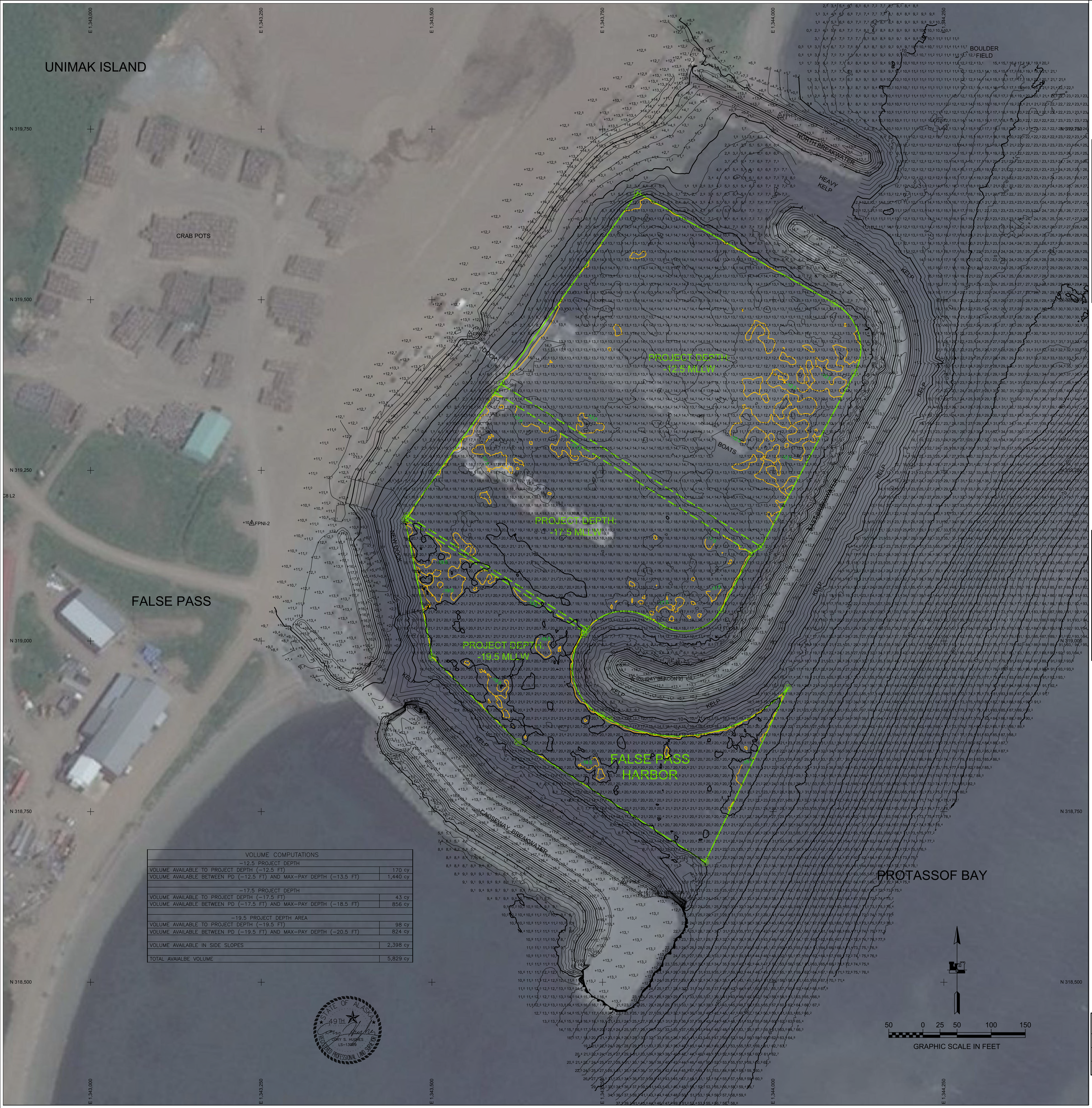
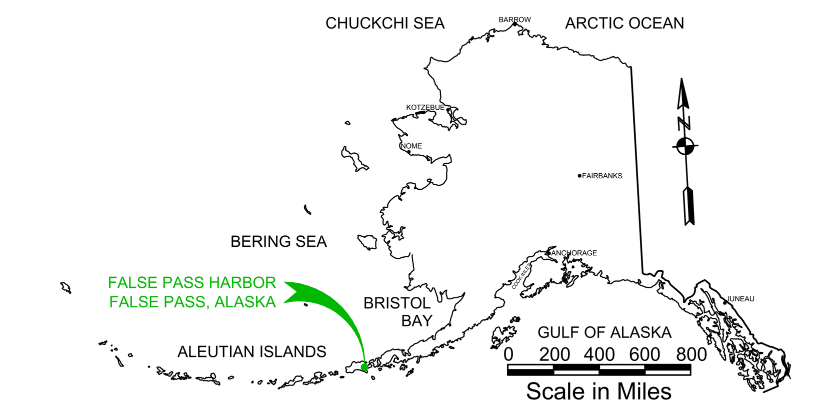
