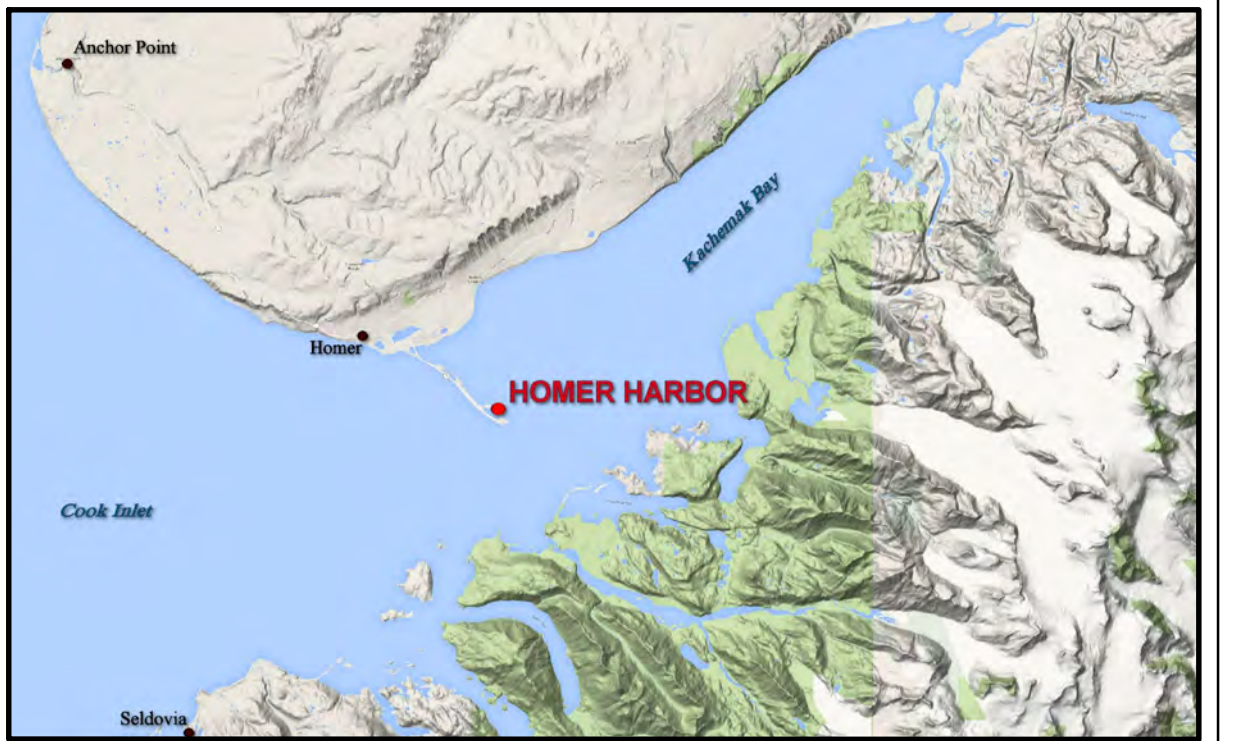


VOLUME COMPUTATIONS		
AREA A: OUTER ENTRANCE CHANNEL	MLLW (FT)	CU. YD.
AVAILABLE TO DREDGE DEPTH (PD)	-20.0	79
AVAILABLE BETWEEN PD AND MAX PAY DEPTH (MP)	-21.0	334
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	503
AREA B: USCG BASIN AREA		
AVAILABLE TO PD	-22 TO -26	336
AVAILABLE BETWEEN PD AND MP	-23 TO -27	292
AVAILABLE SS	VARIES	1,243
AREA C: INNER CHANNEL AREA		
AVAILABLE TO PD	-20.0	1028
AVAILABLE BETWEEN PD AND MP	-21.0	419
AVAILABLE SS	VARIES	3,610
AREA D: MANEUVERING AREA		
AVAILABLE TO PD	-20.0	235
AVAILABLE BETWEEN PD AND MP	-21.0	1,705
AVAILABLE SS	VARIES	18
AREA E: MANEUVERING AREA		
AVAILABLE TO PD	-15.0	176
AVAILABLE BETWEEN PD AND MP	-16.0	753
AVAILABLE SS	VARIES	64
AREA F: MANEUVERING AREA		
AVAILABLE TO PD	-10.0	9
AVAILABLE BETWEEN PD AND MP	-11.0	21
AVAILABLE SS	VARIES	0
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)	VARIES	10,825
DREDGED AREA OVERDREDGE (AREA A, B, & C)	VARIES	N/A
SIDE SLOPE AREA OVERDREDGE (AREA A, B, & C)	VARIES	N/A

NAVIGATION AIDS			
NO.	NORTHING	EASTING	DESCRIPTION
26210	2,049,940	1,378,351	HOMER BREAKWATER LIGHT 2
26216	2,049,932	1,378,484	SOUTH LIGHTED MOORING BUOY

