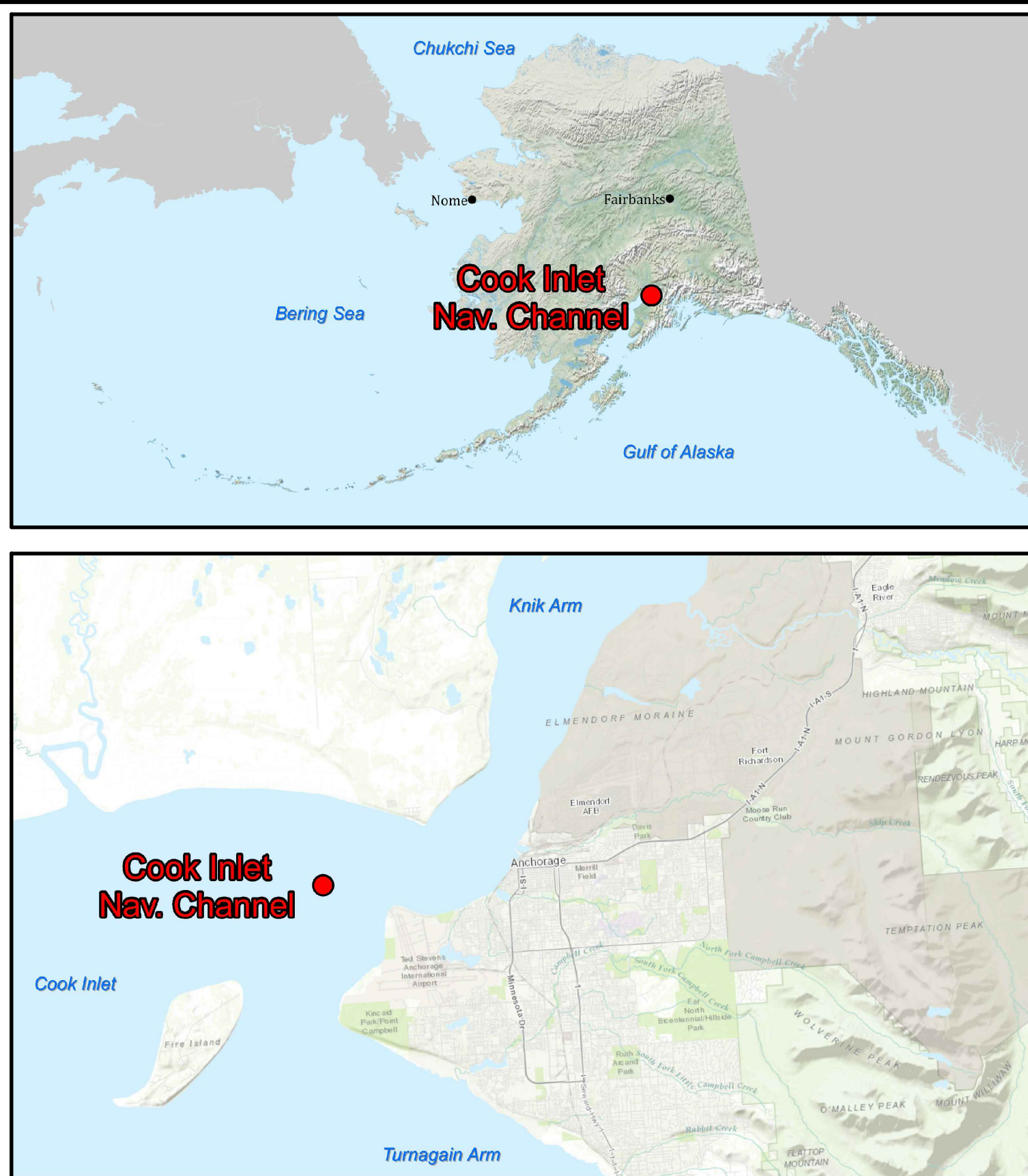


VOLUME COMPUTATIONS		
DREDGE AREA C	MLLW=0	CU. YD.
VOLUME AVAILABLE ABOVE	-38.0	530
VOLUME AVAILABLE ABOVE	-40.0	2,467
VOLUME AVAILABLE ABOVE	-43.0	65,860
DISPOSAL AREA		
VOLUME AVAILABLE BELOW	-45.0	1,505,605
TOTAL MAXIMUM VOLUME AVAILABLE IN AREA C (ABOVE -43.0)		65,860

ELEVATION COLOR LEGEND			
#	MIN. ELEV.	MAX. ELEV.	COLOR
1	-95.0	-75.0	
2	-75.0	-65.0	
3	-65.0	-55.0	
4	-55.0	-45.0	
5	-45.0	-44.0	
6	-44.0	-43.0	
7	-43.0	-42.0	
8	-42.0	-41.0	
9	-41.0	-40.0	
10	-40.0	-39.0	
11	-39.0	-38.0	
12	-38.0	-37.0	
13	-37.0	-36.0	
14	-36.0	-35.0	
15	-35.0	-30.0	
16	-30.0	-20.0	
17	-20.0	0.0	