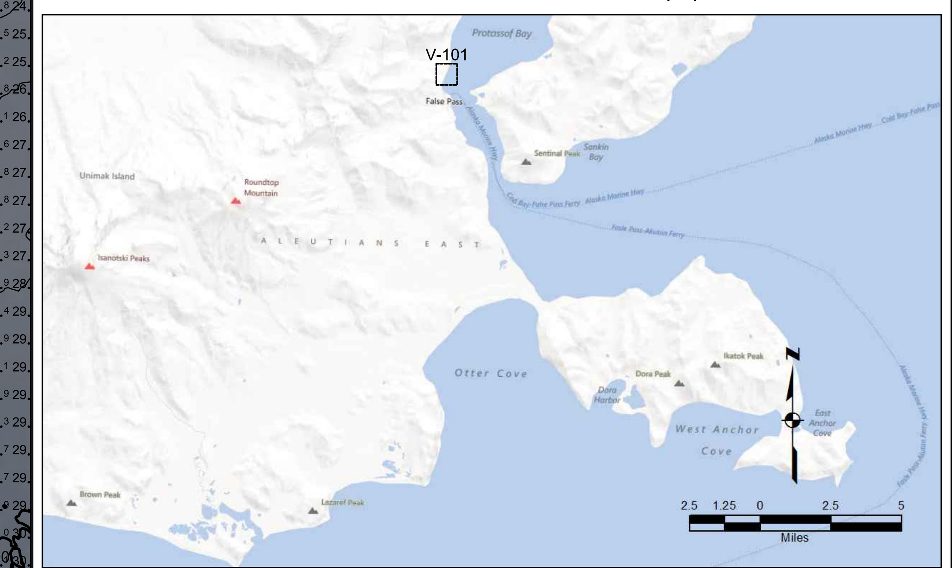


