

NOTES

- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83, (2011/2010.00), IN US SURVEY FEET BASED ON A FULLY CONSTRAINED STATIC GPS NETWORK HOLDING THE PUBLISHED NAD83 2010.00 EPOCH VALUES OF NGS CORS STATIONS: "JUNEAU WAAS 1 CORS ARP" (PID DF4367), "GUSTAVUS 5 CORS ARP" (PID DK6229), "SITKA CORS ARP" (PID DQ7572), "LEVEL ISLAND 5 CORS ARP" (PID DJ3033), AND "PORT ALEXAN AK 2005 CORS ARP" (PID DL6695).
- LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83, IN US SURVEY FEET HOLDING "BOON 2 1950" AS N 2,040,628.85, E 2,294,415.53 (PID BBF242) AND "SARAH" AS N 2,042,261.88, E 2,300,022.38 (PID BBD041).
- VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW = 0.0'), BASED ON THE NOAA/NS TIDAL BENCHMARK LIST: "945 1853, SERGIUS NARROWS, ALASKA" PUBLISHED 03/04/2009. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/USCGS TIDAL BENCHMARK "SHOAL 2 NO 2 1950" (PID AH7509/VM14457) AS 14.40'.
- VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 (GEOID12B) ELEVATIONS HOLDING NOAA/USCGS TIDAL BENCHMARK "945 1853 B" (VM16671) AS 10.82'.
- SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED APRIL 28-29, 2018. SOUNDINGS WERE COLLECTED USING AN RZSONIC 2022 MULTIBEAM ECHOSOUNDER OPERATING AT 200 KHZ. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN AKI BASE X SOUND VELOCITY PROBE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLIX POSMV WAVEMASTER V5 SYSTEM. DATA WAS COLLECTED AND PROCESSED USING QINSY 8.1 AND QIMERA 1.5 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING STATIC GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING STATIC GNSS AND DIFFERENTIAL LEVELING EQUIPMENT AND TECHNIQUES.
- THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.

SURVEY CONTROL DATA				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
1853 B	2,041,954.84	2,299,842.27	13.19	NOAA/NS TIDAL BENCHMARK
BOON 2 1950	2,040,628.85	2,294,415.53	12.30	USC&GS SURVEY DISK
FJERN 2001	2,037,810.46	2,293,136.81	12.81	BRASS DISK
SARAH	2,042,261.88	2,300,022.38	15.16	BRASS DISK
SN-1	2,041,633.60	2,297,680.67	15.01	USC&GS SURVEY DISK

PROJECT LIMITS		
CORNER#	NORTHING	EASTING
1	2,041,141.00	2,299,961.00
2	2,040,681.00	2,298,347.00
3	2,038,168.00	2,296,403.00
4	2,036,964.00	2,296,325.00

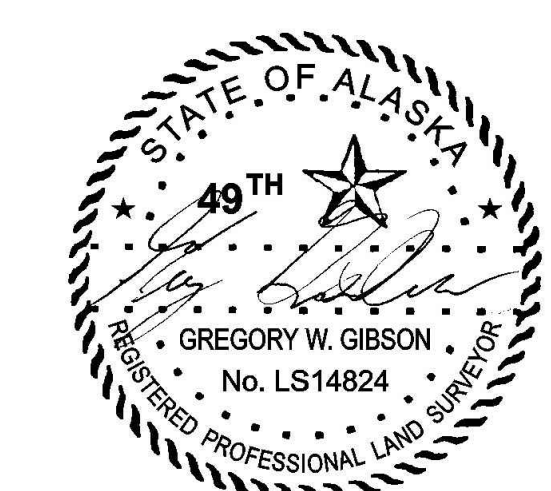
PROJECT LIMITS		
CORNER#	NORTHING	EASTING
5	2,036,944.00	2,295,876.00
6	2,040,497.00	2,296,058.00
7	2,041,609.00	2,299,961.00

OBSTRUCTION DATA				
ID	NORTHING	EASTING	DEPTH	APPROX SIZE (FEET)
OBST-001	2,040,404.4	2,297,405.5	-21.3	35X31X11
OBST-002	2,040,813.7	2,298,466.6	-17.2	10X10X13
OBST-003	2,040,100.8	2,297,063.8	-21.1	9X6X3

