

SURVEY CONTROL DATA				
*Horizontal Control Values Not Updated				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
AIL 2 1948	1,982,426.56	2,308,963.89	13.56	USCGS TRI STA SBC*
BRANDI 2005	1,982,773.36	2,310,956.67	10.37	3.25 INCH DOMED BC IN ROCK
BRIAN 2005	1,981,669.39	2,310,523.48	11.92	3.25 INCH DOMED BC IN ROCK
CORN 2 1948	1,981,343.50	2,310,559.54	9.89	USCGS TRI STA SBC
DRINK 2 1948	1,980,194.49	2,310,908.73	14.51	USCGS SBC
WHN-1 1997	1,985,058.30	2,309,223.94	10.62	USACE DOMED BC
WHN-2 1997	1,980,858.74	2,310,036.80	14.56	USACE DOMED BC
WHN-3 2001	1,983,773.87	2,310,359.18	11.98	3.25 INCH DOMED BC
WHN-4 2001	1,980,481.21	2,309,144.84	11.55	3.25 INCH DOMED BC*

NAVIGATION AIDS			
USCG NO.	NORTHING	EASTING	DESCRIPTION
25095	1,980,538.00	2,310,300.00	ROCK LIGHTED BUOY 13
25100	1,981,296.00	2,310,568.00	WHITESTONE POINT LIGHT 14
25105	1,982,270.00	2,309,856.00	CHANNEL BUOY 15
25110	1,982,821.00	2,309,733.00	CHANNEL LIGHTED BUOY 17
25115	1,983,736.00	2,309,569.00	WHITESTONE SANDSPIT BUOY 18
25120	1,984,530.00	2,309,500.40	CHANNEL RANGE FRONT LIGHT
25125	1,984,896.60	2,309,413.30	CHANNEL RANGE REAR LIGHT

PROJECT LIMITS		
CORNER#	NORTHING	EASTING
1	1,980,480.00	2,310,290.00
2	1,981,358.00	2,310,114.00
3	1,982,980.00	2,309,635.00
4	1,983,264.00	2,309,708.00
5	1,982,802.00	2,309,974.00
6	1,980,945.00	2,310,442.00
7	1,980,480.00	2,310,598.00
8	1,982,855.00	2,310,115.00
9	1,982,980.00	2,310,044.00

VOLUME COMPUTATIONS		
PROJECT DEPTH -24.0'		
AVAILABLE TO PROJECT DEPTH (-24.0')		337 cy
AVAILABLE BETWEEN PROJECT DEPTH (-10.0') AND MAX PAY DEPTH (-25.0')		266 cy
AVAILABLE ALONG SIDE SLOPES (3 : 1)		391 cy
TOTAL MATERIAL AVAILABLE		994 cy