VOLUME COMPUTATIONS	
-12.5 PROJECT DEPTH	
VOLUME AVAILABLE TO PROJECT DEPTH (-12.5 FT)	170 cy
VOLUME AVAILABLE BETWEEN PD (-12.5 FT) AND MAX-PAY DEPTH (-13.5 FT)	1,440 cy
-17.5 PROJECT DEPTH	
VOLUME AVAILABLE TO PROJECT DEPTH (-17.5 FT)	43 cy
VOLUME AVAILABLE BETWEEN PD (-17.5 FT) AND MAX-PAY DEPTH (-18.5 FT)	856 cy
-19.5 PROJECT DEPTH AREA	
VOLUME AVAILABLE TO PROJECT DEPTH (-19.5 FT)	98 cy
VOLUME AVAILABLE BETWEEN PD (-19.5 FT) AND MAX-PAY DEPTH (-20.5 FT)	824 cy
VOLUME AVAILABLE IN SIDE SLOPES	2,398 cy
TOTAL AVAIALBE VOLUME	5,829 cy



LOCATION/VICINITY MAP(S)



NOTES

1. HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 7, NAD83, IN US SURVEY FEET BASED ON A FULLY CONSTRAINED STATIC GPS NETWORK H OLDING THE PUBLISHED NAD83 (CORS) 2010.00 EPOCH VALUES OF NGS CORS STATIONS: "CPSARICHEFAK2008 CORS ARP" (AC10 - PID DM7475) AS N 54 31 21.302 W 164 53 12.152 (GEOGRAPHIC 1983) AND "ASNAKISLNDAK2007 CORS ARP" (AC42 PID - DM7493) AS N 54 28 18.403 W 162 47 01.074 (GEOGRAPHIC 1983) AND "SANDPOINT_AK2004 CORS ARP" (AB07 PID - DL7635) N 55 20 57.400 W 160 28 36.253 (GEOGRAPHIC 1983). RESULTANT COORDINATES AT PRIMARY HARBOR CONTROL HOLD ALUMINUM CAP "FPNI 1" AS N 318,121.76, E 1,342,859.38 AND ALUMINUM CAP "FPNI 3" AS N 320,161.83, E 1,344,013.12, NAD 83 STATE PLANE, ALASKA ZONE 7.
2. VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=O.O'), BASED ON THE NOAA/NOS TIDAL BENCH MARK LIST: "945 2955 FALSE PASS, ALASKA". THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOS TIDAL BENCHMARK "2955 B" AS 18.22' AND NOS TIDAL BENCHMARK "2955 D" AS 12.89'. THIS TIDAL DATUM DOES NOT HAVE A PUBLICATION DATE AS IT WAS UPDATED AT THE SAME TIME AS THE SURVEY AND IS AWAITING APPROVAL FROM NOAA.
3. VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 ELEVATIONS HOLDING NOAA/NOS TIDAL BENCHMARK "2955 B" (PID BBDC46) AS 16.91'.
4. SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
5. THE EXISTING PROJECT CONSISTS OF FALSE PASS HARBOR LOCATED IN FALSE PASS, ALASKA.
6. THE SURVEY WAS CONDUCTED ON AUGUST 12-16, 2013. HYDROGRAPHIC SOUNDING DATA WAS COLLECTED USING AN ODOM ES3 MULTI-BEAM ECHOSOUNDER (200KHZ, 480-DEGREE SWATH-WIDTH WITH 120, 0.75 DEGREE BEAMS). POSITIONING AND VESSEL ATTITUDE WERE PROVIDED IN REAL TIME USING A TRIMBLE 461 RTK GPS RECEIVER OPERATING ON KINEMATIC CORRECTORS BROADCAST FROM A TRIMBLE R8 RTK BASE RECEIVER SET AT CONTROL STATION, "FPNI 1". SOUND VELOCITY PROFILE WAS PROVIDED USING AN ODOM DIGI-BAR PRO, AND WAS PROVIDED IN REAL TIME AT THE SOUNDER HEAD USING AN ODOM DIGI-BAR V. DATA COLLECTION AND NAVIGATION WERE PERFORMED USING HYPACK HYSWEEP (2013) SOFTWARE. MULTI-BEAM SURVEY DATA WAS POST-PROCESSED USING HYPACK HYSWEEP (2013) SOFTWARE.
7. THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
8. MAP SOUNDINGS ARE BINNED AT 12 FEET AND ARE NEAREST CELL CENTER VALUE. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE AVERAGE CELL VALUE.

SURVEY CONTROL DATA

STATION	NORTHING	EASTING	MLLW	DESCRIPTION
14C C8 L2	319,212.79	1,342,851.98	15.66	DOMED BC
FPH-1	318,647.59	1,343,780.57	17.63	DOMED BC
FPH-2	319,450.01	1,343,555.19	15.68	DOMED BC
FPH-3	319,769.66	1,344,009.81	13.62	DOMED BC
FPNI-1	318,122.44	1,342,862.12	13.38	USACE SBC
FPNI-2	319,172.24	1,343,236.15	10.66	USACE SBC
FPNI-3	320,162.54	1,344,015.87	11.72	USACE SBC

PROJECT LIMITS

CORNER#	NORTHING	EASTING
1	319,656.91	1,343,801.23
2	319,494.54	1,344,089.77
3	319,392.58	1,344,119.37
4	319,137.81	1,343,982.45
5	319,376.40	1,343,601.46
6	319,364.16	1,343,592.84
7	319,128.54	1,343,968.43
8	319,046.16	1,343,923.98
9	319,022.35	1,343,838.21
10	319,034.82	1,343,816.16
11	319,017.64	1,343,727.63
12	319,183.45	1,343,464.21
13	319,178.58	1,343,460.74
14	319,012.89	1,343,724.05
15	319,009.95	1,343,721.84
16	318,890.93	1,343,748.89
17	318,885.03	1,343,760.27
18	318,931.19	1,344,021.48
19	318,676.13	1,343,900.42
20	318,851.81	1,343,626.32
21	318,976.22	1,343,500.60

