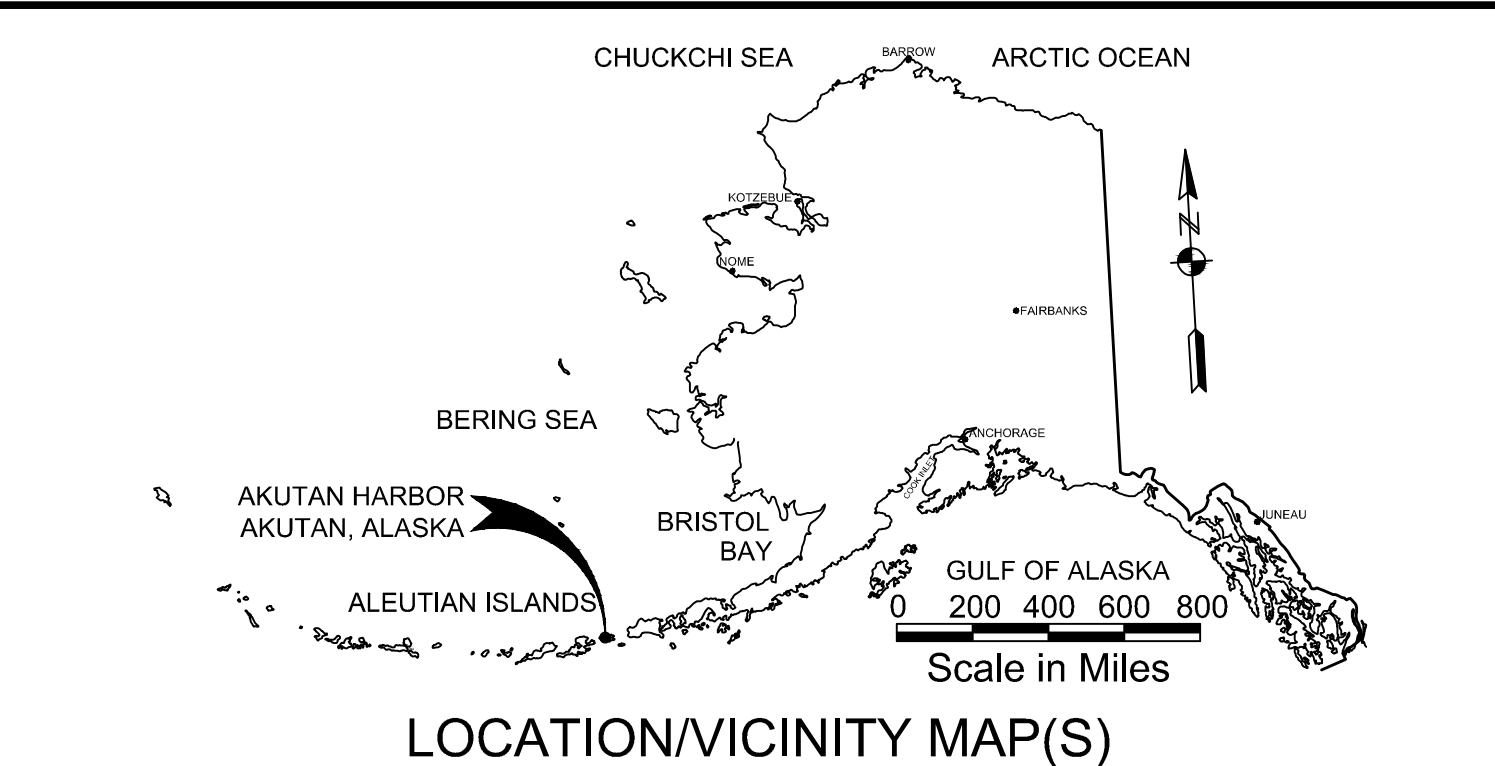