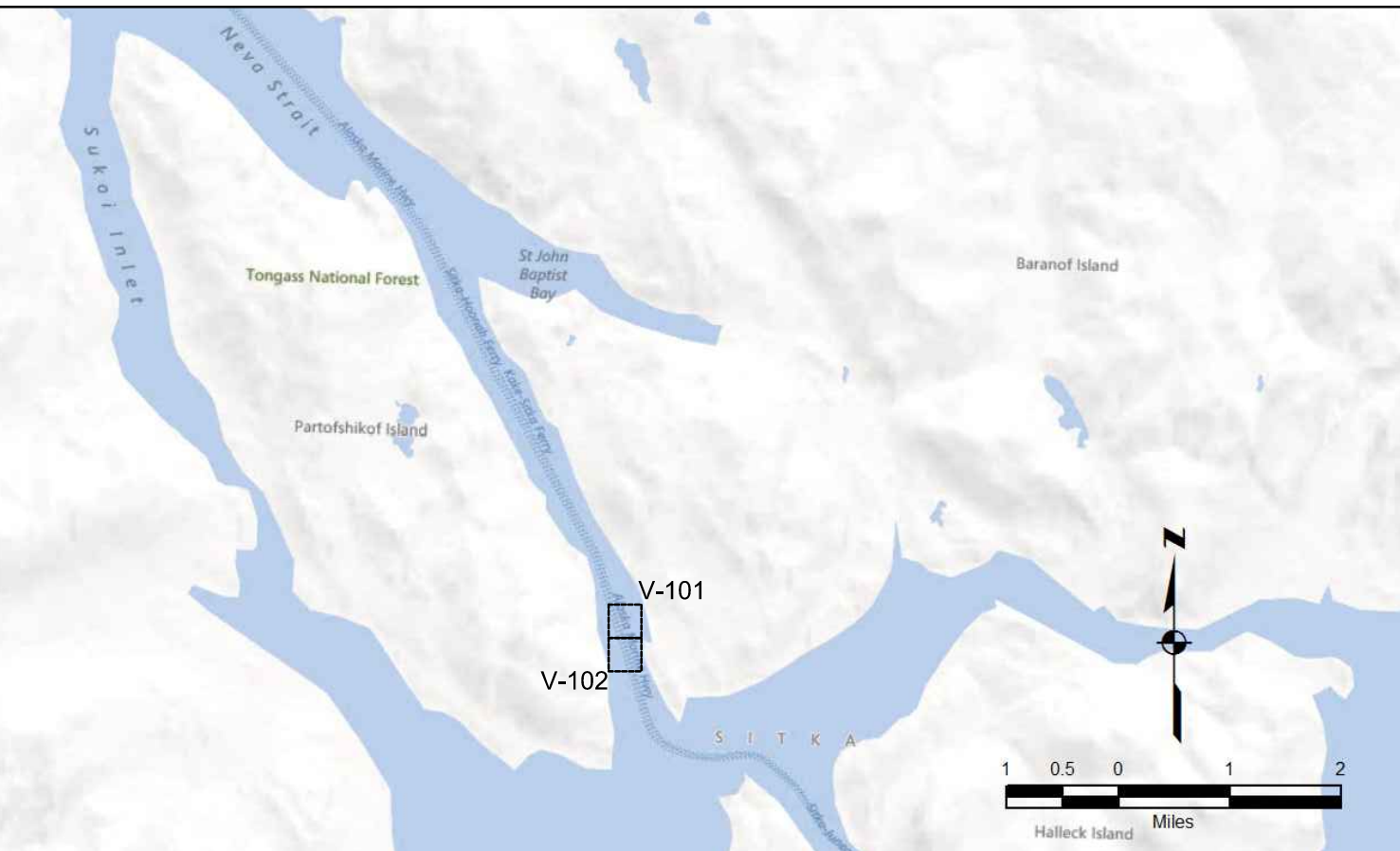