PROJECT LIMITS		
CORNER#	NORTHING	EASTING
7	2,049,519.03	1,377,882.50
8	2,049,207.15	1,377,683.23
9	2,049,313.35	1,377,517.38
10	2,049,705.59	1,376,903.13
11	2,050,281.01	1,376,002.56
12	2,050,544.76	1,375,589.76
13	2,050,893.93	1,375,219.67
14	2,051,074.98	1,375,335.41
15	2,051,159.30	1,375,389.23
16	2,051,420.46	1,375,556.10
17	2,050,887.56	1,376,390.12
18	2,050,312.15	1,377,290.69
19	2,050,626.40	1,376,223.25
20	2,050,542.13	1,376,169.40
21	2,050,096.16	1,377,152.69
22	2,050,011.48	1,377,098.58
23	2,049,823.34	1,377,690.34
24	2,049,707.99	1,377,696.69
25	2,049,954.10	1,379,383.98
26	2,049,539.77	1,379,277.46
CG1	2,049,621.31	1,379,028.43
CG2	2,049,755.11	1,378,885.74
CG3	2,049,654.76	1,378,791.65

PROJECT LIMITS		
CORNER#	NORTHING	EASTING
CG4	2,049,481.24	1,378,801.18
CG5	2,049,433.37	1,378,852.25
CG6	2,049,385.49	1,378,903.32
CG7	2,049,396.89	1,378,818.05
CG8	2,049,526.07	1,378,748.64
CGSL1	2,049,462.64	1,378,660.05
CGSL2	2,049,661.29	1,378,766.24
CGSL3	2,049,787.62	1,378,884.70
CGSL4	2,049,465.36	1,379,228.34
PC1A	2,049,852.14	1,378,351.33
PC2A	2,049,766.26	1,378,304.02
PC3A	2,049,989.06	1,378,221.58
PC4A	2,049,947.63	1,378,141.68
PC6A	2,049,758.41	1,377,752.69
PL-32	2,050,341.61	1,376,668.97
PL-33	2,050,254.64	1,376,619.37
PRC3B/5A	2,050,041.53	1,377,932.63
PT1B	2,049,896.45	1,378,269.64
PT2B	2,049,855.01	1,378,189.75
PT4B	2,049,974.64	1,377,992.85
PT5B	2,050,025.58	1,377,739.19
PT6B	2,049,593.40	1,377,766.24
SL17	2,049,263.78	1,379,032.06



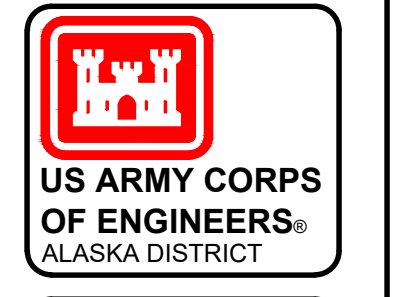
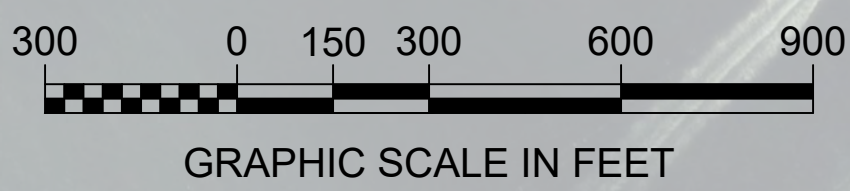
- ### NOTES
- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 IN US SURVEY FEET. THE BASIS OF COORDINATES IS USACE STATION "BOLL" HAVING A VALUE OF N 2,050,682.88 AND E 1,375,195.75, AND USACE STATION "HOMER BASIN 7" HAVING A VALUE OF N 2,049,712.22 AND E 1,377,964.36. POSITIONS FOR OTHER PROJECT CONTROL POINTS WERE DETERMINED BY A SIMULTANEOUS LEAST SQUARES NETWORK ADJUSTMENT OF DIFFERENTIAL STATIC GPS OBSERVATIONS.
 - LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 2003.00 EPOCH, IN US SURVEY FEET HOLDING "BL-2-A 1989" HAVING A VALUE OF N 2,049,793.81, E 1,378,015.52.
 - VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 (GEOID12B) ELEVATIONS HOLDING NOAA/USCGS TIDAL BENCHMARK "5558 C 2018" (PID BBGD31/VM#22931) AS 25.45 FT.
 - SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
 - BATHYMETRY WAS COLLECTED SEPTEMBER 1, 2020. 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 X2 SOUND VELOCITY PROBE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POS MV SYSTEM. RTK CORRECTIONS WERE BROADCAST FROM A LOCAL BASE STATION OCCUPYING HOMER "BL-2-A" POST PROCESSING KINEMATICS CORRECTIONS USING POSPAC MMS8.3 SOFTWARE WERE APPLIED TO DATA FOLLOWING ACQUISITION. DATA WAS COLLECTED AND PROCESSED USING HYPACK 2020 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING RTK GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING DIFFERENTIAL LEVELING TECHNIQUES ON A PREVIOUS SURVEY, USCG DREDGING, ON APRIL 21 2020.
 - THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
 - MAP SOUNDINGS, CONTOURS, AND COLOR RELIEF ARE BINNED AT 15 FEET AND ARE SHOAL-BIASED ON CELL CENTER. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE MEAN VALUE SOUNDINGS ON CELL CENTER.

