

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 "LEVEL ISLAND 5 CORS ARP" (PID DJ3033), "KLAWOCKAIRAK2006 CORS ARP" (PID DM7451), "ANNETTE ISLAND 5 CORS ARP" (PID DK6482).
- LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83(2011), IN US SURVEY FEET HOLDING "BM-1 1924" AS N 1,612,497.22, E 2,486,478.63 AND "PAH-1 1999" AS N 1,610,524.35, E 2,485,989.34.
- VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0), BASED ON THE NOAA'S TIDAL BENCH MARK LIST "9451054 PORT ALEXANDER, BARANOF ISLAND, ALASKA", PUBLISHED 18 DEC 2012. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA'S TIDAL BENCH MARK "945 1054 TIDAL 1" (PID BBDC38/VM18470) AS 16.42.
- VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 (GEOID 12B) ELEVATIONS HOLDING NOAA'S TIDAL BENCHMARK "945 1054 TIDAL 1" (PID BBDC38/VM18470) AS 15.26.
- SOUNDINGS ARE IN US SURVEY FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED MAY 21, 2016. SOUNDINGS WERE COLLECTED USING AN RESONIC 2022 MULTIBEAM ECHOSOUNDER OPERATING AT 200 KHZ. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN AML BASE X SOUND VELOCITY PROBE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POSMV OCEANMASTER V5 SYSTEM. DATA WAS COLLECTED AND PROCESSED USING CINSY 8.1 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING STATIC GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING DIFFERENTIAL LEVELING TECHNIQUES AND STATIC GNSS NETWORKS.
- THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
- MAP SOUNDINGS ARE BINNED AT 24 FEET AND ARE SHOAL BIASED. COUNTOURS ARE BASED ON 12 FEET BINNED SHOAL-BIASED SOUNDINGS. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE MEAN VALUE.

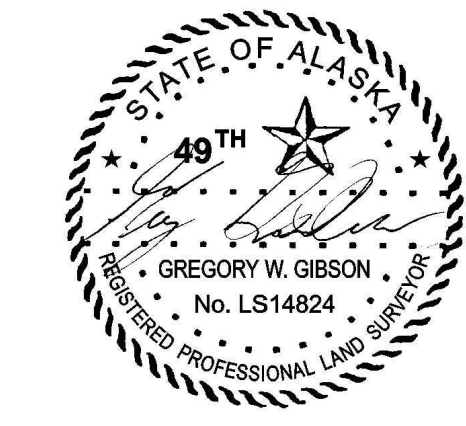
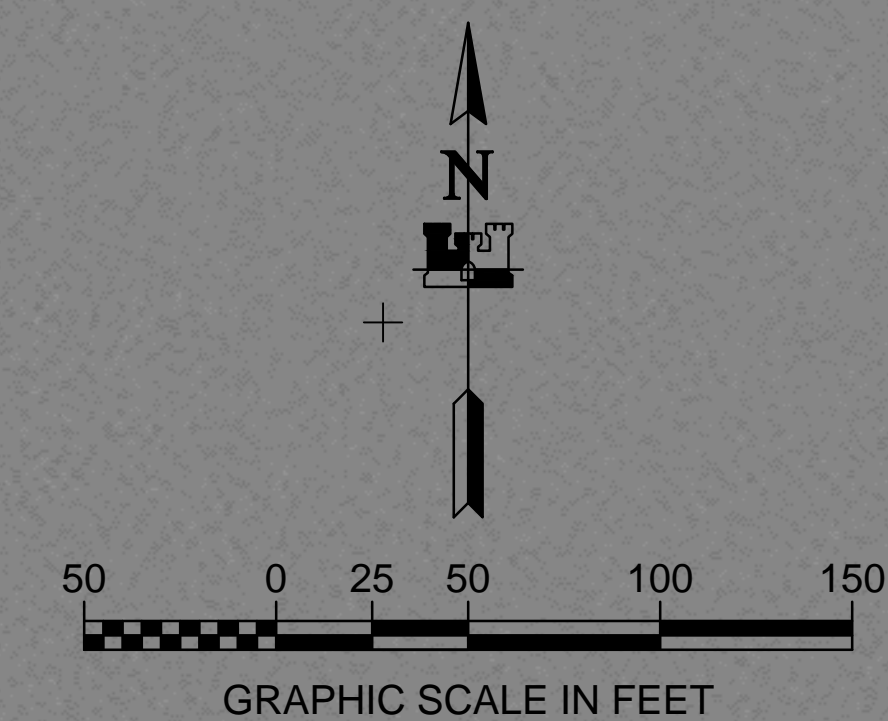
SURVEY CONTROL DATA				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
BM 1 1924	1,612,497.22	2,486,478.63	16.42	3.5" STANDARD DOMED USCGS BC
BM 2 1924	1,612,394.22	2,486,513.28	14.51	3.5" STANDARD DOMED USCGS BC
PAH-1 1999	1,610,524.35	2,485,989.34	42.30	3.25" DOMED STAMPED BC
PAH-2 1999	1,612,307.70	2,485,462.91	12.00	3.25" DOMED STAMPED BC
PAH-4 2005	1,611,303.33	2,485,528.09	16.90	3" DOMED STAMPED BC
PT 303	1,611,174.74	2,486,213.31	18.57	DRILL HOLE IN BEDROCK