NAVIGATION AIDS

USCG NO.	NORTHING	EASTING	DESCRIPTION
101	318,631.00	1,343,805.00	DAY BEACON 1
102	318,944.00	1,343,794.00	DAY BEACON 2

US Army Corps of Engineers ®
ALASKA DISTRICT

CONTRACT NO.	CONTRACTOR	CITY / STATE	Recommended: PRIME CONTRACTOR / Approved: CHIEF SURVEY SECTION / Date:

REVISION	DATE	DESCRIPTION	BY	APPVD

U.S. ARMY CORPS OF ENGINEERS
ALASKA DISTRICT
P.O. BOX 6898
JBER, ALASKA 99506-0898

HUGHES & ASSOCIATES
2970 COTTLE LOOP
WASILLA, AK 99654

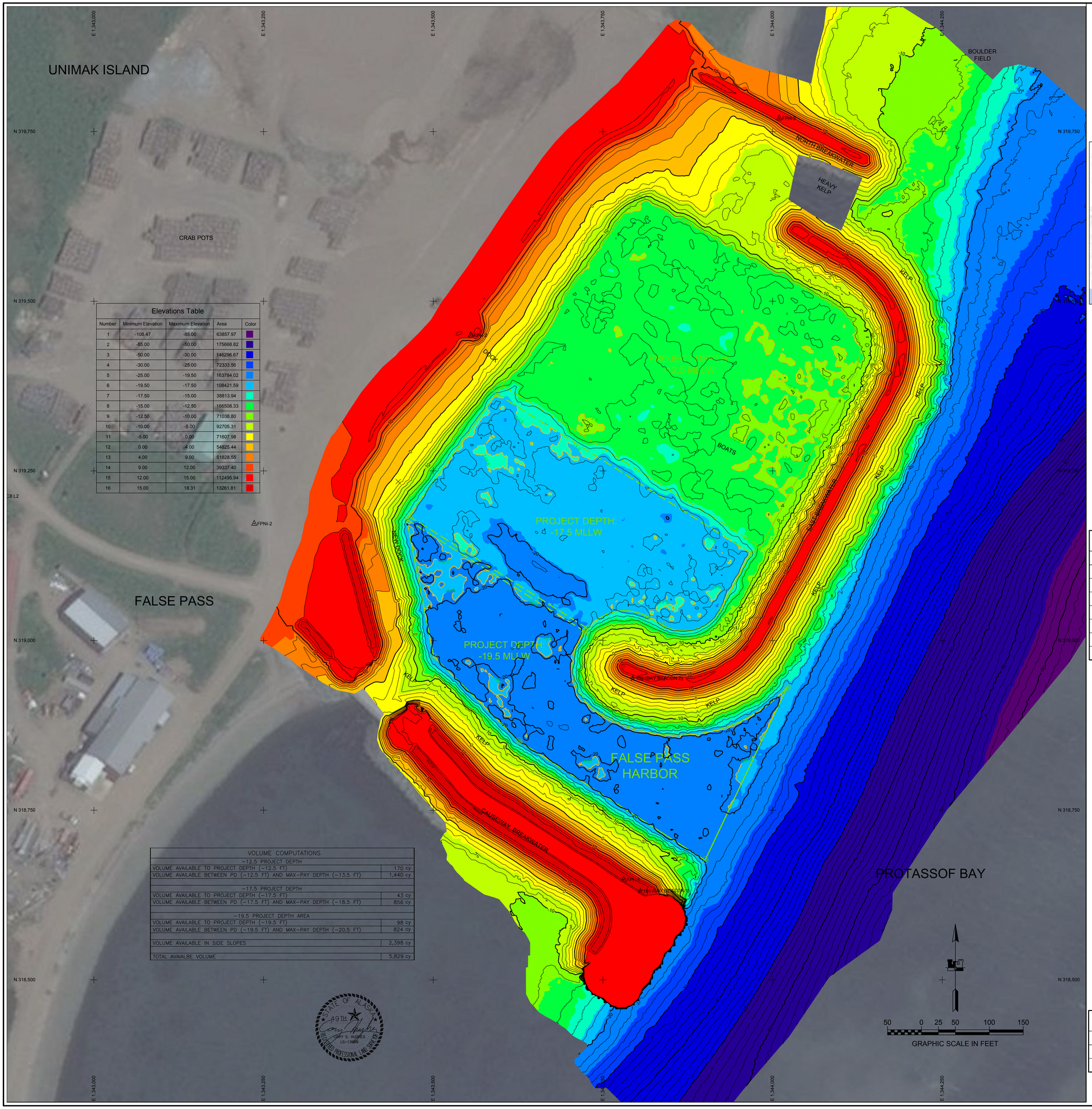
SURVEYED BY: HUGHES & ASSOCIATES		DATE: 17 October 2013
DRAWN BY: BTH	CHECKED BY: CSH	SURVEY NO.: 3133-13
APPROVED BY:		CONTRACT NO.: W911KB-10-D-0005
SCALE: 1" = 50'	PLOT DATE: 10/17/2013	CWIS or UPC & (P2) #'s: 10543
SIZE: ANSI E	FILE NAME: FALSE PASS 2013 PCS.DWG	