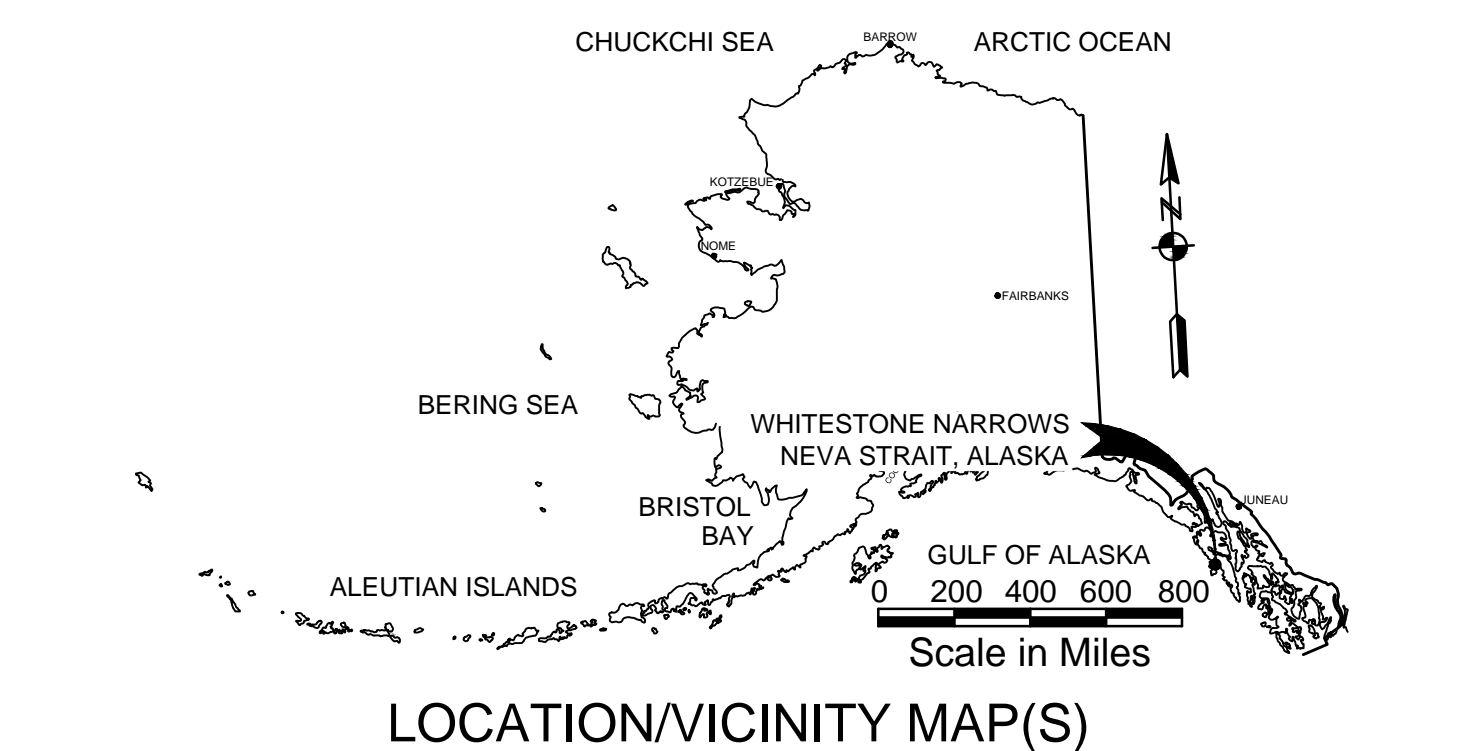
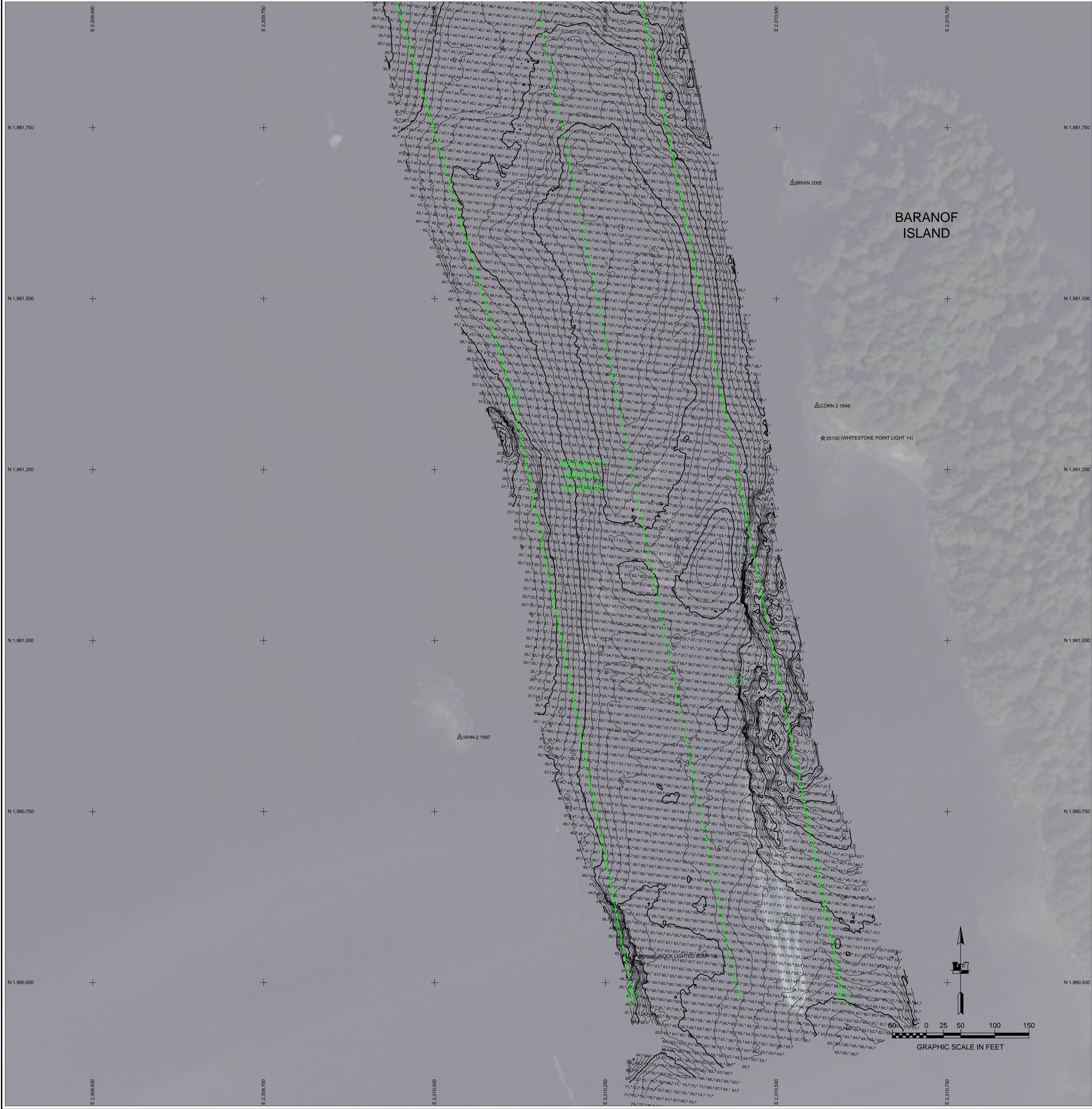
US Army Corps of Engineers
of Alaska District

