





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), "

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 ON THE 2012-2016 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/NOS TIDAL BENCH MARK "5653 F 2011" (PID BBCM32/VM#20900) AS 29.49' AND NOAA/NOS TIDAL BENCH MARK "945 5653 E" (VM#14160) AS
- VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 (GEOID12A) ELEVATIONS HOLDING NOAA/USACE TIDAL BENCHMARK "5653 F 2011" (PID BBCM32/VM#20900)
- SOUNDINGS ARE IN U.S. SURVEY FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED MAY 2-3, 2019. SOUNDINGS WERE COLLECTED USING A CEESCOPE ECHO SOUNDER OPERATING AT 200 KHZ. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN AML BASE X2 SOUND VELOCITY PROBE. POSITION AND TIDES WERE PROVIDED IN REAL TIME USING A TRIMBLE R8 RTK GPS RECEIVER OPERATING ON KINEMATICS CORRECTIONS BROADCAST FROM A TRIMBLE R8 RTK BASE RECEIVER SET A CONTROL STATION, "NINIL-2". DATA WAS COLLECTED AND PROCESSED USING HYPACK 2019 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING RTK GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS VERIFIED DURING THE PRE SURVEY.
- THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
- MAP SOUNDINGS, CONTOURS, COLOR RELIEF, AND VOLUME COMPUTATIONS ARE BASED ON A 10 FOOT

	SURVEY CONTROL DATA					
STATION	NORTHING	EASTING	MLLW	DESCRIPTION		
9455653 E	2,215,592.06	1,336,145.04	30.61	METAL ROD IN BW ROCK		
9455653 F	2,214,548.53	1,335,413.68	29.49	METAL ROD IN GROUND		
9455653 G	2,214,391.31	1,335,295.69	29.77	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		

PRC	JECT LIN	/ITS	PRC)J
ORNER#	NORTHING	EASTING	CORNER#	N
1	2,215,380.30	1,336,164.37	8	2
2	2,215,425.79	1,336,111.41	9	2
3	2,215,123.35	1,335,851.63	10	2
4	2,215,058.05	1,335,927.64	11	2
5	2,215,045.59	1,335,954.77	12	2
6	2,215,074.98	1,335,968.27	13	2
7	2,215,347.60	1,336,202.44		

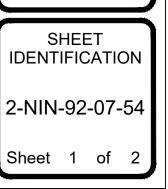
PROJECT LIMITS					
CORNER# NORTHING EASTING					
8	2,215,407.15	1,336,268.37			
9	2,215,588.16	1,336,268.15			
10	2,216,017.64	1,335,816.29			
11	2,215,980.40	1,335,782.90			
12	2,215,551.92	1,336,233.70			
13 2,215,442.00 1,336,232.41					