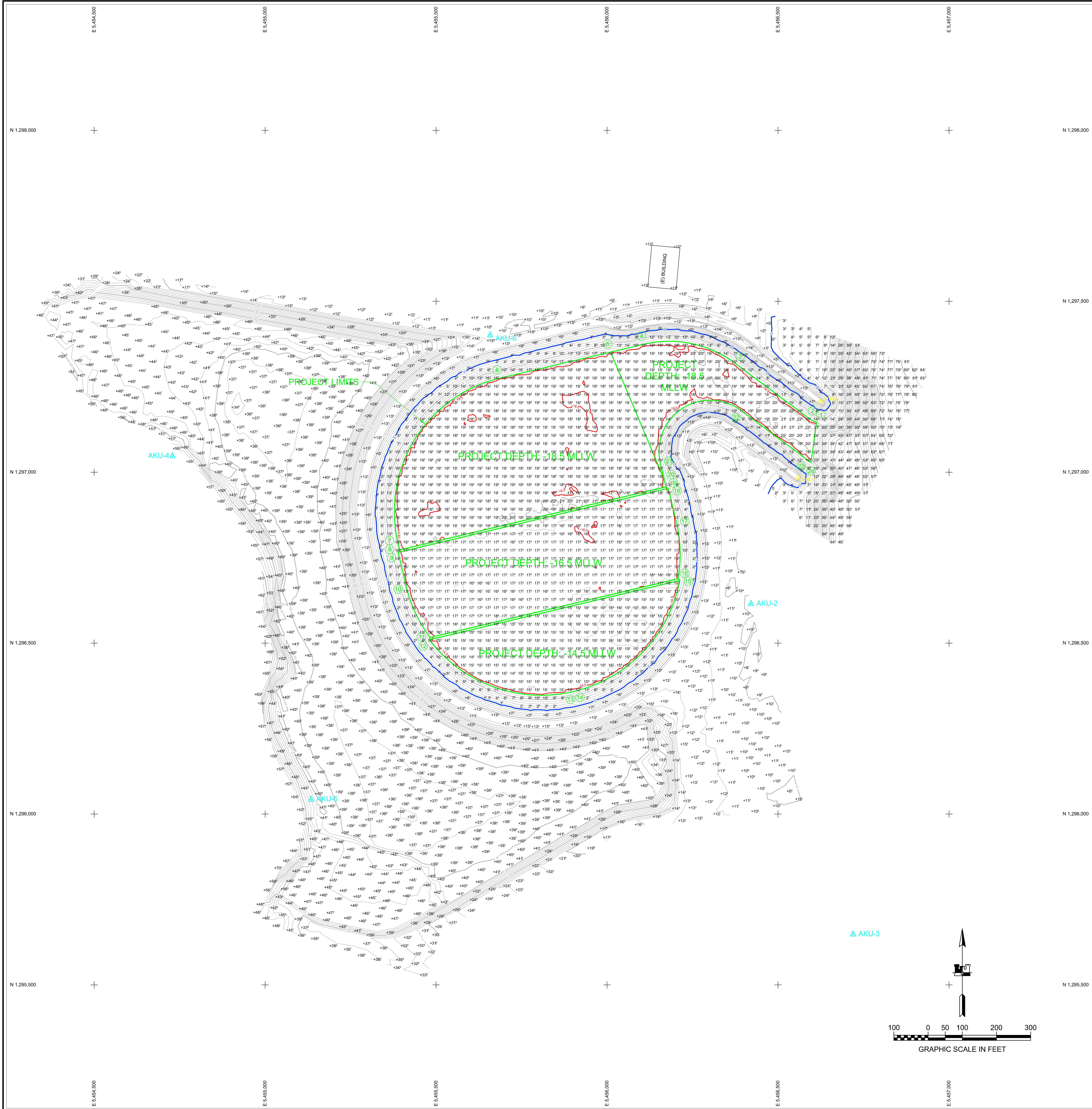


