

DREDGE LIMITS CURVE DATA (FT)

CURVE	RADIUS	ARC LENGTH	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
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	-----	-----	-----	-----



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 (GCRS) 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 BBCM32/VM#200900) AS 29.50' AND NOAA/NOS TIDAL BENCH MARK "945 5653 E" (VM#14160) 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 BBCM32/VM#200900) AS 23.27'.
- SOUNDINGS ARE IN U.S. SURVEY FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED MAY 2 - 4, 2017. SOUNDINGS WERE COLLECTED USING AN R2SONIC 2022 MULTIBeam ECHOSOUNDER OPERATING AT 400 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 WAVE MASTER SYSTEM. DATA WAS COLLECTED AND PROCESSED USING HYPPACK 2017 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING RTK GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING DIFFERENTIAL LEVELING TECHNIQUES.
- 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 AVERAGE 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	2,214,391.31	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
1	2,215,380.30	1,336,164.37
2	2,215,425.79	1,336,111.41
3	2,215,123.35	1,335,851.63
4	2,215,058.05	1,335,927.64
5	2,215,045.59	1,335,954.77
6	2,215,074.98	1,335,968.27
7	2,215,347.60	1,336,202.44

PROJECT LIMITS

CORNER#	NORTHING	EASTING
8	2,215,407.15	1,336,268.37
9	2,215,588.16	1,336,268.15
10	2,216,017.64	1,335,816.29
11	2,215,980.40	1,335,782.90
12	2,215,551.92	1,336,233.70
13	2,215,462.00	1,336,232.41

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 A: BASIN	MLLW=0	CU. YD.
AVAILABLE TO PROJECT DEPTH (PD)	+3.3	4,886
AVAILABLE TO MAX PAY DEPTH (MP)	+2.3	6,662
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	1,457
AREA B: ENTRANCE CHANNEL		
AVAILABLE TO PROJECT DEPTH	+9.3	1,754
AVAILABLE TO MAX PAY DEPTH (MP)	+8.3	2,960
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	3,402
TOTAL MAXIMUM VOLUME AVAILABLE (MP)		14,481



THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ASGM/THOSGA CERTIFIED HYDROGRAPHER
 Cory S. Hughes
 CORY S. HUGHES, CH. (245)

