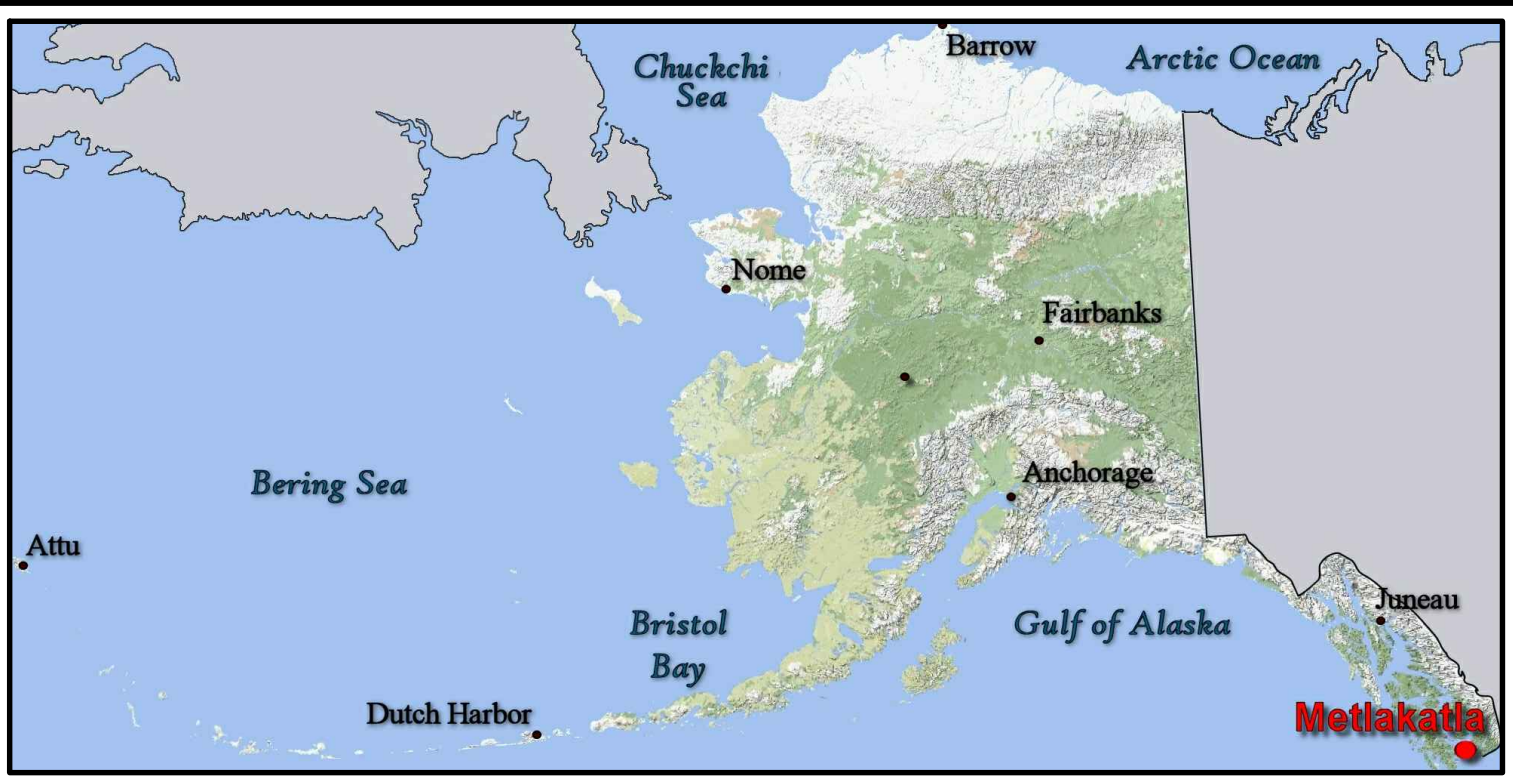


OBSTRUCTION DATA				
ID	NORTHING	EASTING	DEPTH	APPROX SIZE (FEET)
OBST-1	1,209,896.7	3,124,812.1	-10.5	22X6X3
OBST-2	1,209,683.2	3,124,742.4	-10.5	3X2X1.5
OBST-3	1,209,818.1	3,124,644.5	-11.5	15X4X2
OBST-4	1,209,594.3	3,124,657.1	-9.8	3X2X2.5
OBST-5	1,209,525.8	3,124,716.8	-9.4	3X2X2

OBSTRUCTION DATA				
ID	NORTHING	EASTING	DEPTH	APPROX SIZE (FEET)
OBST-6	1,209,530.9	3,124,846.8	-7.0	1.5X2X2.3
OBST-7	1,209,608.3	3,124,850.3	-6.0	4X2X2
OBST-8	1,209,760.3	3,124,525.0	-12.0	3X2X2
OBST-9	1,209,963.6	3,124,570.0	-9.3	3X2X2
OBST-10	1,209,577.8	3,125,092.4	-1.0	2X2X2