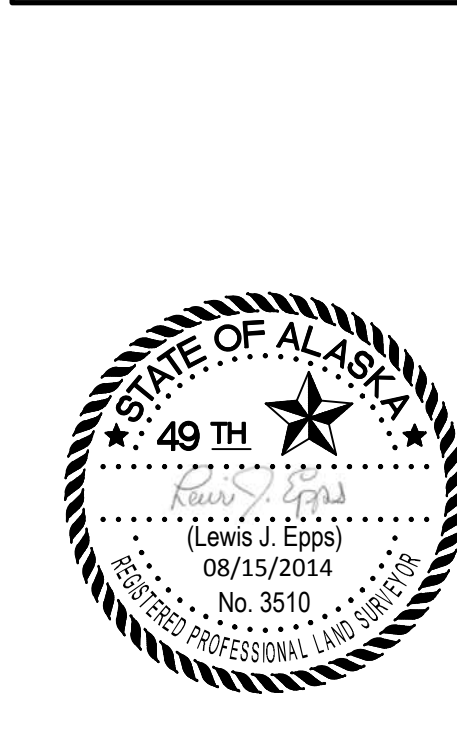


SURVEY CONTROL DATA				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
2694 A	1,299,455.52	5,466,077.56	11.01	NOS SBC
AKU-2	1,296,614.81	5,456,421.26	9.03	USACE SAC
AKU-3	1,295,647.95	5,456,719.70	39.86	USACE SBC
AKU-4	1,297,046.89	5,454,729.00	61.86	USACE SAC
AKU-5	1,296,042.56	5,455,134.57	43.37	USACE SBC
AKU-6	1,297,400.93	5,455,657.90	9.87	USACE SBC
USLM 766	1,298,383.86	5,456,549.23	14.83	3.25 INCH DOMED BC

NAVIGATION AIDS			
USCG NO.	NORTHING	EASTING	DESCRIPTION
27427	1,296,984	5,456,558	AKUTAN SMALL BOAT HARBOR LIGHT 1 FL G
27428	1,297,206	5,456,624	AKUTAN SMALL BOAT HARBOR LIGHT 2 FL R

PROJECT LIMITS			PROJECT LIMITS		
CORNER#	NORTHING	EASTING	CORNER#	NORTHING	EASTING
1	1,297,146.13	5,456,612.84	13	1,296,357.29	5,455,898.10
2	1,297,154.88	5,456,594.07	14	1,296,358.40	5,455,902.92
3	1,297,316.98	5,456,376.28	15	1,296,683.42	5,456,212.81
4	1,297,374.28	5,456,107.64	16	1,296,688.36	5,456,207.61
5	1,297,351.25	5,456,010.49	17	1,296,852.96	5,456,202.90
6	1,297,274.98	5,455,685.57	18	1,296,952.73	5,456,179.24
7	1,296,793.48	5,455,388.65	19	1,296,957.18	5,456,172.02
8	1,296,772.59	5,455,393.61	20	1,296,976.98	5,456,167.61
9	1,296,765.37	5,455,389.15	21	1,297,026.82	5,456,155.80
10	1,296,665.61	5,455,412.81	22	1,297,181.16	5,456,391.28
11	1,296,516.42	5,455,482.51	23	1,297,037.71	5,456,584.01
12	1,296,509.67	5,455,480.08	24	1,297,028.44	5,456,596.47

VOLUME COMPUTATIONS		
PROJECT DEPTH -14.5 FEET		
AVAILABLE TO PROJECT DEPTH (-14.5)	42 CU. YD.	
PROJECT DEPTH -16.5 FEET		
AVAILABLE TO PROJECT DEPTH (-16.5)	45 CU. YD.	
PROJECT DEPTH -18.5 FEET		
AVAILABLE TO PROJECT DEPTH (-18.5)	166 CU. YD.	
TOTAL AVAILABLE	253 CU. YD.	



THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACSM/THOSAA CERTIFIED HYDROGRAPHER

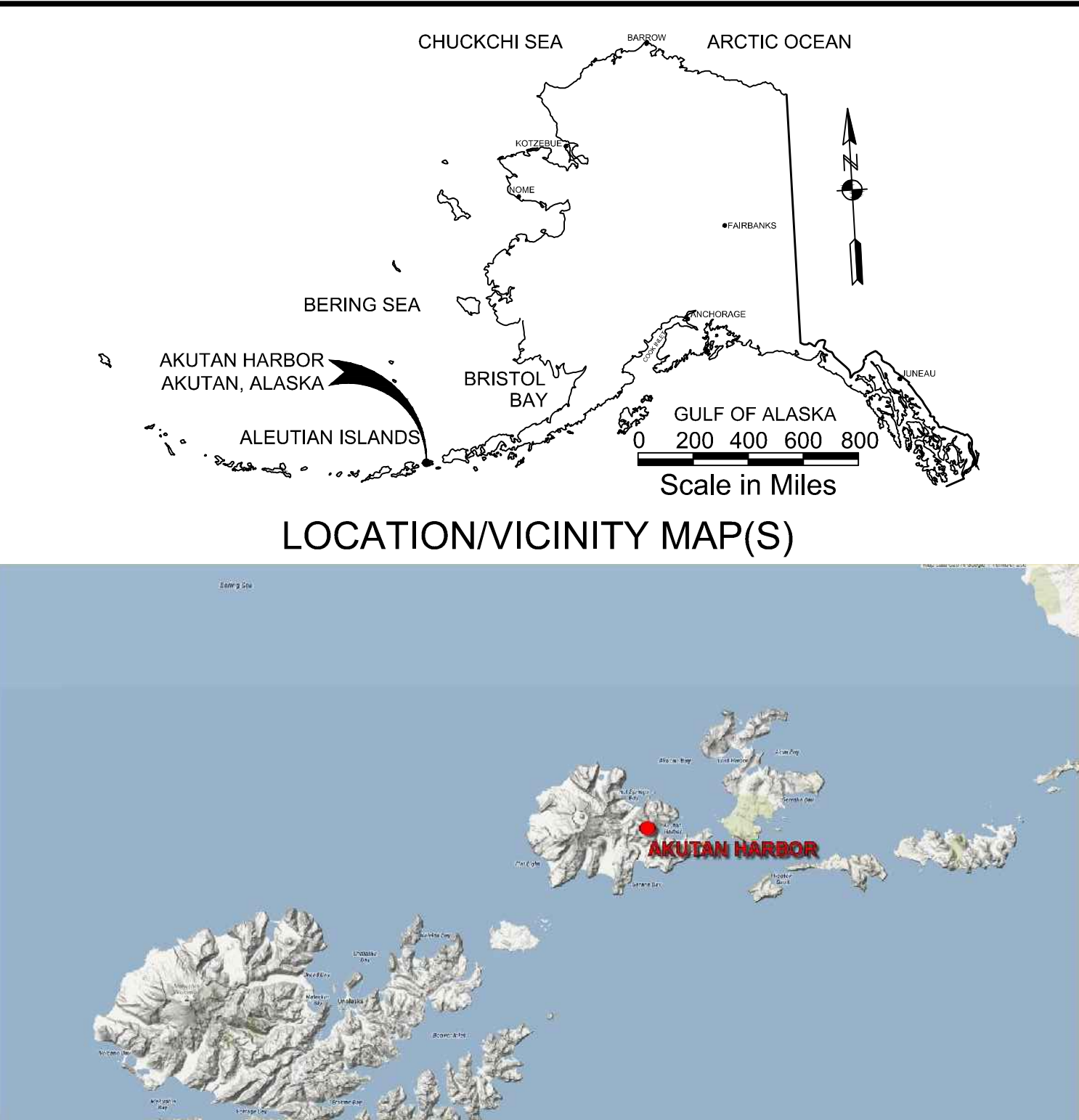
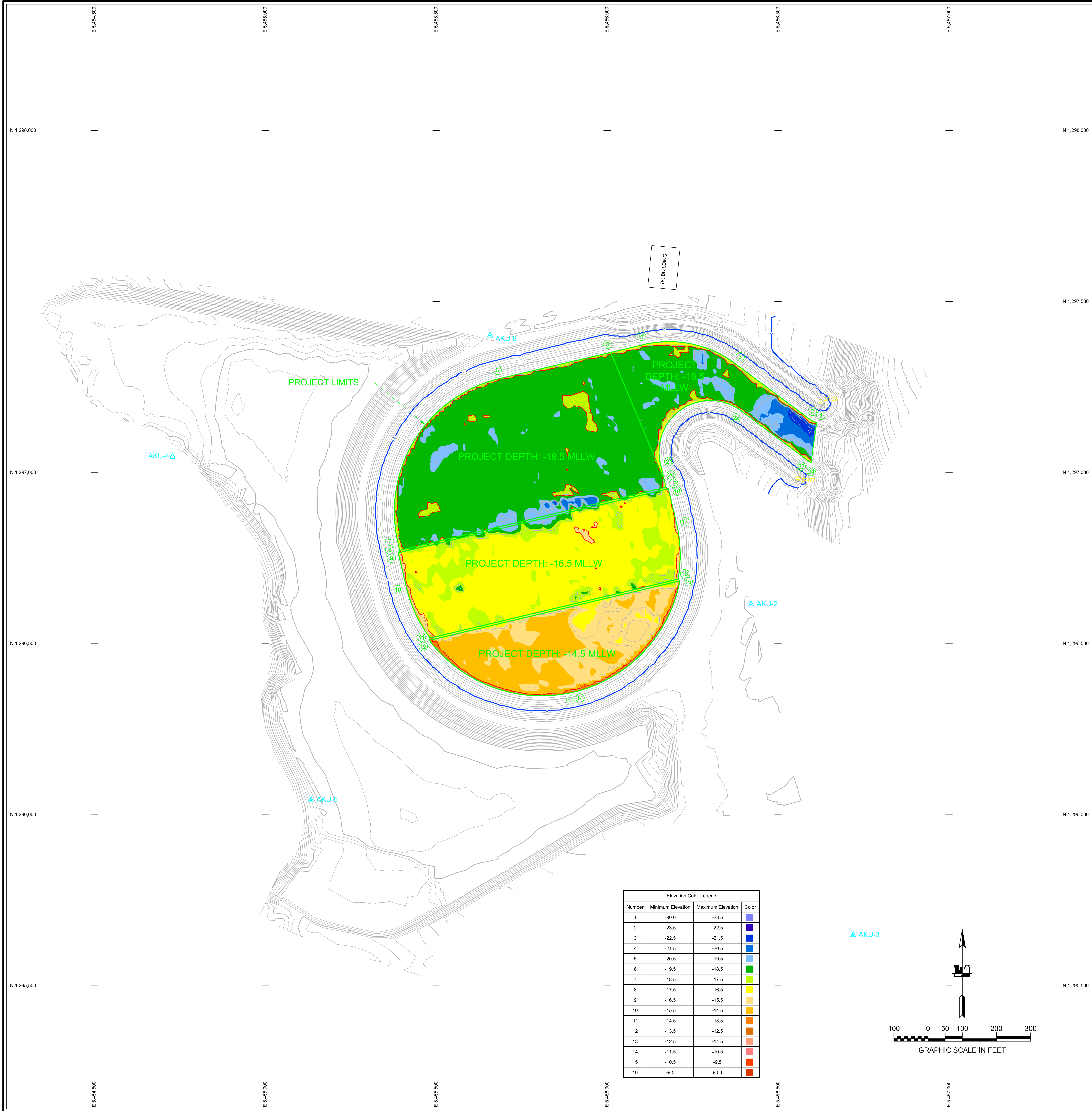
David R. Neff C.H. (275)