SURVEY CONTROL DATA				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
5558 A 1979	2,048,838.03	1,378,995.42	26.61	3-1/2 IN. NOAA/NOS SBC
5558 C 2018	2,049,027.34	1,379,126.79	30.52	3-1/2 IN. NOAA/NOS SBC
AUDREY	2,051,507.88	1,375,406.63	33.1	REBAR
BL-2-A 1989	2,049,793.81	1,378,015.52	32.35	3-1/2 IN. USACE SBC
BOLL 1996	2,050,682.88	1,375,195.75	35.3	3-1/4 IN. SBC
HB-08 2009	2,050,150.84	1,377,830.77	31.7	3-1/4 AL. MON.
HB-09 2009	2,051,199.64	1,375,120.32	31.8	3-1/4 AL. MON.
HOMER BASIN 4 1965	2,050,038.14	1,378,340.12	31.1	3-1/2 IN. USACE SBC
HOMER BASIN 5 1965	2,049,943.24	1,378,345.59	30.6	3-1/2 IN. USACE SBC
HOMER BASIN 6 1965	2,049,887.27	1,378,073.96	31.0	3-1/2 IN. USACE SBC
HOMER BASIN 7 1965	2,049,712.22	1,377,964.36	31.31	3-1/2 IN. USACE SBC

THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACSMITHOSOA CERTIFIED HYDROGRAPHER

Cory S. Hughes

CORY S. HUGHES C.H. (245)

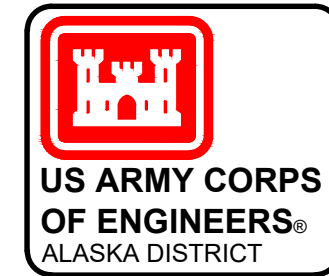


REV.	DATE	BY	APPR.	DESCRIPTION

CONTRACT NO.: W911K22C0003	TASK ORDER NO.:	JOB NO.:	CONTRACTOR: ALASKA MARINE EXCAVATION
UIC: HN2022	PLOT DATE: 09/23/2020	SCALE: 1" = 300'	STATE: ALASKA
SURVEYED BY: DCA & LMH	DRAWN BY: DCA	CHECKED BY: CSH	APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION
FILE: HOMER HARBOR DDCR PRE DREDGE_20200901.DWG	PROJECT HARBOR DDCR PRE DREDGE_20200901.DWG		

HOMER, ALASKA
HOMER HARBOR
 PRE-DREDGE SURVEY
 SEPTEMBER 1, 2020

REFERENCE NUMBER:
2-HOM-92-07-73
 SHEET 1 OF 6



REV.	DATE	BY	APPR.	DESCRIPTION

CONTRACT NO.:	W911K22C0003
TASK ORDER NO.:	
JOB NO.:	
CONTRACTOR:	ALASKA MARINE EXCAVATION
STATE:	ALASKA
ANCHOR POINT:	ANCHOR POINT, ALASKA
SURVEYED BY:	JPH/2022
DATE:	09/23/2020
DRAWN BY:	DCA
CHECKED BY:	CSH
SCALE:	1" = 50'
FILE:	HOMER HARBOR DREDGE (2020)000.DWG

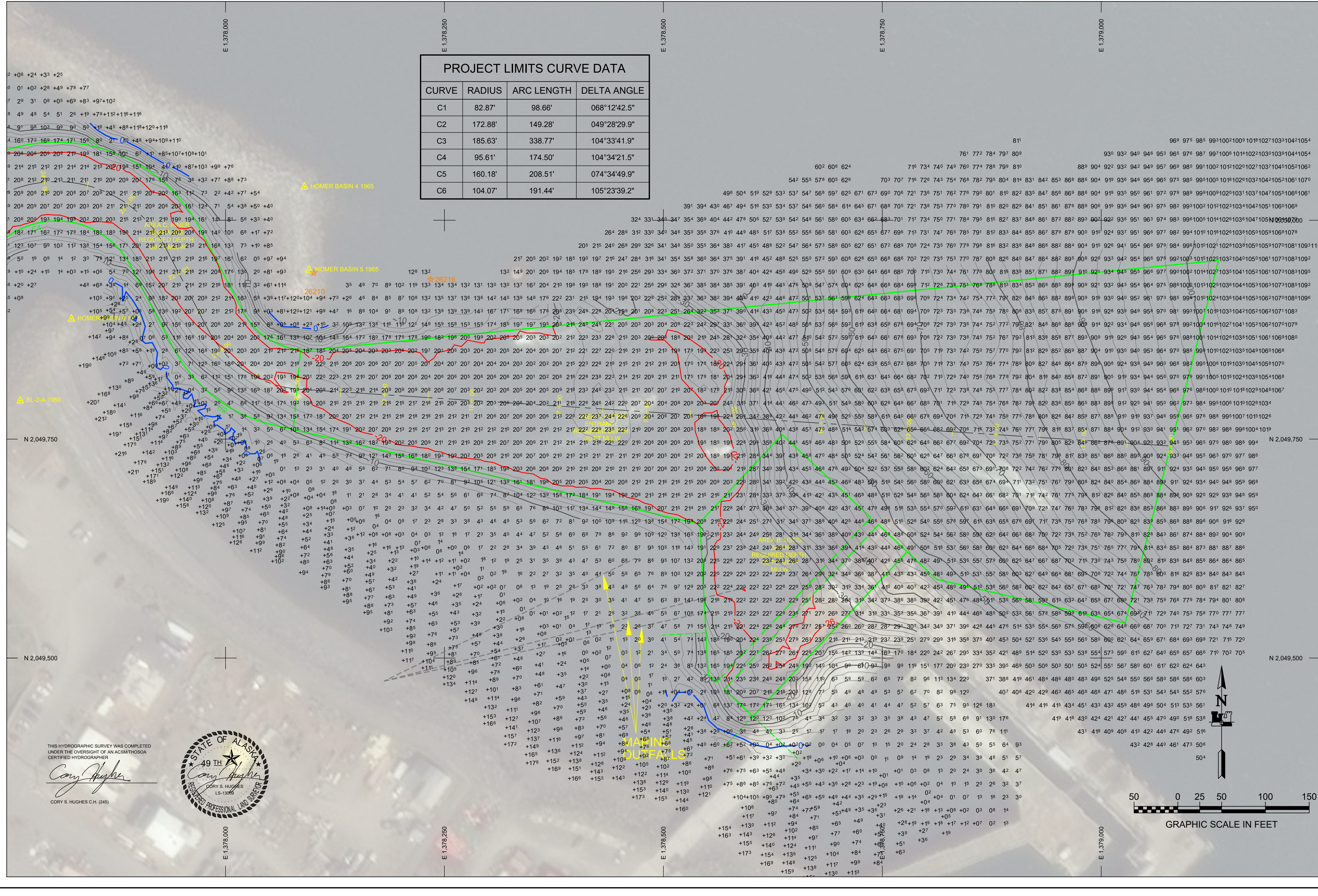
U.S. ARMY CORPS OF ENGINEERS
ALASKA DISTRICT
204 S. STREET
JBER, ALASKA 99506-0888