FALSE PASS, ALASKA
FALSE PASS HARBOR
PROJECT CONDITION SURVEY
AUGUST 12-16, 2013

SHEET IDENTIFICATION

V-101

Sheet 1 of 2



Elevations Table

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-108.47	-85.00	63857.97	
2	-85.00	-50.00	175668.82	
3	-50.00	-30.00	146296.67	
4	-30.00	-25.00	72333.56	
5	-25.00	-19.50	163784.02	
6	-19.50	-17.50	108421.59	
7	-17.50	-15.00	38813.94	
8	-15.00	-12.50	166508.33	
9	-12.50	-10.00	71038.80	
10	-10.00	-5.00	92705.31	
11	-5.00	0.00	71607.98	
12	0.00	4.00	54825.44	
13	4.00	9.00	51828.55	
14	9.00	12.00	39337.40	
15	12.00	15.00	112495.94	
16	15.00	18.31	13261.81	

VOLUME COMPUTATIONS

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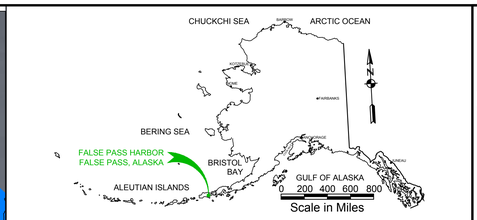
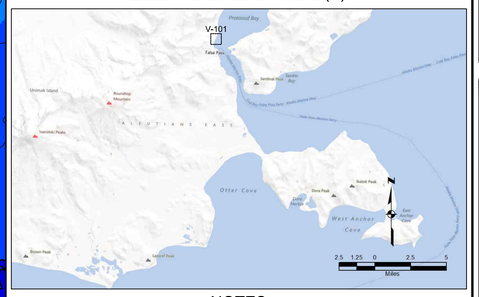
STATE OF ALASKA 49TH CORY S. HUGHES LS-13069 PROFESSIONAL LAND SURVEYOR



LOCATION/VICINITY MAP(S)



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US Army Corps of Engineers
ALASKA DISTRICT

CONTRACT NO.
CONTRACTOR
CITY STATE
Recommended: Date:
Approved:
CHIEF, PROJECT DELIVERY SECTION
NAME CONTRACTOR

DIVISION	DATE	DESCRIPTION	BY	APPROV

DIVISION	DATE	DESCRIPTION	BY	APPROV	REVISION	DATE	DESCRIPTION	BY	APPROV

SURVEYED BY: HUGHES & ASSOCIATES
DRAWN BY: CSH
CHECKED BY: CSH
APPROVED BY:
DATE: 17 October 2013
SURVEY NO: H-13-13
CONTRACT NO.: W911KB-10-D-0005
CORS # UPC & (PZ) #'s: CORS
PLOT DATE: 10/17/2013
FILE NAME: FALSE PASS 2013 POS.DWG
SCALE: 1"=400'
SIZE: 36X48
NOTE:

U.S. ARMY CORPS OF ENGINEERS
ALASKA DISTRICT
P.O. BOX 6898
JBER, ALASKA 99506-0898

HUGHES & ASSOCIATES
ROBERTS & SHELL CORP.
WASILLA, AK 99654

FALSE PASS, ALASKA
FALSE PASS HARBOR
PROJECT CONDITION SURVEY
AUGUST 12-16, 2013

SHEET IDENTIFICATION
V-102
Sheet 2 of 2