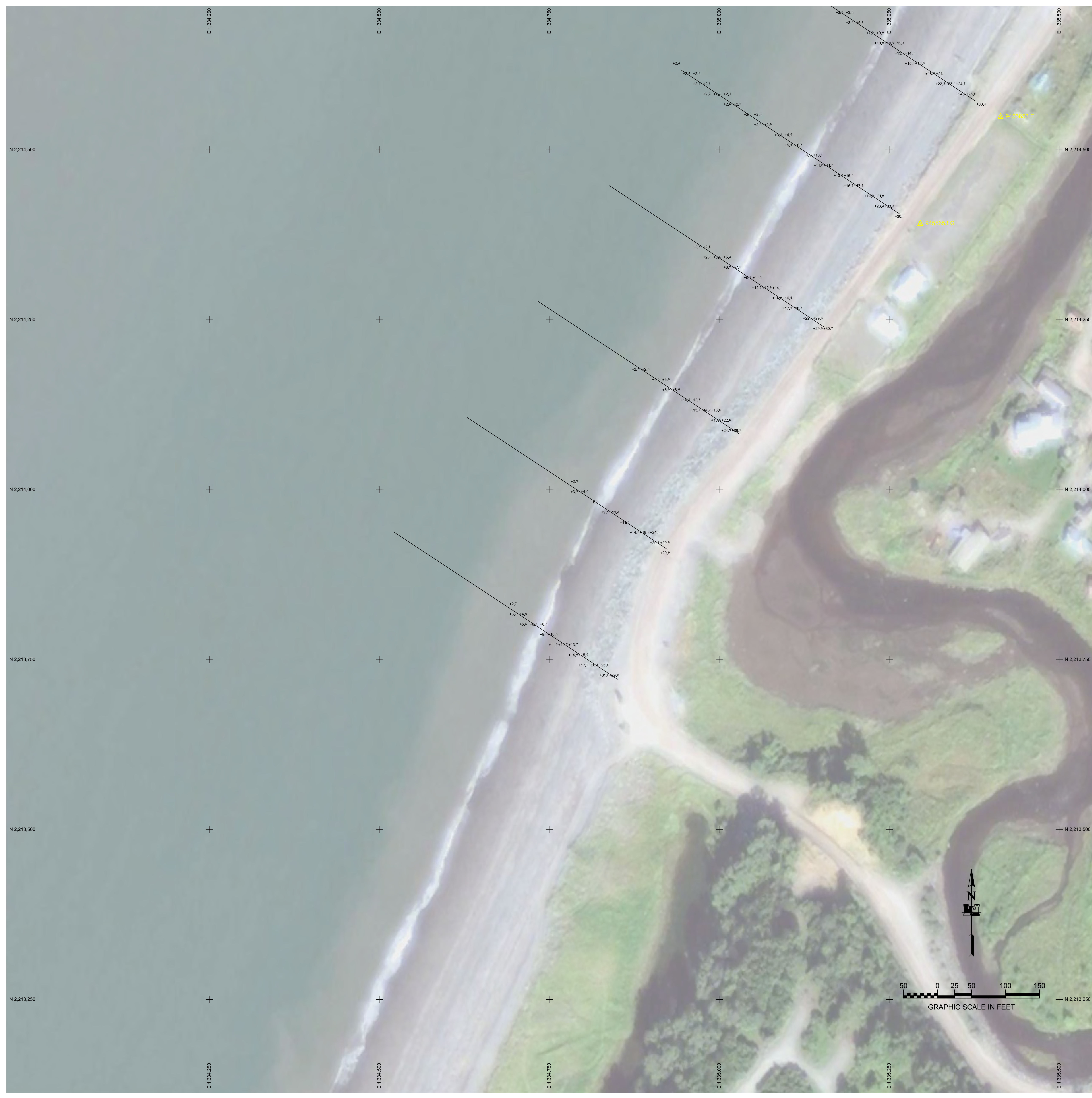
US Army Corps of Engineers - ALASKA DISTRICT

CONTRACT NO. W15L137C-0007
 CONTRACTOR: ALASKA MARINE EXCAVATION
 CITY: ANCHORAGE, ALASKA
 DRAWING NO.: 2-NIN-92-07-49
 SHEET NO.: 1 OF 2

DATE: MAY 15, 2017
 DESIGNED BY: JWB
 CHECKED BY: JWB
 APPROVED BY: JWB
 SCALE: 1" = 50'
 FILE NAME: 2-NIN-CH-PR-DRE-201702-FINAL.DWG

NINILCHIK, ALASKA
NINILCHIK SMALL BOAT HARBOR
PRE DREDGE SURVEY
MAY 02 - 04, 2017

SHEET IDENTIFICATION
 2-NIN-92-07-49
 Sheet 1 of 2



NOTES

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Cory Hughes
 CORY S. HUGHES C.H. (245)

CONTRACT NO. W1115017.C0007
 CONTRACTOR ALASKA MARINE EDUCATION
 CITY ANCHORAGE
 STATE ALASKA
 APPROVED: _____
 RECOMMENDED: _____
 DATE: _____

NO.	DESCRIPTION	DATE	BY	APPROVED

DATE: MAY 9, 2017
 DRAWN BY: JWB
 CHECKED BY: JWB
 APPROVED BY: JWB
 SCALE: 1" = 50'
 PLOT DATE: 05/09/2017
 FILE NAME: D:\17\NINILCHIK-PR-DREDDGE-201702\FINAL.DWG

U.S. ARMY CORPS OF ENGINEERS
 ALASKA DISTRICT
 P.O. BOX 6908
 JBER, ALASKA 99506-8908
 HUGHES & ASSOCIATES
 2970 COTTLE LOOP
 WASILLA, ALASKA 99684

NINILCHIK, ALASKA
NINILCHIK SMALL BOAT HARBOR
PRE DREDGE SURVEY
MAY 02 - 04, 2017

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 Sheet 2 of 2