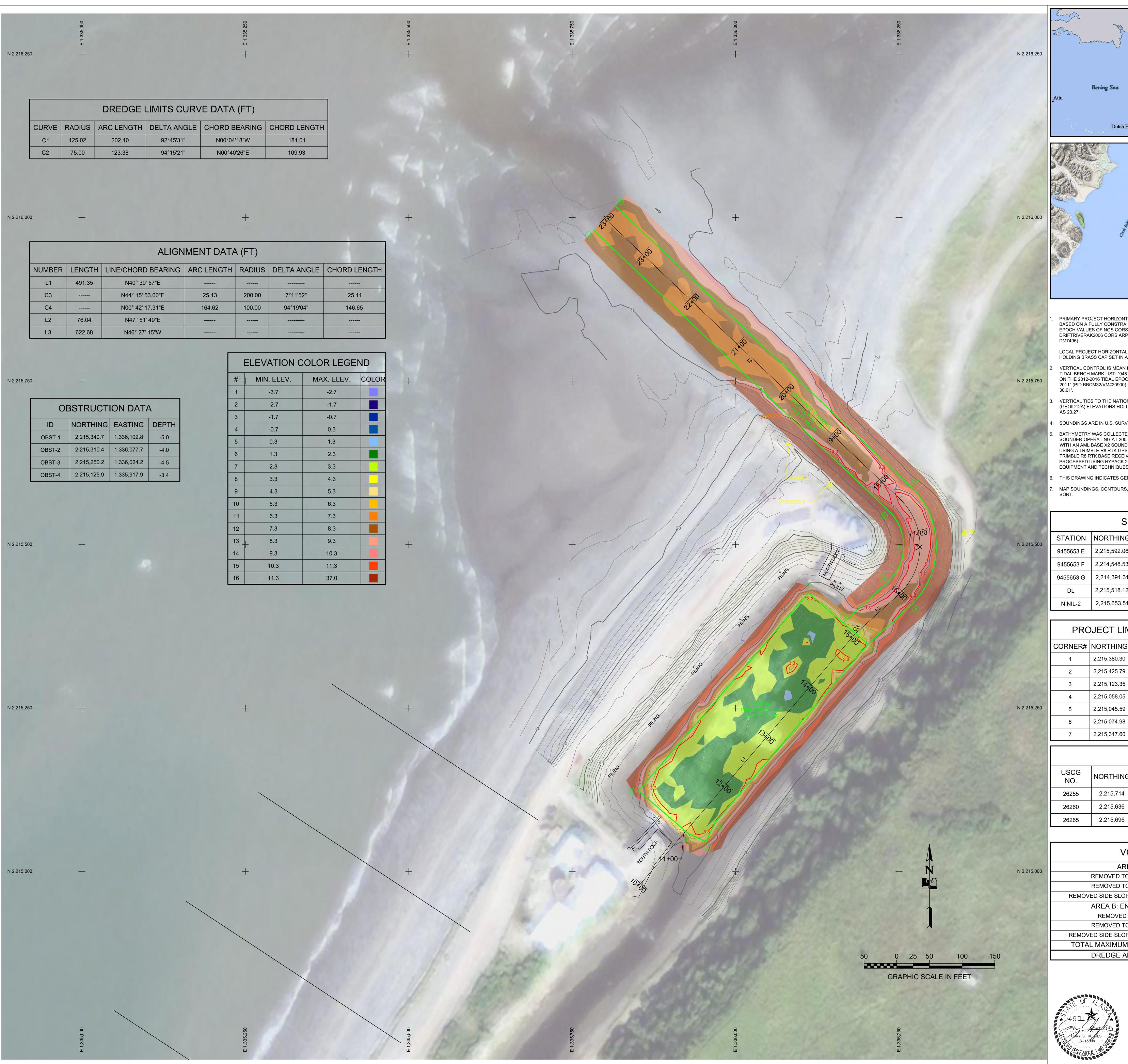
NAVIGATION AIDS					
USCG NO.	NORTHING	EASTING	DESCRIPTION		
26255	2,215,714	1,336,165	CHANNEL ENTRANCE LIGHT		
26260	2,215,636	1,336,257	ROCK SILL NORTH DAYBEACON		
26265	2,215,696	1,336,042	ROCK SILL SOUTH DAYBEACON		

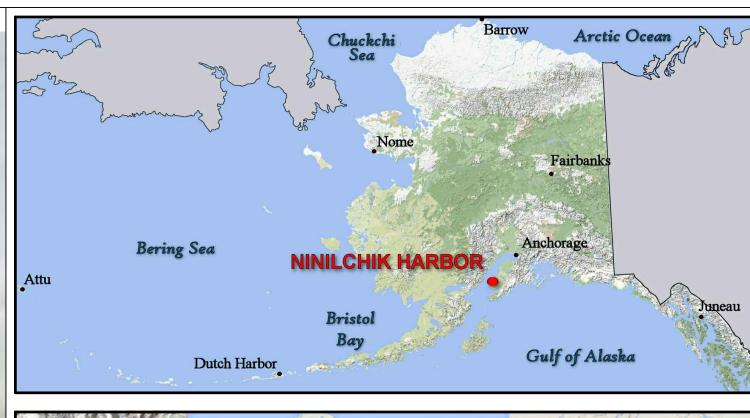
VOLUME COMPUTATIONS				
AREA A: BASIN	MLLW=0	CU. YD.		
REMOVED TO PROJECT DEPTH (PD)	+3.3	4,280		
REMOVED TO MAX PAY DEPTH (MP)	+2.3	5,609		
REMOVED SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	580		
AREA B: ENTRANCE CHANNEL				
REMOVED TO PROJECT DEPTH	+9.3	866		
REMOVED TO MAX PAY DEPTH (MP)	+8.3	1,762		
REMOVED SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VAIRES	567		
TOTAL MAXIMUM VOLUME REMOVED (MP)		8,518		
DREDGE AREA OVERDREDGE		1,228		



THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACSM/THOSOA CERTIFIED HYDROGRAPHER CORY S. HUGHES C.H. (245)







of Engineers ® ALASKA DISTRICT



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- 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 04/09/2018. THIS TIDAL DATUM IS BASED ON THE 2012-2016 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/NOS TIDAL BENCH MARK "5653 F 2011" (PID BBCM32/VM#20900) AS 29.49' AND NOAA/NOS TIDAL BENCH MARK "945 5653 E" (VM#14160) AS
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