

US Army Corps of Engineers
ALASKA DISTRICT

CONTRACT NO. WTH16-15-C-0007	CONTRACTOR ALASKA MARINE EXCAVATORS LLC
STATE ALASKA	CITY NOME POINT
Approved:	Date:
Permit Issuer:	Permit Number:



NOTES
1. PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 8, NAD83 (NSRS2007) IN US FEET. BASIS OF COORDINATES IS NATIONAL GEODETIC SURVEY (NGS) CONTROL STATIONS 'OME A' (PID DF3651, AS N 3,841,996.47 AND E 1,728,070.64) AND 'OME B' (PID DF3652, AS N 3,842,264.55 AND E 1,729,661.41). MONUMENTS ARE SECONDARY AIRPORT CONTROL STATIONS (SCCS) AT NOME AIRPORT, ALASKA.
2. LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 8, NAD83, IN US SURVEY FEET HOLDING USACE SBC "KMJV-1" AS N 3,837,168.87, E 1,729,283.15 AND USACE SBC "BOOTSTRAP" AS N 3,638,021.15 E 1,730,359.37.
3. VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHING NAVD88 (GEOD 12B) ELEVATIONS HOLDING NOAA/USACE TIDAL BENCHMARK "946 8756 G 1992" (PID BBB024 / VMH12154) AS 15.42 FEET.
4. SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
5. BATHYMETRY WAS COLLECTED JUNE 3-4, 2017. SOUNDINGS WERE COLLECTED USING A "CEE" HYDROSYSTEMS CEE ECHO® SONAR WITH A 3° SINGLE BEAM TRANSDUCER. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN AML BASE X2 PROBE. POSITIONING AND VESSEL ATTITUDE WERE MEASURED USING A TRIMBLE RTK GPS SYSTEM. RTK CORRECTIONS WERE BROADCAST FROM A LOCAL BASE STATION LOCATED KMJV-1. DATA WAS COLLECTED AND FIELD PROCESSED USING "HYPACK 2017" SOFTWARE. TIDE ELEVATIONS WERE MEASURED USING A "TRIMBLE R9 RTK" SYSTEM AND VERIFIED THROUGH CONVENTIONAL DIFFERENTIAL LEVELING TECHNIQUES.
6. THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
7. MAP SOUNDINGS ARE SORTED AT 12 FEET AND ARE SHOAL BIASED. VOLUME SOUNDINGS ARE SORTED AT 3 FOOT AND ARE SHOAL BIASED.

NOTES

SURVEY CONTROL DATA (US FT)				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
39+71	3,834,957.98	1,729,422.33		BRASS CAP
53+68	3,834,888.51	1,728,762.20		BRASS CAP
BOOTSTRAP	3,838,021.15	1,730,359.97	6.66	BRASS CAP
CELL	3,835,965.94	1,729,122.26	12.90	ALUMINUM MON
DINGO	3,836,890.97	1,732,407.19	19.34	BRASS CAP
KMJV-1	3,837,168.87	1,729,283.15	16.46	BRASS CAP
NH-02	3,838,272.50	1,731,835.01	12.44	BRASS CAP
NH-03	3,837,585.34	1,730,864.94	13.83	BRASS CAP
NH-04	3,837,212.71	1,731,266.48	15.24	BRASS CAP
OME A	3,841,096.47	1,728,070.64		BRASS CAP
OME B	3,842,264.55	1,729,661.41		BRASS CAP
PUMP	3,837,605.19	1,731,831.48	9.17	BRASS CAP
SHEET	3,837,882.85	1,731,533.69		ALUMINUM MON

SURVEY CONTROL DATA (US FT)

NAVIGATION AIDS (US FT)			
USCG NO.	NORTHING	EASTING	DESCRIPTION
27962	3,834,922	1,729,388	ENTRANCE LIGHT 2
27963	3,834,844	1,728,782	ENTRANCE LIGHT 1
27964	3,836,250	1,729,618	BUOY 1
27965	3,836,070	1,729,925	BUOY 2
27966	3,836,541	1,729,900	BUOY 3

NAVIGATION AIDS (US FT)