- NOTES
1. PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83, NAD11 EPOCH 2010.00. IN US SURVEY FEET BASED ON A FULLY CONSTRAINED STATIC GPS NETWORK HOLDING THE PUBLISHED NGS STATIONS "VAN DUSEN" (PID T14678) AND "LOOP 2 RM 3" (PID UV446) AND INCLUDED NGS CORS STATIONS "ANC2" (PID DL6498), "TBN" (PID DL4055), "TSEA" (PID AID892), AND "ZAN1" (PID DE9153).
 2. LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83, IN US SURVEY FEET HOLDING USACE "TERRA 11" AS N 2,644,969.84, E 1,660,159.24.
 3. VERTICAL CONTROL IS A TILTED-PLANE MLLW DATUM DERIVED IN 2013 AND BASED ON THE NOAA/NOS TIDAL BENCH MARK LISTS "9455920, ANCHORAGE, KNIK ARM, COOK INLET, ALASKA" PUBLISHED 10/24/2011, "9455912, FIRE ISLAND, ALASKA" PUBLISHED 05/21/2014, AND "9455934, PORT MACKENZIE, COOK INLET, ALASKA" PUBLISHED 05/23/2003. THIS TILTED-PLANE MLLW IS BASED ON THE 1983-2001 TIDAL EPOCH AT THOSE STATIONS AND IS REFERENCED BY HOLDING GPS CONTROL STATION "TERRA 11" (PID BBCT04) AS 85.48 FT.
 4. VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 (GEOID 12B) ELEVATIONS HOLDING "TIDAL 16" (PID TT0713VMH1335) AS 29.73 FT.
 5. SOUNDINGS ARE IN U.S. SURVEY FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
 6. BATHYMETRY WAS COLLECTED MAY 12, 2020, BY ETRAC INC. SOUNDINGS WERE COLLECTED USING AN R2SONIC 2024 MULTIBeam ECHOSOUNDER OPERATING AT 200 KHZ WITH A 120-DEGREE SWATH-WIDTH WITH A 1.0' BEAM-WIDTH. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED USING AN AML BASE X SVP. SOUND VELOCITY WAS ALSO MEASURED AT THE SOUNDER HEAD USING A VALEPORT MINISVP. POSITIONING, VESSEL ATTITUDE, AND RTK TIDES WERE PROVIDED IN REAL TIME USING AN APPLIX POSMV MV US WAVEMASTER POSITIONING SYSTEM RECEIVING RTK CORRECTS FROM A TRIMBLE SP855 RECEIVER SET AT CONTROL STATION "TERRA 11" LOCATED ATOP THE PORT OFFICE BUILDING. POST-PROCESS KINEMATIC CORRECTION USING POSPAC MMS 8.2 SOFTWARE WERE APPLIED TO DATA FOLLOWING ACQUISITION. VESSEL NAVIGATION, DATA ACQUISITION AND PROCESSING WERE PERFORMED USING GPS INTEGRATED SOFTWARE.
 7. THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
 8. MAP SOUNDINGS ARE BINNED AT 48 FEET (SHOAL-BIASED). COLOR ELEVATIONS ARE BINNED AT 12 FEET (SHOAL-BIASED). VOLUME SOUNDINGS ARE BINNED AT 3 FEET (MEAN VALUE).

