

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



- NOTES**
- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 NAD2011 EPOCH 2010.00, IN US SURVEY FEET BASED ON A FULLY CONSTRAINED STATIC GPS NETWORK HOLDING THE PUBLISHED NGS STATIONS "VAN DUSEN" (PID TT14676) AND "LOOP 2 RM 3" (PID UV446) AND INCLUDED NGS CORS STATIONS "ANC2" (PID DL6498), "TBCN" (PID DK4055), "TSEA" (PID AI0952), AND "ZAN1" (PID DE9153).
 - 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.
 - VERTICAL CONTROL IS A TILTED-PLANE MLLW DATUM DERIVED IN 2013 AND BASED ON THE NOAA/NS TIDAL BENCH MARK LISTS "9455920, ANCHORAGE, KNIK ARM, COOK INLET, ALASKA" PUBLISHED 10/24/2011, "9455910, FIRE ISLAND, ALASKA" PUBLISHED 05/21/2004, 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 BDC04) AS 80.48 FT.
 - VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 (GEOID 128) ELEVATIONS HOLDING "TIDAL 16" (PID T0713)/VBM(335) AS 29.79 FT.
 - SOUNDINGS ARE IN U.S. SURVEY FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
 - BATHYMETRY WAS COLLECTED MAY 12, 2020, BY ETAC INC. SOUNDINGS WERE COLLECTED USING AN RSONIC 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 MINIVS. POSITIONING, VESSEL ATTITUDE, AND RTK TIDES WERE PROVIDED IN REAL TIME USING AN APRILANK POSNAV NAV V5 WAVEMASTER POSITIONING SYSTEM RECEIVING RTK CORRECTS FROM A TRIMBLE SP885S 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.
 - THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
 - 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
ETAC-1	2,646,395.57	1,660,814.72	38.22	BRASS CAP
ETAC-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			DREDGE LIMITS		
CORNER#	NORTHING	EASTING	CORNER#	NORTHING	EASTING
DL-28	2,632,288.21	1,628,921.02	DS-6	2,626,323.49	1,616,673.28
DL-29	2,633,360.88	1,628,352.82	DS-7	2,624,354.99	1,616,673.28
DL-30	2,628,708.65	1,619,570.25	DS-8	2,624,354.99	1,614,619.08
DL-31	2,627,635.79	1,620,138.09	DS-9	2,624,587.68	1,614,048.61
DS-5	2,626,323.49	1,614,048.61			

SURVEY LIMITS			SURVEY LIMITS		
CORNER#	NORTHING	EASTING	CORNER#	NORTHING	EASTING
SL-20	2,628,562.99	1,619,081.63	SL-24	2,626,423.49	1,613,948.61
SL-21	2,627,313.36	1,619,743.03	SL-25	2,624,254.99	1,613,948.61
SL-22	2,632,899.16	1,630,288.87	SL-26	2,624,254.99	1,616,773.28
SL-23	2,634,148.83	1,629,627.56	SL-27	2,626,423.49	1,616,773.28

STATE OF ALASKA
49TH
Lewis J. Epp
No. 3510
PROFESSIONAL SURVEYOR

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

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

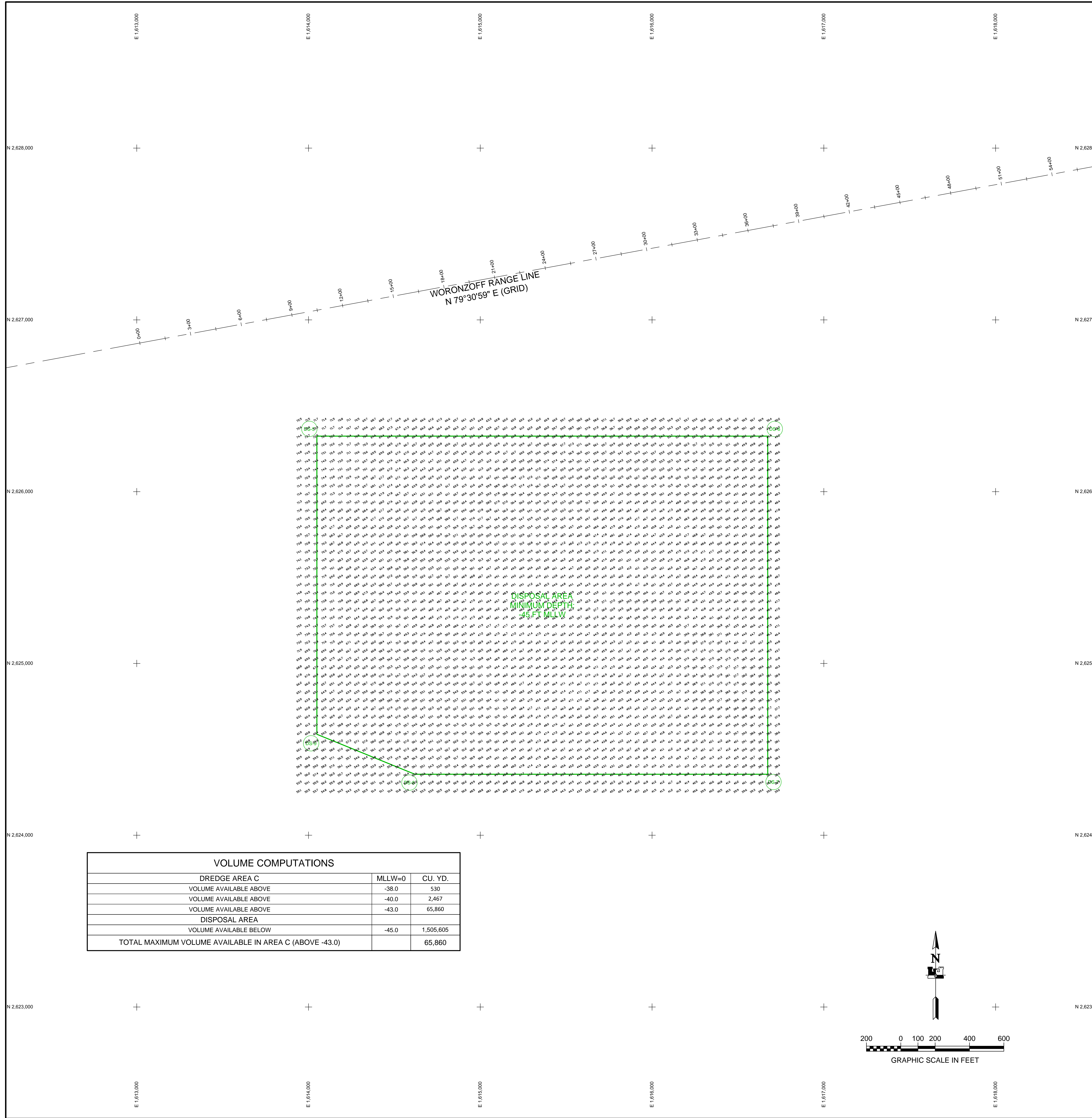
US Army Corps of Engineers
ALASKA DISTRICT