VOLUME COMPUTATIONS			
AREA A: OUTER ENTRANCE CHANNEL	DEPTH (FT)	CU. YD.	
AVAILABLE TO REQUIRED DEPTH (RD)	-22.0	1,836	
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	-23.0	9,019	
AVAILABLE SIDE SLOPES (SS) AT 4.1 (H/V) & 67.5' WIDE	VARIES	1,275	
AREA B: TRANSITION -22FT TO -12FT			
AVAILABLE TO REQUIRED DEPTH (RD)			VARIES
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)			VARIES
AREA C: INNER ENTRANCE CHANNEL			
AVAILABLE TO REQUIRED DEPTH (RD)	-12	801	
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	-13	3,644	
AVAILABLE SIDE SLOPES (SS) AT 4.1 (H/V) & 25' WIDE	VARIES	1,305	
AREA D: MANEUVERING AREA			
AVAILABLE TO REQUIRED DEPTH (RD)	-10	3,965	
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	-11	3,547	
AVAILABLE SIDE SLOPES (SS) AT 3.1 (H/V) & 25' WIDE	VARIES	3,896	
AREA E: SMALL BOAT HARBOR			
AVAILABLE TO REQUIRED DEPTH (RD)	-10	611	
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	-11	1,535	
AVAILABLE SIDE SLOPES (SS) AT 3.1 (H/V) & 25' WIDE	VARIES	116	
AREA F: EAST SEDIMENT TRAP			
AVAILABLE TO REQUIRED DEPTH (RD)	-22	42,310	
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	-23	5,987	
AVAILABLE SIDE SLOPES (SS) AT 4.1 (H/V) & 67.5' WIDE	VARIES	27,552	
AREA G: SEDIMENT TRAP CHANNEL			
AVAILABLE TO REQUIRED DEPTH (RD)	-7	2,927	
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)			117,328

VOLUME COMPUTATIONS

AREA A: OUTER ENTRANCE CHANNEL

DEPTH (FT)

CU. YD.

AVAILABLE TO REQUIRED DEPTH (RD)

-22.0

1,836

AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)

-23.0

9,019

AVAILABLE SIDE SLOPES (SS) AT 4.1 (H/V) & 67.5' WIDE

VARIES

1,275

AVAILABLE TO REQUIRED DEPTH (RD)

-12

3,286

AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)

-13

3,516

AVAILABLE TO REQUIRED DEPTH (RD)

-12

801

AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)

-13

3,644

AVAILABLE SIDE SLOPES (SS) AT 4.1 (H/V) & 25' WIDE

VARIES

1,305

AVAILABLE TO REQUIRED DEPTH (RD)

-10

3,965

AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)

-11

3,547

AVAILABLE SIDE SLOPES (SS) AT 3.1 (H/V) & 25' WIDE

VARIES

3,896

AVAILABLE TO REQUIRED DEPTH (RD)