NOTES

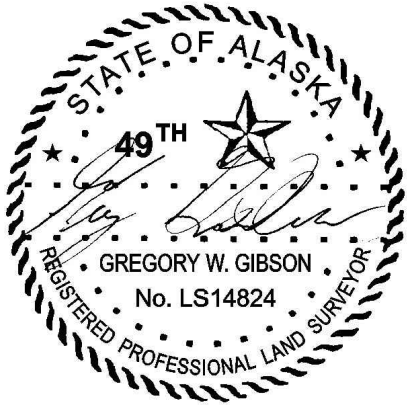
- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83 2011 (2010.00), IN US SURVEY FEET BASED ON A FULLY CONSTRAINED STATIC GPS NETWORK HOLDING THE PUBLISHED NAD83 2010.00 EPOCH VALUES OF NGS CORS STATIONS: "LEVEL ISLAND 6 CORS ARP" (PID DJ3035); "KLAWOCKAIRAK2006 CORS ARP" (PID DM7451); "ANNETTE ISLAND 5 CORS ARP" (PID DK6482).
- LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83(2011), IN US SURVEY FEET HOLDING "BM 11 1969" AS N 1,209,598.48; E 3,124,922.28 AND "S END W BW 1981" AS N 1,210,018.47; E 3,121,198.52.
- VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 (GEOID 12B) ELEVATIONS HOLDING NOAA/USACE TIDAL BENCHMARK "945 0314 NO 11" (PID BBFF94/VMM14121) AS 20.09.
- SOUNDINGS ARE IN US SURVEY FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED MAY 29-31, 2016. SOUNDINGS WERE COLLECTED USING AN R2SONIC 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 APPLANIX POSMV OCEANMASTER V5 SYSTEM. DATA WAS COLLECTED AND PROCESSED USING QINSY 8.1 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING STATIC GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING DIFFERENTIAL LEVELING TECHNIQUES.
- TERRESTRIAL LASER SCANNING DATA COLLECTED MAY 28, 2016. DATA WAS COLLECTED USING A REIGL VZ400 LASER SCANNER. MOBILE SCANNING WAS COLLECTED AND PROCESSED USING QINSY 8.1 SOFTWARE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POSMV OCEANMASTER V5 SYSTEM.
- THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.

SURVEY CONTROL DATA				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
0314A 2009	1,209,533.00	3,125,010.08	23.58	USCGS BENCH MARK 3.5" BC
0314B 2009	1,209,498.87	3,124,579.66	17.60	USCGS BENCH MARK 3.5" BC
0314C 2009	1,209,679.45	3,124,464.98	20.23	USCGS BENCH MARK 3.5" BC
BM 11 1969	1,209,598.48	3,124,922.28	23.94	USCGS BENCH MARK 3.5" BC
BM 13 1969	1,209,318.21	3,124,709.08	20.02	USCGS BENCH MARK 3.5" BC
BM 14 1972	1,210,036.98	3,124,346.69	22.22	USCGS BENCH MARK 3.5" BC
MET 3 1972	1,209,604.32	3,124,917.16	23.53	USACE 3.5" DOMEDBC
MET 4 1972	1,209,954.42	3,124,641.82	21.46	USACE 3.5" DOMEDBC
MOH-1 1999	1,209,255.75	3,124,769.89	23.52	USACE 3" DOMED BC
MOH-2 1999	1,209,938.18	3,124,374.05	22.40	USACE 3" DOMED BC
MOH-3 2003	1,209,395.26	3,124,903.69	23.59	USACE 3" DOMED BC
MOH-4 2003	1,209,598.83	3,124,500.62	20.31	USACE 3" DOMED BC

NAVIGATION AIDS			
USCG NO.	NORTHING	EASTING	DESCRIPTION
22090	1,209,970	3,124,627	METLAKATLA BREAKWATER LIGHT 1

PROJECT LIMITS			PROJECT LIMITS		
CORNER#	NORTHING	EASTING	CORNER#	NORTHING	EASTING
1	1,210,130.72	3,124,606.88	4	1,209,423.69	3,124,687.61
2	1,209,950.73	3,124,564.81	5	1,209,813.41	3,124,465.96
3	1,209,554.62	3,124,865.66	6	1,210,114.85	3,124,536.42

VOLUME COMPUTATIONS		
AREA A: MOORING BASIN	MLLW=0	CU. YD.
AVAILABLE TO PROJECT DEPTH (PD)	-10.0	229
AVAILABLE TO MAX PAY DEPTH (MP)	-11.0	401
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	687
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)		1,088



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

David R. Neff C.H. (275)

US Army Corps of Engineers
ALASKA DISTRICT

CONTRACT NO. W1110514-0013
CONTRACTOR ETAC INC.
CITY WASILLA
STATE ALASKA
APPROVED BY: [Signature]
DATE: 05/26/2016
DESIGNED BY: [Signature]
DATE: 05/26/2016
CHECKED BY: [Signature]
DATE: 05/26/2016
IN CHARGE: [Signature]
DATE: 05/26/2016

DATE	DESCRIPTION	BY	APPROVED
05/26/2016	PROJECT CONDITION SURVEY	DAVID R. NEFF	

METLAKATLA, ALASKA
METLAKATLA OLD HARBOR
PROJECT CONDITION SURVEY
05/26 - 06/02/2016

SHEET IDENTIFICATION
1-MET-92-07-25
Sheet 1 of 2

