROL DATA				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
2620 M 1982	1,184,130.08	5,317,058.63	10.97	NOS SBC
2620 P 1990	1,184,292.6	5,316,731.6	11.73	NOS SBC
GRAVE 1901-35	1,183,502.41	5,320,202.41	59.72	USCGS SBC (TRI STA)
IC-1 2002	1,185,550.28	5,316,753.29	14.6	3.25 INCH DOMED BC
IC-2 2006	1,184,659.58	5,316,533.53	7.42	3 INCH FLAT BC
IC-3 2006	1,183,334.86	5,319,086.52	16.02	3 INCH FLAT BC
NO. 19 1973	1,183,685.10	5,317,889.85	16.43	USCGS SBC (BENCH MARK)

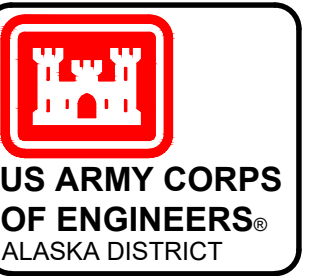
*Bench marks with coordinate precision of 0.1' were measured by RTK GNSS.



THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN NSPS/THSOA CERTIFIED HYDROGRAPHER

Gregory W. Gibson

Gregory W. Gibson (317)

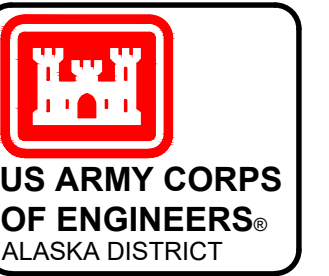
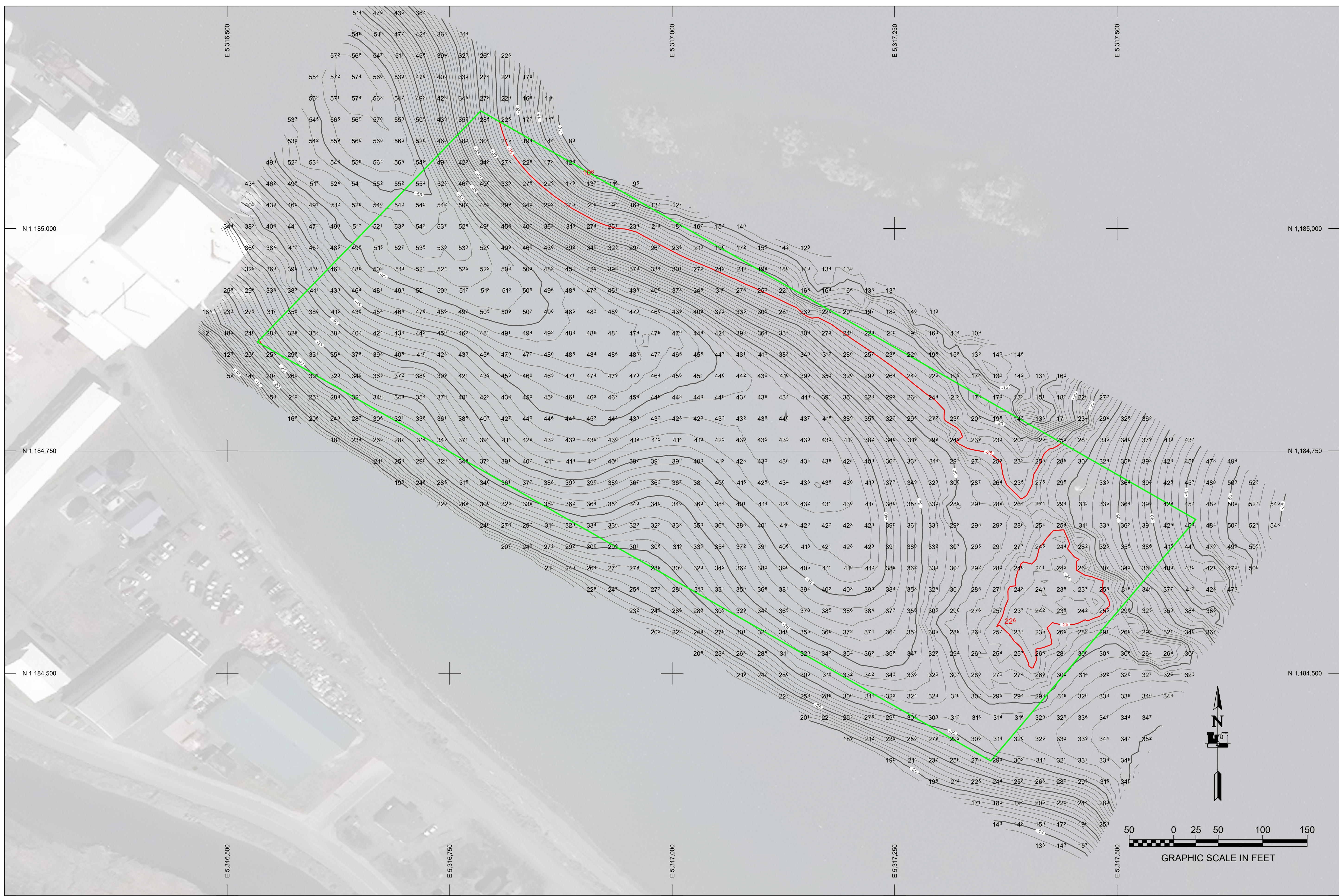