PROJECT LIMITS CURVE DATA			
CURVE	RADIUS	ARC LENGTH	DELTA ANGLE
C1	2679.06'	3400.96'	72°44'05"

NAVIGATION AIDS			
USCG NO.	NORTHING	EASTING	DESCRIPTION
25190	2,040,189	2,296,710	WEST FRANCIS ROCK LIGHTED BOUY 6
25195	2,040,860	2,298,505	SERGIUS NARROWS BOUY 8
25200	2,041,326	2,298,664	SERGIUS NARROWS LIGHT 9
25205	2,041,062	2,299,078	WAYANDA LEDGE BOUY 10

VOLUME COMPUTATIONS		
AREA A: CHANNEL	MLLW=0	CU. YD.
AVAILABLE TO PROJECT DEPTH (PD)	-24.0	232
AVAILABLE TO MAX PAY DEPTH (MP)	-25.0	525
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	1,134
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)		1,659



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

Gregory W. Gibson

Gregory W. Gibson (317)

US Army Corps of Engineers - ALASKA DISTRICT

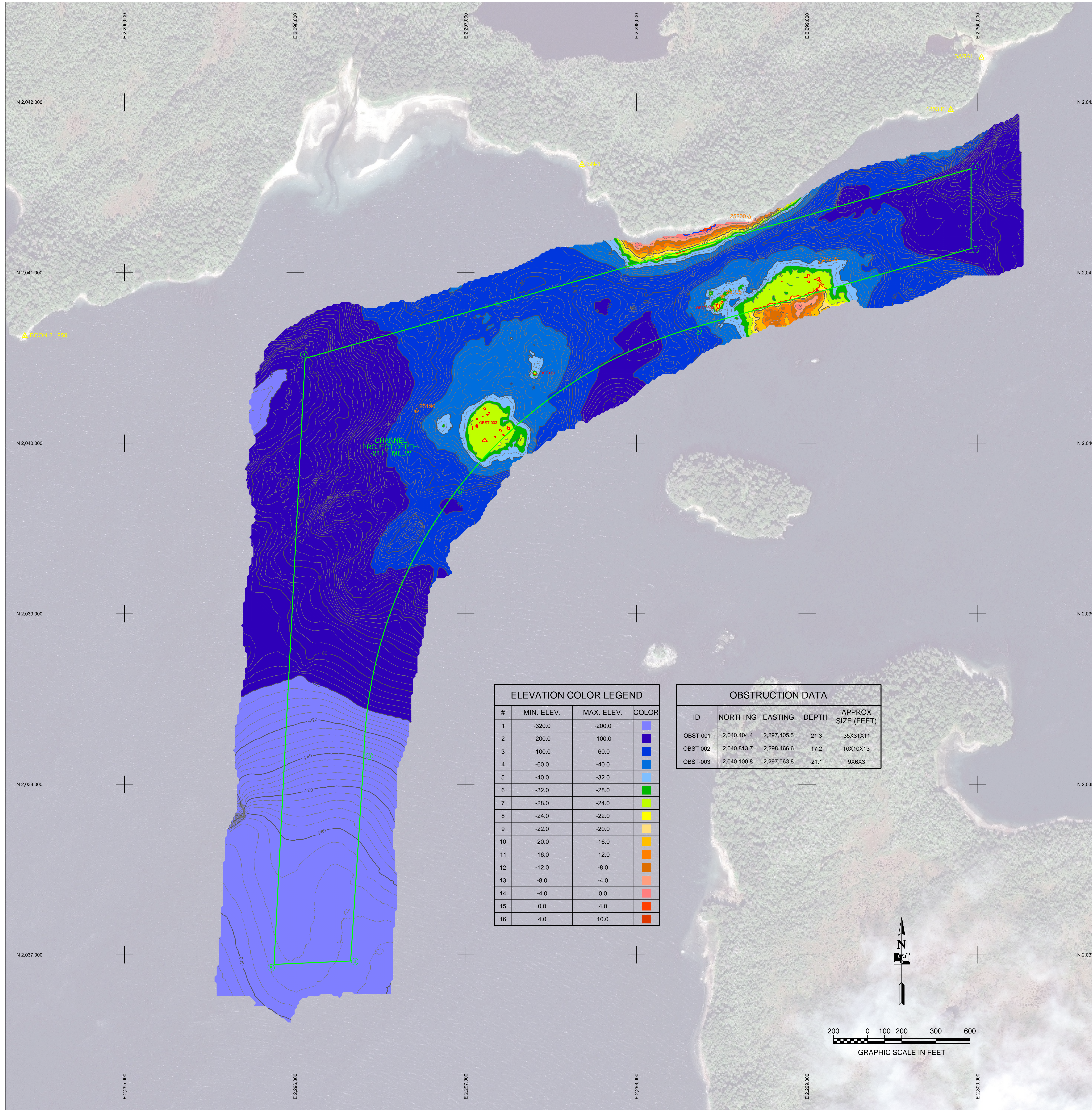
CONTRACT NO. W91106-14-0-019-0004
 CONTRACTOR: ETIMC, INC.
 CITY: WASILLA, ALASKA
 STATE: ALASKA
 APPROVED BY: MICHAEL E. MUELLER
 RECOMMENDED BY: THOMAS A. BLONIN
 DATE: 07/25/2018