CONTRACT NO. W16HLE-C-0004
CONTRACTOR: MARSH CONSTRUCTION CO.
CITY: SEATTLE
STATE: WASHINGTON
APPROVED: [Signature]

DATE: 05/15/2020
BY: [Signature]

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

SHEET IDENTIFICATION
V-101
Sheet 1 of 6



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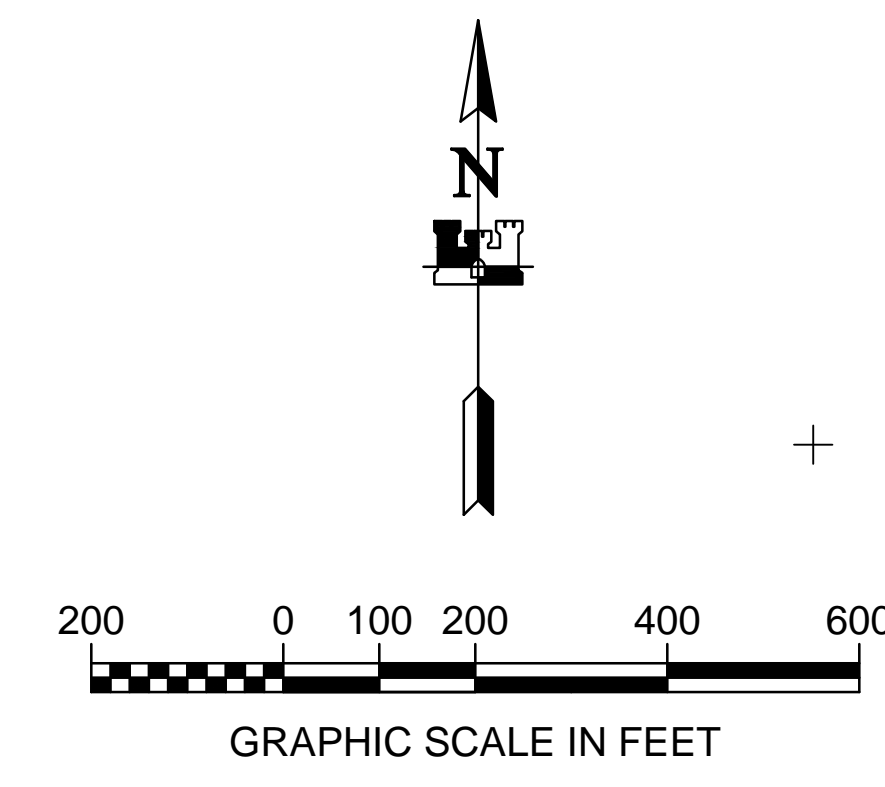



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 - VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 (GEOID 12B) ELEVATIONS HOLDING "TIDAL 16" (PID T10713/VMH/1335) AS 29.73 FT.
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SL-23	2,634,148.83	1,629,627.56	SL-27	2,626,423.49	1,616,773.28





49th
Lewis J. Eppa
No. 3510
1996

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

David R. Neff

David R. Neff C.H. (275)

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

SHEET IDENTIFICATION
V-101
Sheet 3 of 6

US Army Corps of Engineers - ALASKA DISTRICT

CONTRACT NO. W110118-C-0001
CONTRACTOR: MANSOUR CONSTRUCTION CO.
CITY: SEATTLE, STATE: WASHINGTON
APPROVED: [Signature] DATE: [Date]

NO.	DESCRIPTION	DATE	BY

DATE: 19 May 2020
DRAWN BY: JAW/BB
CHECKED BY: JAW/BB
PROVIDED BY: JAW/BB
SCALE: 1" = 200'
FILE: 200512_CINC_FINAL.DWG
PLOT DATE: 01/30/2021 11:30 AM
SURVEY NO.: 302520
CONTRACT NO.: W110118-C-0001