REV.	DATE	BY	APPR.	DESCRIPTION

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 204 3RD STREET JBER, ALASKA 99506-0888	SURVEYED BY: GREGORY W. GIBSON DRAWN BY: ROBERT GOUGHNOUR CHECKED BY: TASJGG/GVG PROJECT MANAGER: THOMAS SLOAN, CHIEF GEOMATICS SECTION FILE: 072796_VH02.DWG	UIC: 072796	CONTRACT NO.: 1W61TK-16-D-0014	STATE: ALASKA
		PLOT DATE: 17 July 2019	TASK ORDER NO.: 19P0060	
		SCALE: 1" = 100'	JOB NO.:	
		ANSI D	CONTRACTOR: LETRAC INC.	
			CITY: WASILLA	

UNALASKA, ALASKA
072796 - ILIULIUK CHANNEL
PROJECT CONDITION SURVEY
MAY 6 - MAY 10, 2019

REFERENCE NUMBER:
5-UAK-92-07-13
SHEET 1 OF 3

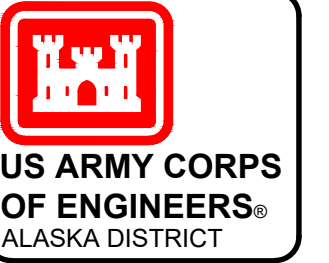


REV.	DATE	BY	APPR.	DESCRIPTION

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 204 3RD STREET JBER, ALASKA 99506-0888	U.P.C. GREGORY W. GIBSON 072796	CONTRACT NO.: 1W81TK-16-D-0014	STATE: ALASKA
DRAWN BY: ROBERT GOUGHNOUR	PLOT DATE: 17 July 2019	TASK ORDER NO.:	
CHECKED BY: TASJGGV/G	SCALE: 1" = 50'	JOB NO.:	
FILE: 072796_VH02.DWG	ANSI D	CONTRACTOR: ETRAC INC.	
	CHIEF GEOMATICS SECTION	CITY: WASILLA	

UNALASKA, ALASKA
072796 - ILIULIK CHANNEL
 PROJECT CONDITION SURVEY
 MAY 6 - MAY 10, 2019

REFERENCE NUMBER:
 5-UAK-92-07-13
 SHEET 2 OF 3



REV.	DATE	BY	APPR.	DESCRIPTION

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 204 3RD STREET BER, ALASKA 99506-0888	U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 204 3RD STREET BER, ALASKA 99506-0888	U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 204 3RD STREET BER, ALASKA 99506-0888	U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 204 3RD STREET BER, ALASKA 99506-0888
SURVEYED BY: GREGORY W. GIBSON	U.P.C. 072796	CONTRACT NO.: 1811K15-15D-0014	STATE: ALASKA
DRAWN BY: ROBERT GOUGHNOUR	PLOT DATE: 17 JULY 2019	TASK ORDER NO.: 18P0060	CITY: WASILLA
CHECKED BY: TASJG/GVG	SCALE: 1" = 50'	JOB NO.: 1811K15-15D-0014	CONTRACTOR: LETRAC INC.
FILE: 072796_VH02.DWG	CHIEF GEOMATICS SECTION	CONTRACTOR:	CONTRACTOR:

UNALASKA, ALASKA
072796 - ILILIUK CHANNEL
 PROJECT CONDITION SURVEY
 MAY 6 - MAY 10, 2019

REFERENCE NUMBER:
5-UAK-92-07-13
 SHEET 3 OF 3