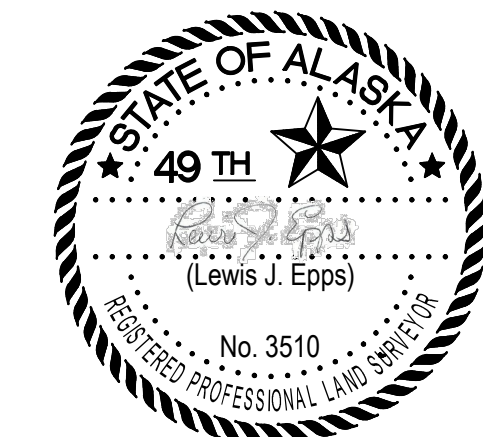
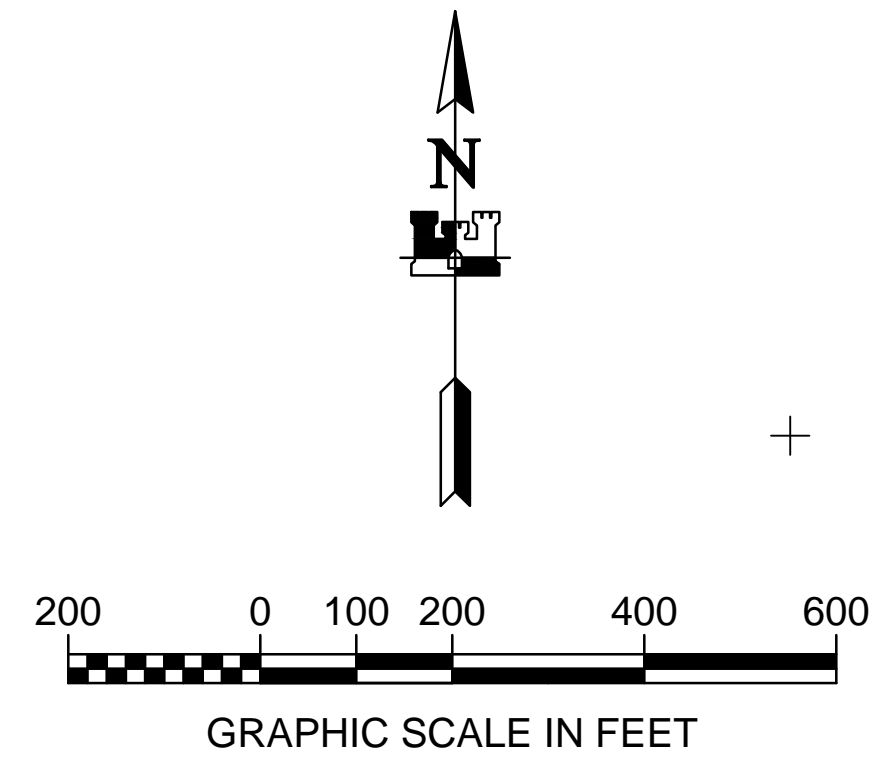
SURVEY CONTROL DATA				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
5920 THERMO 1 1988	2,642,784.70	1,660,183.87	37.3	AL MON (DISTURBED)
BM 12 1974	2,620,563.82	1,604,566.35	27.63	BRASS CAP
BM 5934 F	2,655,203.73	1,655,049.51	36.48	BRASS CAP
CRAIG	2,642,635.95	1,661,029.47	44.73	BRASS CAP
ETRAC-1	2,646,395.57	1,660,814.72	38.22	BRASS CAP
ETRAC-2	2,644,443.04	1,660,120.66	36.31	BRASS CAP
MIKE	2,645,987.73	1,661,875.48	48.38	BRASS CAP
NORTH END	2,646,649.84	1,660,584.80	41.51	USACE SBC
PORT 1989	2,639,934.29	1,656,925.43	39.64	AL MON
PORT MAC	2,655,563.46	1,654,968.22	41.51	BRASS CAP
RIFE 1960	2,620,502.19	1,604,162.70	29.99	BRASS CAP
SOUTH END	2,644,296.27	1,659,728.03	40.57	USACE SBC
TERRA 11 ARP	2,644,969.84	1,660,159.24	80.48	GPS ANTENNA REFERENCE POINT
TERRA 12 ARP	2,644,990.65	1,660,166.56	81.21	GPS ANTENNA REFERENCE POINT

DREDGE LIMITS		
CORNER#	NORTHING	EASTING
DL-28	2,632,288.21	1,628,921.02
DL-29	2,633,360.88	1,628,352.82
DL-30	2,628,708.65	1,619,570.25
DL-31	2,627,635.79	1,620,138.09
DS-5	2,626,323.49	1,614,048.61

DREDGE LIMITS		
CORNER#	NORTHING	EASTING
DS-6	2,626,323.49	1,616,673.28
DS-7	2,624,354.99	1,616,673.28
DS-8	2,624,354.99	1,614,619.08
DS-9	2,624,587.68	1,614,048.61

SURVEY LIMITS		
CORNER#	NORTHING	EASTING
SL-20	2,628,562.99	1,619,081.63
SL-21	2,627,313.36	1,619,743.03
SL-22	2,632,899.16	1,630,288.87
SL-23	2,634,148.83	1,629,627.56

SURVEY LIMITS		
CORNER#	NORTHING	EASTING
SL-24	2,626,423.49	1,613,948.61
SL-25	2,624,254.99	1,613,948.61
SL-26	2,624,254.99	1,616,773.28
SL-27	2,626,423.49	1,616,773.28



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

David R. Neff C.H. (275)

US Army Corps of Engineers
ALASKA DISTRICT

CONTRACT NO. W111131-1-0000
CONTRACTOR: MANSQU CONSTRUCTION CO.
CITY: SEATTLE
APPROVED: [Signature]
DATE: 10/12/2020

DATE: 10 May 2020
DESIGNED BY: J. J. JENSEN
CHECKED BY: J. J. JENSEN
APPROVED BY: J. J. JENSEN
SCALE: 1" = 200'
FILE NAME: PRE_20200512_CINC_FINAL.DWG
JOB NO: 20200512_CINC

ANCHORAGE, ALASKA
2018-2020 MAINTENANCE DREDGING, COOK INLET
HYDROGRAPHIC SURVEY
PRE_20200512_CINC

SHEET IDENTIFICATION
V-101
Sheet 6 of 6