NAVIGATION AIDS			
USCG NO.	NORTHING	EASTING	DESCRIPTION
23465	1,610,507	2,485,995	PORT ALEXANDER LIGHT
23470	1,610,759	2,486,266	ENTRANCE BUOY 2
23475	1,612,295	2,485,491	RANGE FRONT LIGHT
23480	1,612,494	2,485,397	RANGE REAR LIGHT

PROJECT LIMITS		
CORNER#	NORTHING	EASTING
1	1,610,507.00	2,486,245.00
2	1,610,573.00	2,486,380.00

PROJECT LIMITS		
CORNER#	NORTHING	EASTING
3	1,611,126.00	2,485,939.00
4	1,611,192.00	2,486,074.00

VOLUME COMPUTATIONS		
AREA A: OUTER CHANNEL	MLLW=0	CU. YD.
AVAILABLE TO PROJECT DEPTH (PD)	-15.0	219
AVAILABLE TO MAX PAY DEPTH (MP)	-16.0	268
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	218
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)		486



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

David R. Neff C.H. (275)

US Army Corps of Engineers - ALASKA DISTRICT

CONTRACT NO. W11054-14-0013
 CONTRACTOR: ETAC INC.
 CITY: WASILLA, STATE: ALASKA
 APPROVED BY: [Signature] DATE: 03/31/2016
 DRAWN BY: [Signature] DATE: 03/31/2016