CONTRACT NO.
DRAWING NO.
CITY
STATE
DATE
BY
DATE
DESCRIPTION

DATE: 2013
SURVEY NO.:
DRAWING NO.:
CHECKED BY:
APPROVED BY:
SCALE:
FILE NAME:
SIZE:
U.S. ARMY CORPS OF ENGINEERS
ALASKA DISTRICT
JBER, ALASKA 99506-0989
HUGHES & ASSOCIATES
ENGINEERS
WASILLA, AK 99584

NEVA STRAIT, ALASKA
WHITESTONE NARROWS
PROJECT CONDITION SURVEY
APRIL 26, 2013

SHEET
IDENTIFICATION
V-101
Sheet 1 of 4



SURVEY CONTROL DATA				
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BRAND 2005	1,982,773.36	2,310,956.67	10.37	3.25 INCH DOMED BC IN ROCK
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DRINK 2 1948	1,980,194.49	2,310,908.73	14.51	USCGS SBC
WHN-1 1997	1,985,058.30	2,309,223.94	10.62	USACE DOMED BC
WHN-2 1997	1,980,858.74	2,310,036.80	14.56	USACE DOMED BC
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PROJECT LIMITS		
CORNER#	NORTHING	EASTING
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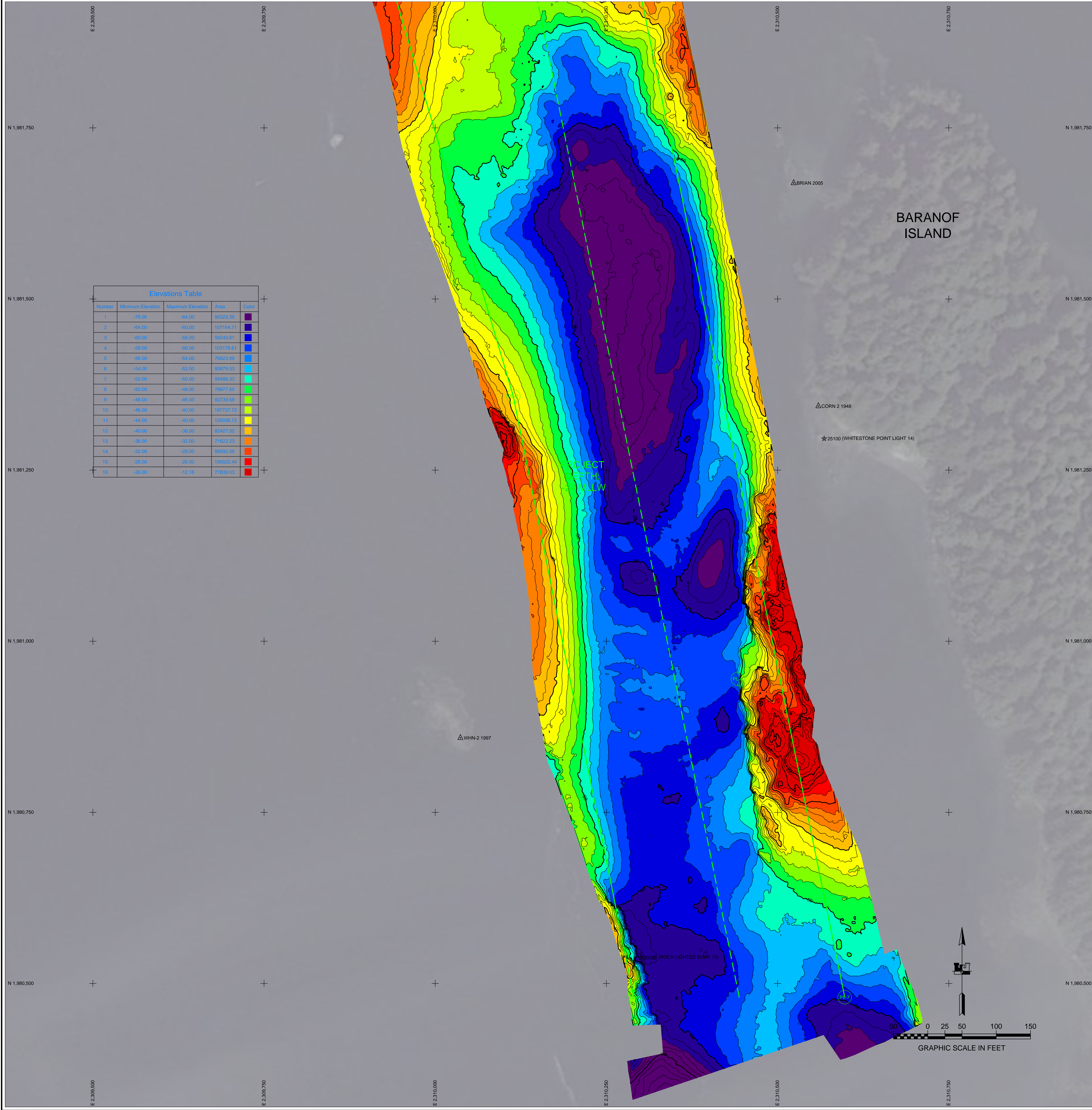
VOLUME COMPUTATIONS		
PROJECT DEPTH -24.0'		
AVAILABLE TO PROJECT DEPTH (-24.0')	337 CY	
AVAILABLE BETWEEN PROJECT DEPTH (-10.0') AND MAX PAY DEPTH (-25.0')	266 CY	
AVAILABLE ALONG SIDE SLOPES (3 : 1)	391 CY	
TOTAL MATERIAL AVAILABLE	994 CY	

