

DREDGE LIMITS CURVE DATA (FT)

CURVE	RADIUS	ARC LENGTH	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C???	125.02	202.40	92°45'31"	N00°04'18"W	181.01
C???	75.00	123.38	94°15'21"	N00°40'26"E	109.93
C1	125.02	202.40	92°45'31"	N00°04'18"W	181.01
C2	75.00	123.38	94°15'21"	N00°40'26"E	109.93

ALIGNMENT DATA (FT)

NUMBER	LENGTH	LINE/CHORD BEARING	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD LENGTH
L1	491.35	N40° 39' 57"E	-----	-----	-----	-----
C3	-----	N44° 15' 53.00"E	25.13	200.00	7°11'52"	25.11
C4	-----	N00° 42' 17.31"E	164.62	100.00	94°19'04"	146.65
L2	76.04	N47° 51' 49"E	-----	-----	-----	-----
L3	622.68	N46° 27' 15"W	-----	-----	-----	-----

OBSTRUCTION DATA

ID	NORTHING	EASTING	DEPTH
OBST-1	2,215,340.7	1,336,102.8	-5.0
OBST-2	2,215,310.4	1,336,077.7	-4.0
OBST-3	2,215,250.2	1,336,024.2	-4.5
OBST-4	2,215,125.9	1,335,917.9	-3.4



NOTES

- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83, IN US SURVEY FEET BASED ON A FULLY CONSTRAINED STATIC GPS NETWORK HOLDING THE PUBLISHED NAD83 (CORS) 2010.00 EPOCH VALUES OF NGS CORS STATIONS: "SOLDOTNA_AK2007 CORS ARP" (AC23 - PID DM7487), "DRIFTRIVERAK2006 CORS ARP" (AC17 - PID DM7481) AND "SEALROCKSAK2007 CORS ARP" (AC43 - PID DM7496).
- LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83, IN US SURVEY FEET HOLDING BRASS CAP SET IN ARMOR STONE "NINIL-2" AS N 2,215,653.51, E 1,336,081.03.
- VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0) U.S. SURVEY FEET, BASED ON THE NOAA/NOS TIDAL BENCH MARK LIST "945 5653 NINILCHIK, ALASKA" PUBLISHED 07/14/2014. THIS TIDAL DATUM IS BASED ON THE 2007-2011 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/NOS TIDAL BENCH MARK "5653 F 2011" (PID BBMS2VM20900) AS 29.50' AND NOAA/NOS TIDAL BENCH MARK "945 5653 E" (VM14160) AS 30.62'.
- VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 (GEOID12A) ELEVATIONS HOLDING NOAA/USACE TIDAL BENCHMARK "5653 F 2011" (PID BBMS2VM20900) AS 23.27'.
- SOUNDINGS ARE IN U.S. SURVEY FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED MAY 12, 2017. SOUNDINGS WERE COLLECTED USING AN RZSONIC 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 APPLAN POSMV WAVE MASTER SYSTEM. DATA WAS COLLECTED AND PROCESSED USING HYPACK 2017 SOFTWARE. HORIZONTAL CONTROL AND VERTICAL CONTROL WAS VERIFIED DURING THE PRE SURVEY.
- THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
- MAP SOUNDINGS ARE BINNED AT 15 FEET AND ARE SHOAL-BIASED. CONTOURS ARE BASED ON 3 FEET BINNED SHOAL-BIASED SOUNDINGS. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE MEAN VALUE SOUNDINGS.

SURVEY CONTROL DATA

STATION	NORTHING	EASTING	MLLW	DESCRIPTION
9455653 E	2,215,592.06	1,336,145.04	30.62	METAL ROD IN BW ROCK
9455653 F	2,214,548.53	1,335,413.68	29.50	METAL ROD IN GROUND
9455653 G	2,214,391.12	1,335,295.69	29.78	METAL ROD IN GROUND
DL	2,215,518.12	1,336,349.90	25.38	ALUMINUM CAP
NINIL-2	2,215,653.51	1,336,081.03	29.53	USACE SBC

PROJECT LIMITS

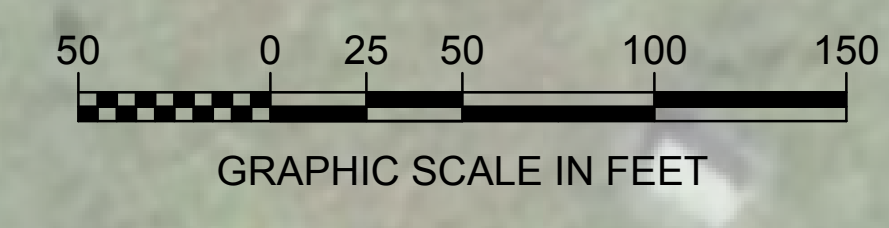
CORNER#	NORTHING	EASTING	CORNER#	NORTHING	EASTING
1	2,215,380.30	1,336,164.37	8	2,215,407.15	1,336,268.37
2	2,215,425.79	1,336,111.41	9	2,215,588.16	1,336,268.15
3	2,215,123.35	1,335,851.63	10	2,216,017.64	1,335,816.29
4	2,215,058.05	1,335,927.64	11	2,215,980.40	1,335,782.90
5	2,215,045.59	1,335,954.77	12	2,215,551.92	1,336,233.70
6	2,215,074.98	1,335,968.27	13	2,215,442.00	1,336,232.41
7	2,215,347.60	1,336,202.44			

NAVIGATION AIDS

USCG NO.	NORTHING	EASTING	DESCRIPTION
26255	2,215,714	1,336,165	CHANNEL ENTRANCE LIGHT
26260	2,215,636	1,336,257	ROCK SILL NORTH DAYBEACON
26265	2,215,696	1,336,042	ROCK SILL SOUTH DAYBEACON

VOLUME COMPUTATIONS

AREA	REMOVED TO PROJECT DEPTH (PD)	MLLW=0	CU. YD.
AREA A: BASIN	REMOVED TO PROJECT DEPTH (PD)	+3.3	4,858
	REMOVED TO MAX PAY DEPTH (MP)	+2.3	6,165
	REMOVED SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	831
	REMOVED OVERDREDGE BLOW MAX PAY DEPTH (MP)	+2.3	276
AREA B: ENTRANCE CHANNEL	REMOVED TO PROJECT DEPTH	+9.3	1,619
	REMOVED TO MAX PAY DEPTH (MP)	+8.3	2,431
	REMOVED SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VAIRES	739
	REMOVED OVERDREDGE BELOW MAX PAY DEPTH (MP)	+8.3	231
TOTAL MAXIMUM VOLUME REMOVED (MP)			10,166



THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACM/THOSSA CERTIFIED HYDROGRAPHER
 Cory S. Hughes
 CORY S. HUGHES C.H. (245)

US Army Corps of Engineers - ALASKA DISTRICT

CONTRACT NO. W15L137C009
 CONTRACTOR: ALASKA MARINE ELEVATION
 CITY: ANCHORAGE
 STATE: ALASKA
 APPROVED: [Signature]
 DATE: 05/09/2017

DATE: August 14, 2017
 DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]
 SCALE: 1" = 50'
 FILE NAME: 2017 NINILCHIK POST-DREDGE 01701E.FINAL.DWG

NINILCHIK, ALASKA
NINILCHIK SMALL BOAT HARBOR
POST DREDGE SURVEY
MAY 04, 12, & 13, 2017

SHEET IDENTIFICATION
 2-NIN-92-07-50
 Sheet 1 of 2