NO.	DESCRIPTION	DATE	BY	APP'D	REVISION

U.S. ARMY CORPS OF ENGINEERS
 ALASKA DISTRICT
 JBER, ALASKA 99506-0888
 DRAWN BY: JBER/THS/STG
 CHECKED BY: JBER/THS/STG
 FILE NAME: 072744-01.dwg
 DATE: 07/25/2018
 SIZE: 1" = 200'

PERIL STRAITS, ALASKA
 072744 - SERGIUS NARROWS
 PROJECT CONDITION SURVEY
 APRIL 28-29, 2018

SHEET IDENTIFICATION
 1-SER-92-07-08
 Sheet 1 of 2



ELEVATION COLOR LEGEND			
#	MIN. ELEV.	MAX. ELEV.	COLOR
1	-320.0	-200.0	Light Blue
2	-200.0	-100.0	Blue
3	-100.0	-60.0	Dark Blue
4	-60.0	-40.0	Light Blue
5	-40.0	-32.0	Light Blue
6	-32.0	-28.0	Light Green
7	-28.0	-24.0	Light Green
8	-24.0	-22.0	Yellow
9	-22.0	-20.0	Yellow
10	-20.0	-16.0	Orange
11	-16.0	-12.0	Orange
12	-12.0	-8.0	Orange
13	-8.0	-4.0	Red
14	-4.0	0.0	Red
15	0.0	4.0	Red
16	4.0	10.0	Red

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- THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
- MAP SOUNDINGS ARE BINNED AT 48 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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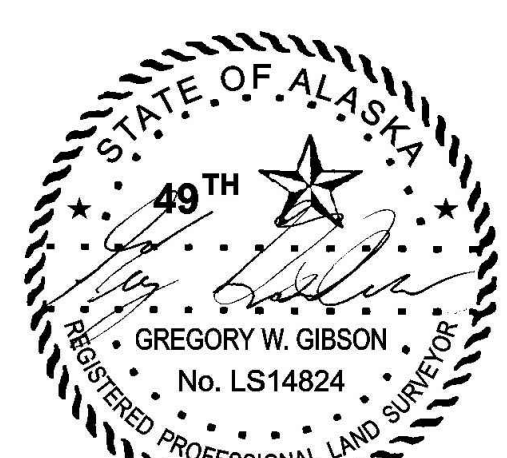
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US Army Corps of Engineers - ALASKA DISTRICT

CONTRACT NO. W11H6144-01-019004
 CONTRACTOR: ETIMC, INC.
 CITY: WASILLA, ALASKA
 STATE: ALASKA
 APPROVED BY: MICHAEL E. MUELLER
 RECOMMENDED BY: THOMAS A. BLONN
 DATE: 07/26/2018

NO.	DESCRIPTION	DATE	BY	APP'D	REVISION

U.S. ARMY CORPS OF ENGINEERS
 ALASKA DISTRICT
 JBER, ALASKA 99506-0888
 DRAWN BY: JBER/ALASKA/99506-0888
 CHECKED BY: Thomas A. Blonn, Chief Estimator/Service
 FILE NAME: 072744-0101
 DATE: 04/28/2018
 SIZE: 11" x 17"
 SCALE: AS SHOWN

PERIL STRAITS, ALASKA
 072744 - SERGIUS NARROWS
 PROJECT CONDITION SURVEY
 APRIL 28-29, 2018

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 1-SER-92-07-08
 Sheet 2 of 2