HUGHES & ASSOCIATES
C/O C. HUGHES
WASILLA, ALASKA 99654

HOMER, ALASKA
HOMER HARBOR
PRE-DREDGE SURVEY
SEPTEMBER 1, 2020

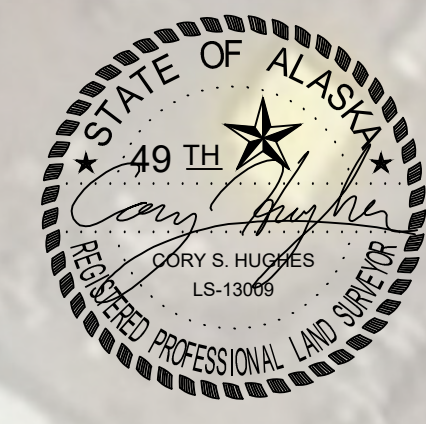
REFERENCE NUMBER:
2-HOM-92-07-73
SHEET 2 OF 6

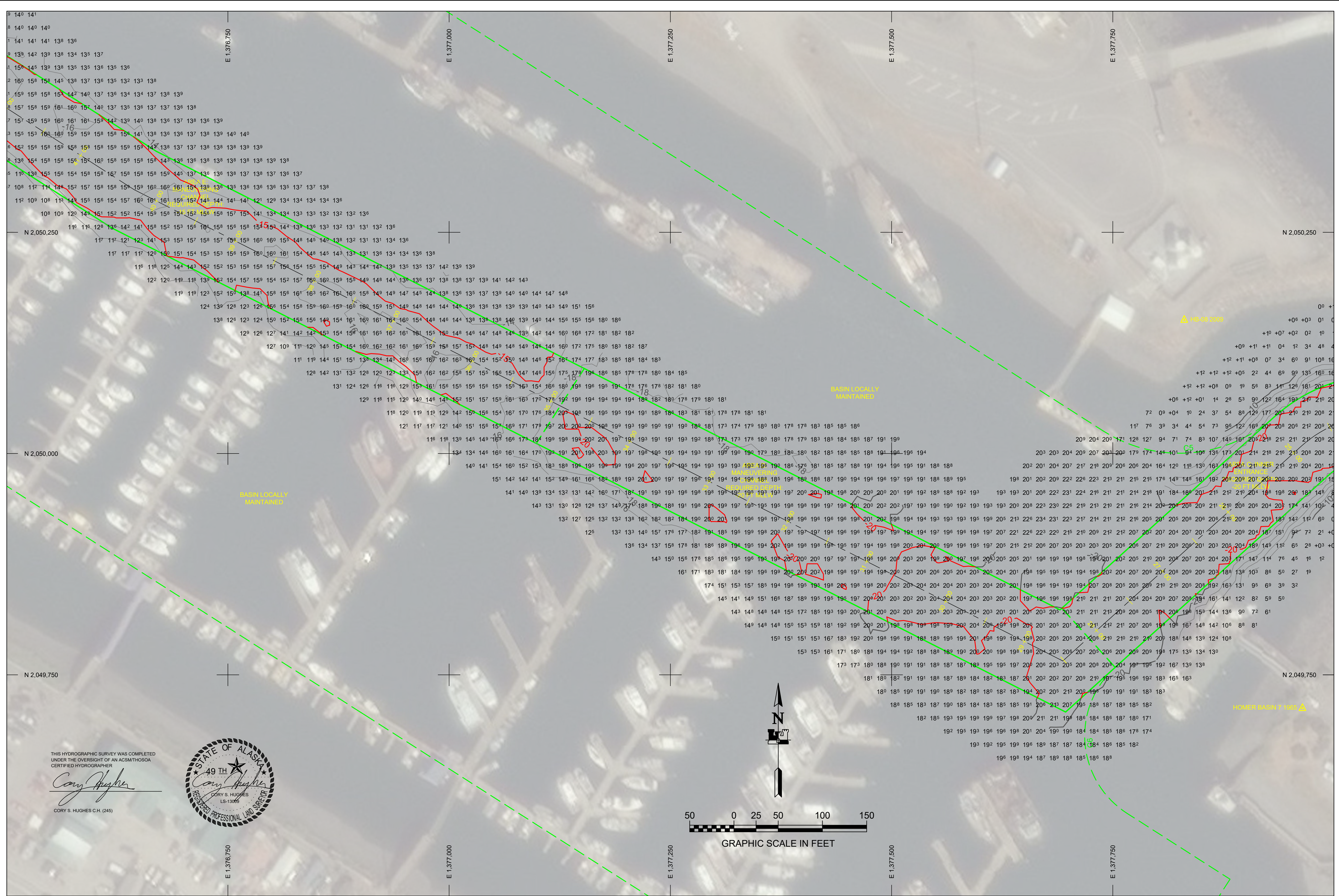
PROJECT LIMITS CURVE DATA			
CURVE	RADIUS	ARC LENGTH	DELTA ANGLE
C1	82.87'	98.66'	068°12'42.5"
C2	172.88'	149.28'	049°28'29.9"
C3	185.63'	338.77'	104°33'41.9"
C4	95.61'	174.50'	104°34'21.5"
C5	160.18'	208.51'	074°34'49.9"
C6	104.07'	191.44'	105°23'39.2"



THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACSM/THOSDA CERTIFIED HYDROGRAPHER

Cory S. Hughes
CORY S. HUGHES
LS-13065
REGISTERED PROFESSIONAL LAND SURVEYOR

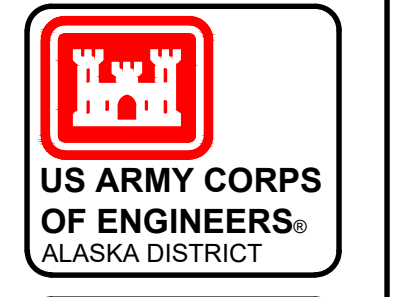
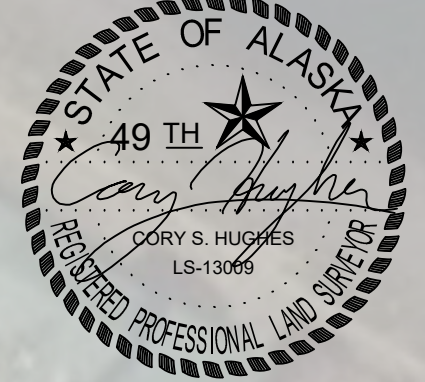




THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACSM/THOSDA CERTIFIED HYDROGRAPHER

Cory S. Hughes

CORY S. HUGHES C.H. (245)



REV.	DATE	BY	APPR.	DESCRIPTION

CONTRACT NO.: W91KH2C0003	TASK ORDER NO.:	JOB NO.:	CONTRACTOR: ALASKA MARINE EXCAVATION
UIC: HN2022	PLOT DATE: 09/23/2020	SCALE: 1" = 50'	CONTRACTOR: GEOTECHNICAL
SURVEYED BY: DCA & LMH	DRAWN BY: DCA	CHECKED BY: CSH	APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION
FILE: HOMER HARBOR DDCR FIRE EXERCISE_20200901.DWG			

HOMER, ALASKA
HOMER HARBOR
 PRE-DREDGE SURVEY
 SEPTEMBER 1, 2020

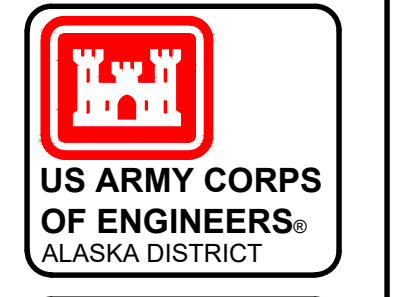
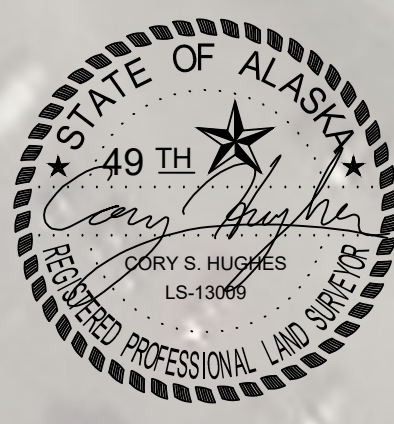
REFERENCE NUMBER:
2-HOM-92-07-73
 SHEET 3 OF 6



THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACSM/TMSS/DA CERTIFIED HYDROGRAPHER

Cory S. Hughes

CORY S. HUGHES C.H. (245)