AKUTAN, ALASKA
AKUTAN HARBOR
PROJECT CONDITION SURVEY
JUNE 27 - JULY 05, 2014

SHEET IDENTIFICATION

5-AKU-92-07-01

Sheet 1 of 2



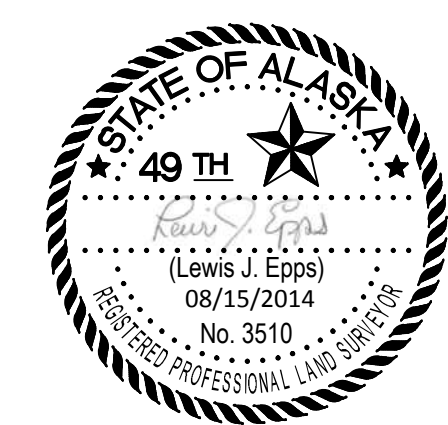
- NOTES
- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 10, NAD83 (CORS96), IN US SURVEY FEET BASED ON A STATIC GPS NETWORK HOLDING NGS EPOCH 2003.00. THE BASIS OF COORDINATES IS NOAA/NOS TIDAL BENCH MARK "2694 A 2009" (PID BBH20). THE PRIMARY BENCH MARK AT TIDE STATION 946-2694 AKUTAN, ALASKA. BENCH MARK "2694 A 2009" IS A NOS 3-1/2" BRASS DISK LOCATED AT THE CITY DOCK IN AKUTAN AND HAS A VALUE OF N1,299,455.52 AND E5,466,077.56 U.S. FEET.
 - LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 10, NAD83, IN US SURVEY FEET HOLDING 3-1/2" BRASS DISK "2694 A 2009" AS N 1,299,455.52, E 5,466,077.56.
 - VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0'), BASED ON THE NOAA/NOS TIDAL BENCH MARK LIST: "946 2694, AKUTAN, ALASKA" PUBLISHED 06/09/2008. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/USCGS TIDAL BENCHMARK "2694 A 2009" AS 11.01.
 - VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 (GEOID 12A) ELEVATIONS HOLDING NOAA/USCGS TIDAL BENCHMARK "2694 A 2009" (PID BBH20/MH19205) AS 11.10.
 - SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
 - BATHYMETRY WAS COLLECTED JULY 02, 2014. SOUNDINGS WERE COLLECTED USING AN R2SONIC 2022 MULTIBEAM ECHOSOUNDER OPERATING AT 200 KHZ. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH A MINOS BASE X SOUND VELOCITY PROBE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POSH WAVEMASTER VS SYSTEM. DATA WAS COLLECTED AND PROCESSED USING QINSY 8.1 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING STATIC 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.

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David R. Neff C.H. (275)

US Army Corps of Engineers
ALASKA DISTRICT

CONTRACT NO. W49122-04-0003
CONTRACTOR: ETRAC, INC.
CITY: SAN RAFAEL, STATE: CALIFORNIA
Recommended: [Signature]
Approved: [Signature]
Date: 09/15/2014

DATE: 09/15/2014
CHECKED BY: [Signature]
DRAWN BY: [Signature]
PROJECT NO.: W49122-04-0003
JOB NO.: [Signature]
SCALE: [Signature]
SIZE: [Signature]
FILE NAME: [Signature]

U.S. ARMY CORPS OF ENGINEERS
ALASKA DISTRICT
JBEF, ALASKA 99506-0988
ETRAC, INC.
637 IND. SAN RAFAEL, CA 94901

AKUTAN, ALASKA
AKUTAN HARBOR
PROJECT CONDITION SURVEY
JUNE 27 - JULY 05, 2014

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Sheet 2 of 2