-10

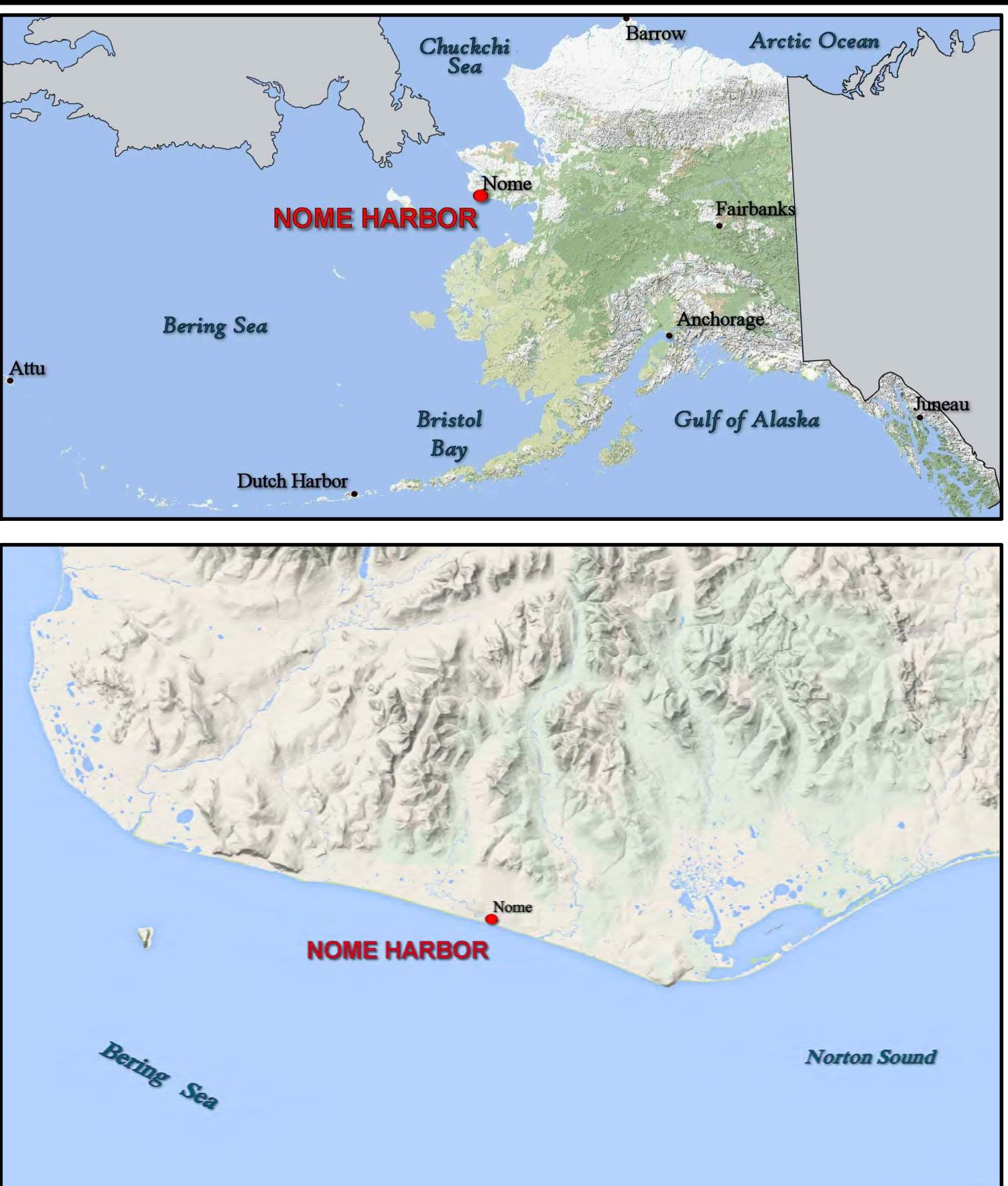
611

AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)

-11

1,535

AVAILABLE SIDE SLOPES (SS) AT



U.S. ARMY CORPS OF ENGINEERS
ALASKA DISTRICT

CONTRACT NO.	WBM/KB/15-2007
CONTRACTOR	ALASKA MARINE EXCAVATION LLC
CITY ASCHER COUNT	STATE ALASKA
RECOMMENDED	Approved
DATE	[Signature]

NOTES
1. PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 8, NAD83 (NRS2007) IN U.S. FEET. BASIS OF COORDINATES IS NATIONAL GEODETIC SURVEY (NGS) CONTROL STATIONS "OME A" (PID: DF3651), AS N 3,841,096.47 AND E 1,728,70.64 AND "OME B" (PID DF3652), AS N 3,842,264.55 AND E 1,729,661.41. MONUMENTS ARE SECONDARY AIRPORT CONTROL STATIONS (SACS) AT NOME AIRPORT, ALASKA.
LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 8, NAD83, IN US SURVEY FEET HOLDING USACE SBC "KMUJ-1" AS N 3,837,168.87, E 1,729,283.15 AND USACE SBC "BOOTSTRAP" AS N 3,838,021.15 E 1,730,359.97.
2. VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0), BASED ON THE NOAA/NOS TIDAL BENCHMARK LIST: "946 8756 NOME, NORTON SOUND, ALASKA" PUBLISHED 10/06/2011. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING USACE/NOAA TIDAL BENCH MARK 946 8756 SHEET PILE B" (VM#12149) AS 16.30'.
3. VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAV088 (GEOD 12B) ELEVATIONS HOLDING NOAA/USACE TIDAL BENCHMARK "946 8756 G 1992" (PID BBB24 / VM#12154) AS 15.42 FEET.
4. SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
5. BATHYMETRY WAS COLLECTED JUNE 3-4, 2017. SOUNDINGS WERE COLLECTED USING A CEE HYDROSYSTEMS CEE ECHO Sounder WITH A 3" SINGLE BEAM TRANSDUCER. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN AML BASE X2 PROBE. POSITIONING AND VESSEL ATTITUDE WERE MEASURED USING A TRIMBLE R8 RTK SYSTEM. RTK CORRECTIONS WERE BROADCAST FROM A LOCAL BASE STATION OCCUPYING "KMUJ-1". DATA WAS COLLECTED AND FIELD PROCESSED USING "HYDROPACK 2017" SOFTWARE. TIDE ELEVATIONS WERE MEASURED USING A TRIMBLE R8 RTK SYSTEM AND VERIFIED THROUGH CONVENTIONAL DIFFERENTIAL LEVELING TECHNIQUES.
6. THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
7. MAP SOUNDINGS ARE SORTED AT 12 FEET AND ARE SHOAL BIASED. VOLUME SOUNDINGS ARE SORTED AT 3 FOOT AND ARE SHOAL BIASED.