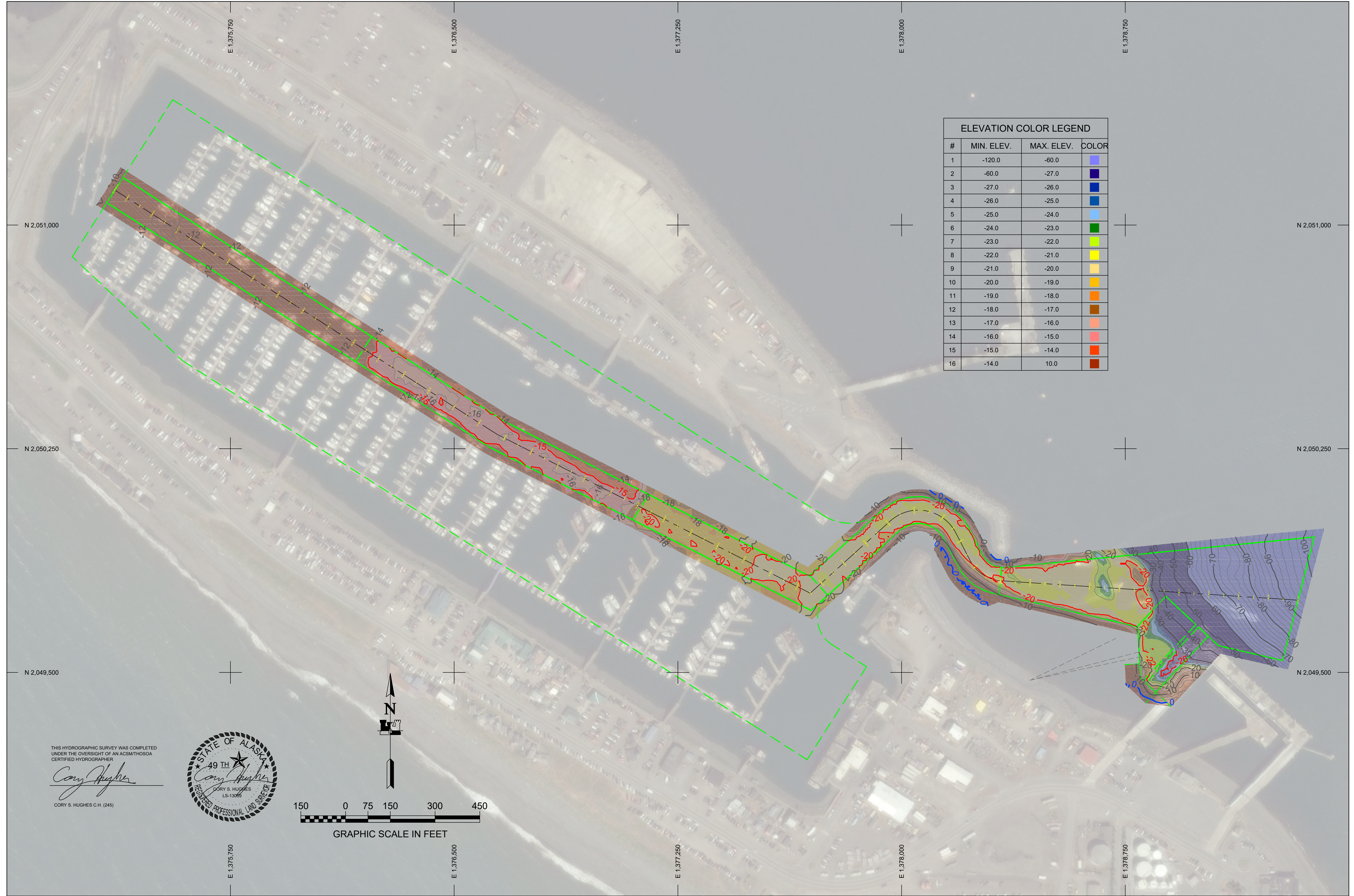


REV.	DATE	BY	APPR.	DESCRIPTION

CONTRACT NO.: W911K82C0003	UJC: HN2022	SURVEYED BY: DCA & LMH	U.S. ARMY CORPS OF ENGINEERS
TASK ORDER NO.:	PLOT DATE: 09/23/2020	DRAWN BY: DCA	ALASKA DISTRICT
JOB NO.:	SCALE: 1" = 50'	CHECKED BY: CSH	204 3RD STREET
CONTRACTOR: ALASKA MARINE EXCAVATION	FILE: HOMER HARBOR DDCR FIRE EXERCISE_20200901.DWG	APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION	BER ALASKA 99506-0888
ANCHOR POINT/ALASKA			HUGHES & ASSOCIATES L.L.C. WASILLA, ALASKA 99654