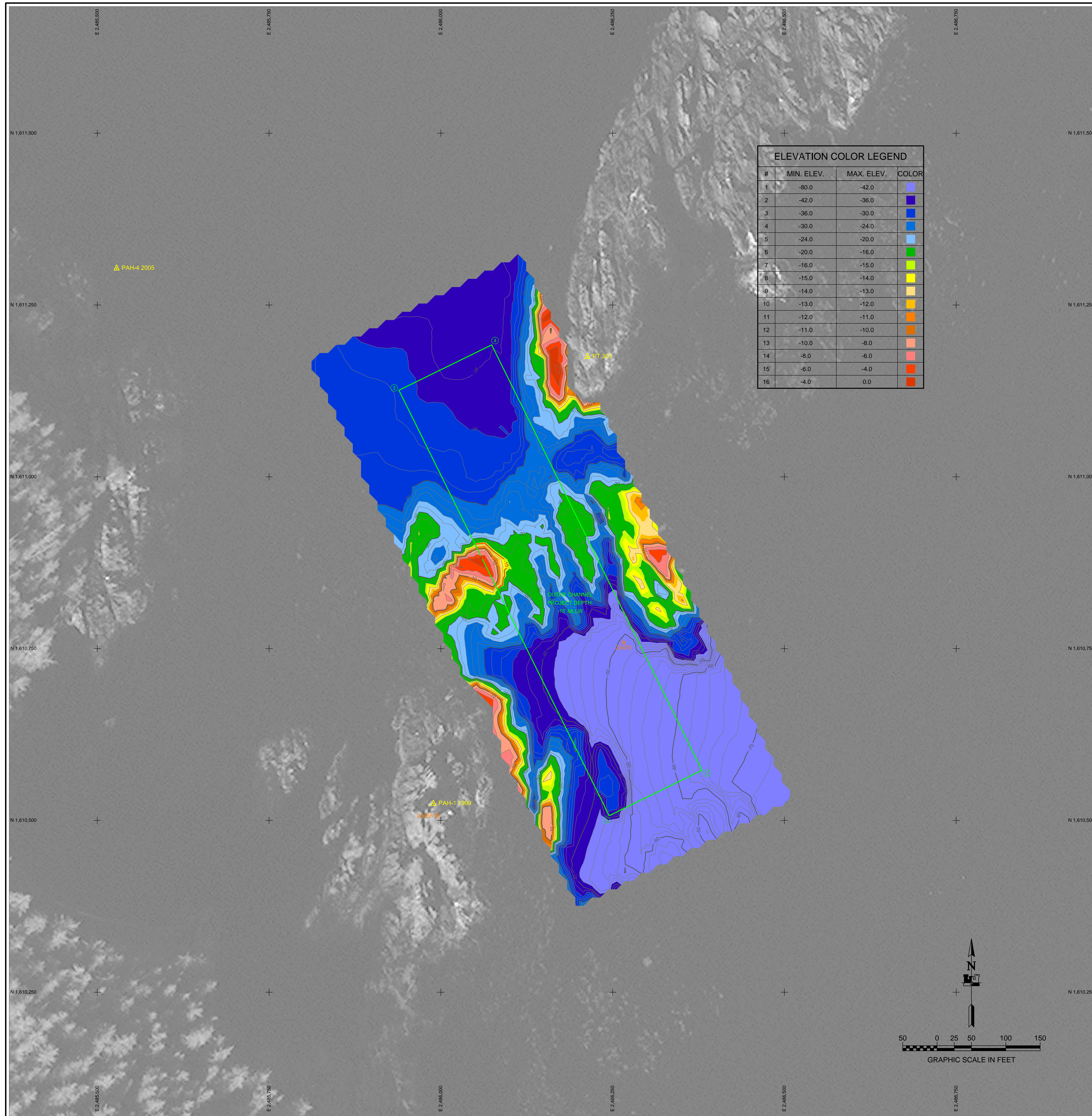
REVISION	DATE	DESCRIPTION	BY	APPROVED

DATE: 16 June 2016
 DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]
 SCALE: 1" = 20'
 FILE NAME: 03/31/2016
 ANGLE: 0/270/90/0/0

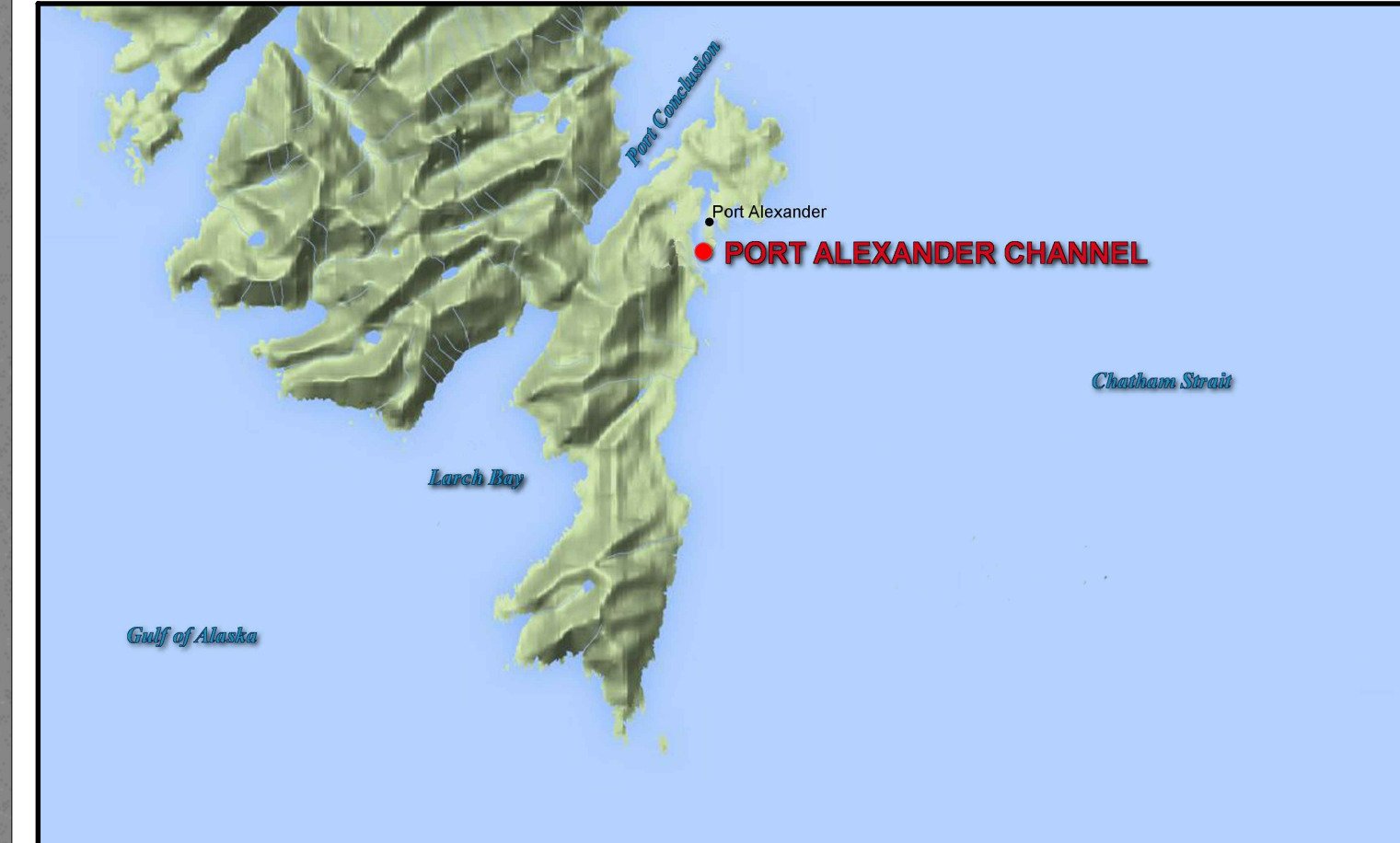
U.S. ARMY CORPS OF ENGINEERS
 ALASKA DISTRICT
 P.O. BOX 6908
 JBER, ALASKA 99506-8908
 eTAC, INC.
 617 S. Kink-Groene Bay Rd, Suite C
 Wasilla, AK 99684