SURVEY CONTROL DATA (US FT)				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
39+71	3,834,957.98	1,729,422.33		BRASS CAP
53+68	3,834,888.51	1,728,762.20		BRASS CAP
BOOTSTRAP	3,838,021.15	1,730,359.97	6.66	BRASS CAP
CELL	3,835,965.94	1,729,122.26	12.90	ALUMINUM MON
DINGO	3,836,890.97	1,732,407.19	19.34	BRASS CAP
KMUJ-1	3,837,168.87	1,729,283.15	16.46	BRASS CAP
NH-02	3,838,272.50	1,731,835.01	12.44	BRASS CAP
NH-03	3,837,985.34	1,730,864.94	13.83	BRASS CAP
NH-04	3,837,122.71	1,731,266.48	15.24	BRASS CAP
OME A	3,841,096.47	1,728,070.64		BRASS CAP
OME B	3,842,264.55	1,729,661.41		BRASS CAP
PUMP	3,837,605.19	1,731,831.48	9.17	BRASS CAP
SHEET	3,837,882.85	1,731,533.69		ALUMINUM MON

NAVIGATION AIDS (US FT)			
USCG NO.	NORTHING	EASTING	DESCRIPTION
27962	3,834,922	1,729,388	ENTRANCE LIGHT 2
27963	3,834,844	1,728,782	ENTRANCE LIGHT 1
27964	3,836,250	1,729,618	BUOY 1
27965	3,836,070	1,729,925	BUOY 2
27966	3,836,541	1,729,900	BUOY 3

NAVIGATION AIDS (US FT)			
US ARMY CORPS OF ENGINEERS	NORTHING	EASTING	DESCRIPTION
27967	3,836,470	1,730,030	BUOY 4
27968	3,838,033	1,730,848	BUOY 5
HUGHES & ASSOCIATES	3,837,935	1,731,111	BUOY 7
2979 E. COTTLE LOOP	3,837,678	1,731,012	BUOY 8
WASILLA, AK 98654	3,837,805	1,731,401	BUOY 9

VOLUME COMPUTATIONS	
AREA A: OUTER ENTRANCE CHANNEL	DEPTH (FT) CU. YD.
AVAILABLE TO REQUIRED DEPTH (RD)	-22.0 1,836
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	-23.0 9,019
AVAILABLE SIDE SLOPES (SS) AT 4:1 (H:V) & 67.5' WIDE	VARIES 1,275
AREA B: TRANSITION -22FT TO -12FT	
AVAILABLE TO REQUIRED DEPTH (RD)	VARIES 3,286
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	VARIES 3,516
AREA C: INNER ENTRANCE CHANNEL	
AVAILABLE TO REQUIRED DEPTH (RD)	-12 801
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	-13 3,644
AVAILABLE SIDE SLOPES (SS) AT 4:1 (H:V) & 25' WIDE	VARIES 1,505
AREA D: MANEUVERING AREA	
AVAILABLE TO REQUIRED DEPTH (RD)	-10 3,965
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	-11 3,547
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES 3,896
AREA E: SMALL BOAT HARBOR	
AVAILABLE TO REQUIRED DEPTH (RD)	-10 611
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	-11 1,535
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES 116
AREA F: EAST SEDIMENT TRAP	
AVAILABLE TO REQUIRED DEPTH (RD)	-22 42,310
AVAILABLE BETWEEN RD AND MAX PAY DEPTH (MP)	-23 5,987
AVAILABLE SIDE SLOPES (SS) AT 4:1 (H:V) & 67.5' WIDE	VARIES 27,552
AREA G: SEDIMENT TRAP CHANNEL	
AVAILABLE TO REQUIRED DEPTH (RD)	-7 2,927
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)	117,328

SHEET IDENTIFICATION	
6-NOM-92-07-55	Sheet 2 of 7

NOME, ALASKA
NOME HARBOR
NOME PRE-DREDGE SURVEY
JUNE 3-6, 2017