HOMER, ALASKA
HOMER HARBOR
 PRE-DREDGE SURVEY
 SEPTEMBER 1, 2020

REFERENCE NUMBER:
2-HOM-92-07-73
 SHEET 4 OF 6



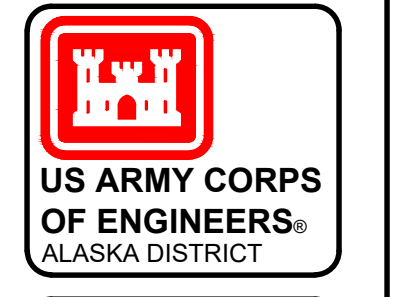
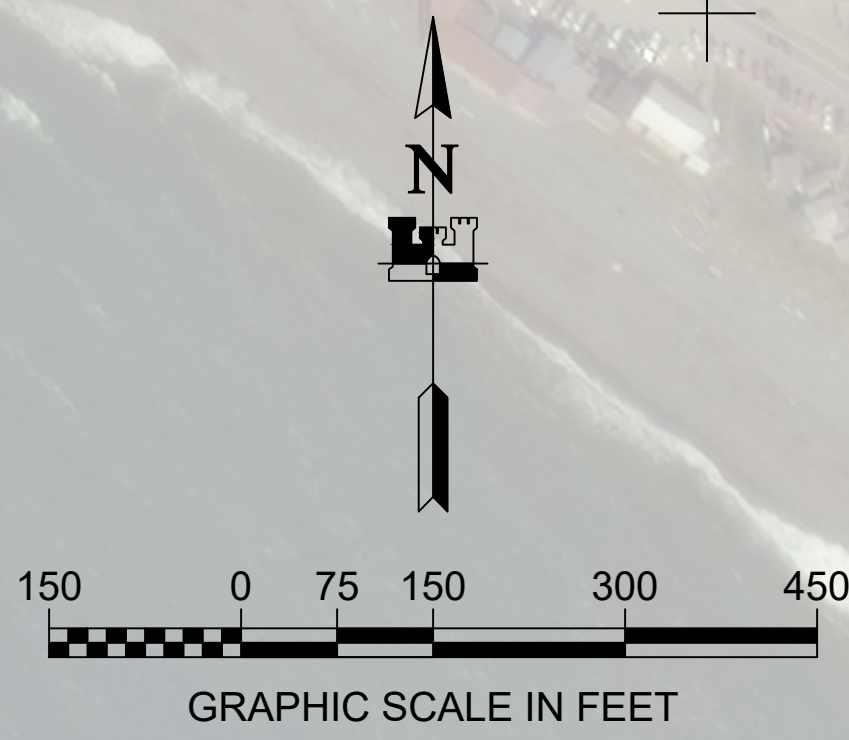
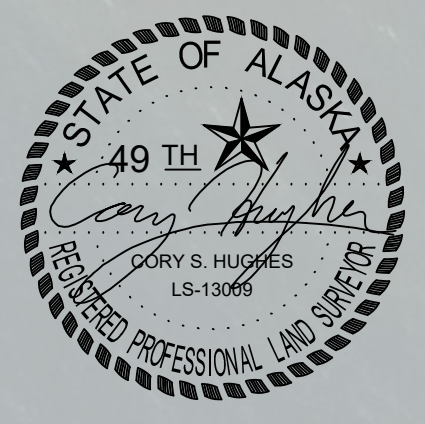
ELEVATION COLOR LEGEND

#	MIN. ELEV.	MAX. ELEV.	COLOR
1	-120.0	-60.0	Light Blue
2	-60.0	-27.0	Dark Blue
3	-27.0	-26.0	Blue
4	-26.0	-25.0	Light Blue
5	-25.0	-24.0	Light Blue
6	-24.0	-23.0	Green
7	-23.0	-22.0	Yellow-Green
8	-22.0	-21.0	Yellow
9	-21.0	-20.0	Light Yellow
10	-20.0	-19.0	Yellow
11	-19.0	-18.0	Orange
12	-18.0	-17.0	Light Orange
13	-17.0	-16.0	Light Orange
14	-16.0	-15.0	Orange
15	-15.0	-14.0	Red-Orange
16	-14.0	10.0	Red

THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACSM/TMSSOA CERTIFIED HYDROGRAPHER

Cory S. Hughes

CORY S. HUGHES C.H. (245)



REV.	DATE	BY	APPR.	DESCRIPTION

CONTRACT NO.: W911K82C0003	JPC: HN2022	SURVEYED BY: DCA & LMH	U.S. ARMY CORPS OF ENGINEERS
TASK ORDER NO.:	PLOT DATE: 09/23/2020	DRAWN BY: DCA	ALASKA DISTRICT
JOB NO.:	ANSI D: SCALE: 1" = 150'	CHECKED BY: CSH	204 S.D. STREET
CONTRACTOR: ALASKA MARINE EXCAVATION	FILE: HOMER HARBOR.DWG	APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION	BER ALASKA 88506-0888
ANCHOR POINT ALASKA			HUGHES & ASSOCIATES
			1500 C STREET
			WASILLA, ALASKA 99854

HOMER, ALASKA
HOMER HARBOR
 PRE-DREDGE SURVEY
 SEPTEMBER 1, 2020

REFERENCE NUMBER:
2-HOM-92-07-73
 SHEET 5 OF 6

DREDGE MATERIAL SURVEY LIMITS		
CORNER#	NORTHING	EASTING
DD1	2,052,117.29	1,373,469.32
DD2	2,051,891.25	1,373,235.80
DD3	2,051,459.82	1,373,653.40
DD4	2,051,685.85	1,373,886.92