PORT ALEXANDER, ALASKA
PORT ALEXANDER OUTER CHANNEL
PROJECT CONDITION SURVEY
 03/31-04/02/2016 & 05/21/2016

SHEET IDENTIFICATION
 1-PAL-92-07-01
 Sheet 1 of 2



ELEVATION COLOR LEGEND			
#	MIN. ELEV.	MAX. ELEV.	COLOR
1	-80.0	-42.0	Dark Blue
2	-42.0	-36.0	Blue
3	-36.0	-30.0	Light Blue
4	-30.0	-24.0	Light Blue
5	-24.0	-20.0	Light Blue
6	-20.0	-16.0	Light Green
7	-16.0	-15.0	Light Green
8	-15.0	-14.0	Light Green
9	-14.0	-13.0	Light Green
10	-13.0	-12.0	Light Green
11	-12.0	-11.0	Light Green
12	-11.0	-10.0	Light Green
13	-10.0	-8.0	Light Green
14	-8.0	-6.0	Light Green
15	-6.0	-4.0	Light Green
16	-4.0	0.0	Light Green



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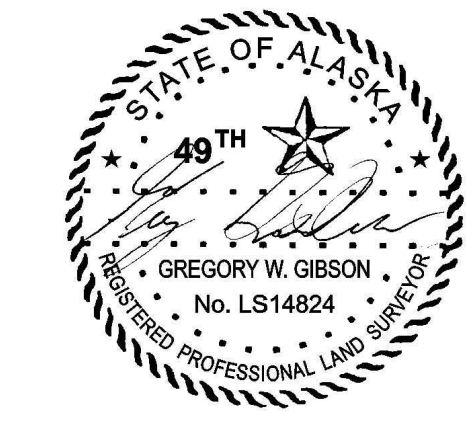
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David R. Neff
David R. Neff C.H. (275)

US Army Corps of Engineers - ALASKA DISTRICT

CONTRACT NO. W11054-14-0013
 CONTRACTOR: ETAC INC.
 CITY: WASILLA
 STATE: ALASKA
 PROJECT: PORT ALEXANDER OUTER CHANNEL SURVEY
 SHEET: 1-PAL-92-07-01

DATE: 16 June 2016
 DESIGNED BY: Gregory W. Gibson
 CHECKED BY: Gregory W. Gibson
 APPROVED BY: Gregory W. Gibson
 SCALE: 1" = 20'
 FILE NAME: 03/31-04/02/2016
 ANGLE: 0.00

**PORT ALEXANDER, ALASKA
 PORT ALEXANDER OUTER CHANNEL
 PROJECT CONDITION SURVEY
 03/31-04/02/2016 & 05/21/2016**

SHEET IDENTIFICATION
 1-PAL-92-07-01
 Sheet 2 of 2