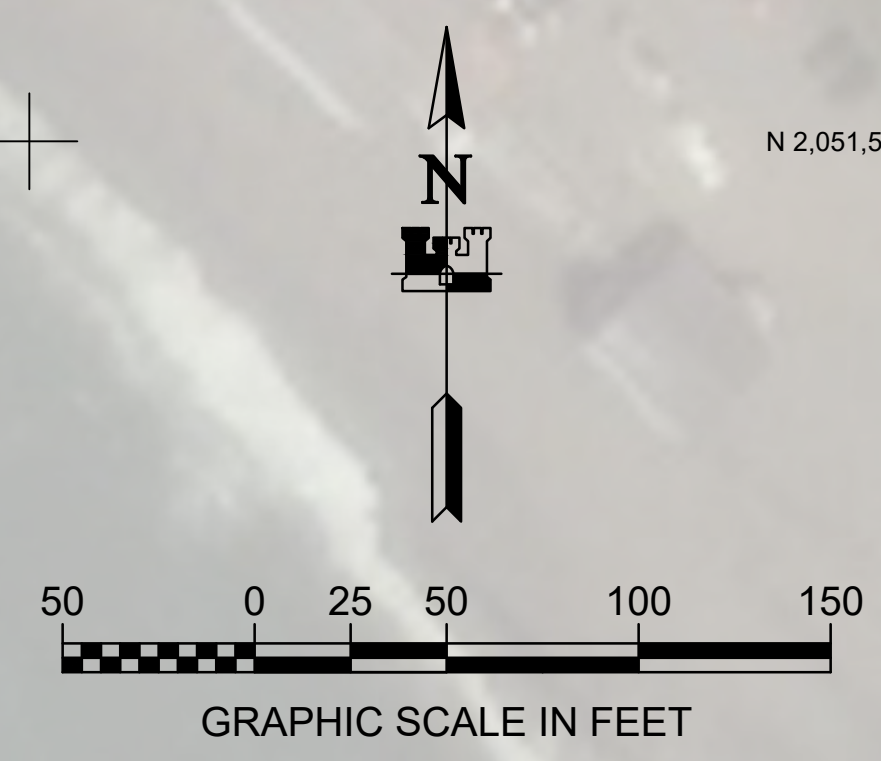
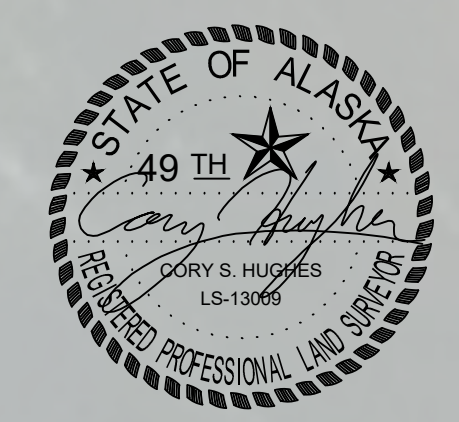


NOTES

- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 IN US SURVEY FEET. THE BASIS OF COORDINATES IS USACE STATION "BOLL" HAVING A VALUE OF N 2,050,682.88 AND E 1,375,195.75, AND USACE STATION "HOMER BASIN 7" HAVING A VALUE OF N 2,049,712.22 AND E 1,377,964.36. POSITIONS FOR OTHER PROJECT CONTROL POINTS WERE DETERMINED BY A SIMULTANEOUS LEAST SQUARES NETWORK ADJUSTMENT OF DIFFERENTIAL STATIC GPS OBSERVATIONS.

LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 2003.00 EPOCH, IN US SURVEY FEET HOLDING "HOMER BASIN 7 1965" HAVING A VALUE OF N 2,049,712.22, E 1,377,964.36 AND "BL-2-A 1989" HAVING A VALUE OF N 2,049,793.81, E 1,378,015.52.
- VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW = 0.0'), BASED ON THE NOAA/NOS TIDAL BENCHMARK LIST: "945 5558, COAL POINT, KACHEMAK BAY, ALASKA" PUBLISHED 04/10/2019. THIS TIDAL DATUM IS BASED ON THE 2012-2016 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/USCGS TIDAL BENCHMARK "5558 C 2018" (PID BBGD31/VM#22931) AS 30.52 FT.
- VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 (GEOID12B) ELEVATIONS HOLDING NOAA/USCGS TIDAL BENCHMARK "5558 C 2018" (PID BBGD31/VM#22931) AS 25.45 FT.
- SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED SEPTEMBER 1, 2020. 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 X2 SOUND VELOCITY PROBE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POS MV SYSTEM. RTK CORRECTIONS WERE BROADCAST FROM A LOCAL BASE STATION OCCUPYING HOMER "BL-2-A". POST PROCESSING KINEMATICS CORRECTIONS USING POSPAC MMS8.3 SOFTWARE WERE APPLIED TO DATA FOLLOWING ACQUISITION. DATA WAS COLLECTED AND PROCESSED USING HYPACK 2020 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING RTK GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING DIFFERENTIAL LEVELING TECHNIQUES ON A PREVIOUS SURVEY, USCG DREDGING, ON APRIL 21, 2020.
- THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
- CONTOURS, AND SOUNDINGS ARE BASED ON A 10 FOOT SORT.

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



REV.	DATE	BY	APPR.	DESCRIPTION

CONTRACT NO.: W911K22C0003	CONTRACTOR: ALASKA MARINE EXCAVATION
TASK ORDER NO.:	STATE: ALASKA
JOB NO.:	ANCHOR POINT/ALASKA
DATE: 09/23/2020	SCALE: 1" = 50'
ANSI D:	FILE: HOMER HARBOR DREDGE DISPOSAL AREA_20200901.DWG
APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION	
CHECKED BY: CSH	
DRAWN BY: DCA	
DESIGNED BY: DCA	
SURVEYED BY: DCA & LMH	
DATE: 09/23/2020	
PROJECT: HOMER HARBOR DREDGE DISPOSAL AREA	
U.S. ARMY CORPS OF ENGINEERS	
4901 W. WARD BLVD.	
ANCHORAGE, ALASKA 99507-0001	
HUGHES & ASSOCIATES	
1000 W. WARD BLVD.	
ANCHORAGE, ALASKA 99507-0001	

HOMER, ALASKA
HOMER HARBOR
DREDGE DISPOSAL AREA
SEPTEMBER 1, 2020

REFERENCE NUMBER:
2-HOM-92-07-73
SHEET 6 OF 6