US Army Corps of Engineers
of Engineers
ALASKA DISTRICT

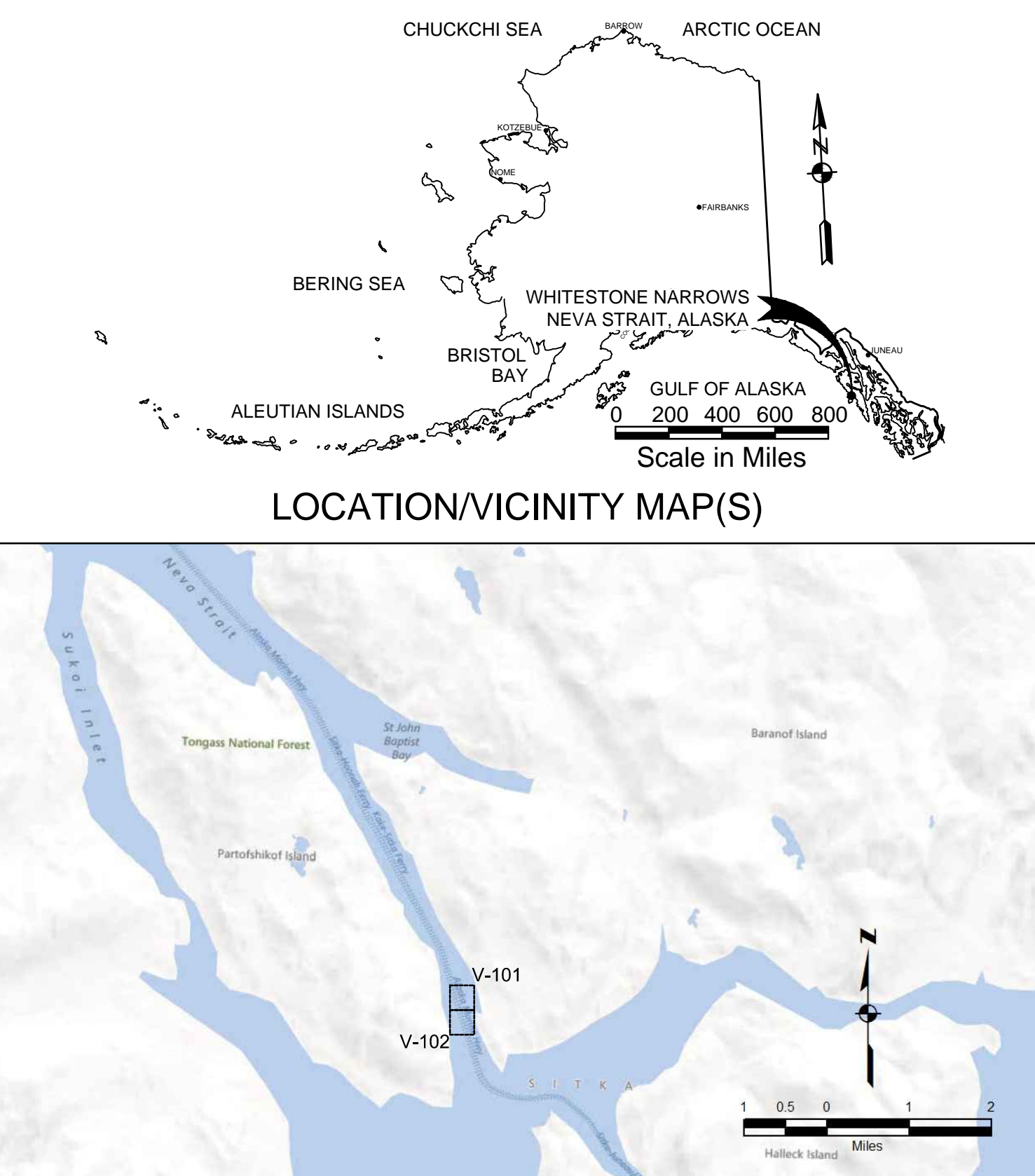
CONTRACT NO.
DRAWING NO.
CITY
STATE
APPROVED
DATE
BY
DATE
DESCRIPTION

DATE: 04/26/2013
SURVEY NO.: 00000
DRAWN BY: JBER, ALASKA 89506-0898
CHECKED BY: GHI
APPROVED BY: HUGHES & ASSOCIATES
ENGINEER
WASILLA, AK 99541

NEVA STRAIT, ALASKA
WHITESTONE NARROWS
PROJECT CONDITION SURVEY
APRIL 26, 2013
SHEET
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V-102
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Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-79.00	-64.00	95222.08	Dark Purple
2	-64.00	-60.00	107164.71	Dark Blue
3	-60.00	-58.00	84240.61	Blue
4	-58.00	-56.00	103175.61	Light Blue
5	-56.00	-54.00	76823.98	Very Light Blue
6	-54.00	-52.00	85679.53	Cyan
7	-52.00	-50.00	95486.33	Light Green
8	-50.00	-48.00	76677.50	Green
9	-48.00	-46.00	92739.58	Light Green
10	-46.00	-40.00	197727.72	Yellow
11	-44.00	-40.00	100056.72	Yellow
12	-40.00	-36.00	82427.32	Orange
13	-36.00	-32.00	71622.23	Dark Orange
14	-32.00	-28.00	98992.05	Red-Orange
15	-28.00	-26.00	106522.44	Red
16	-26.00	-12.16	77639.03	Dark Red



- ### NOTES
- HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, 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: "GUSTAVUS 5 CORS ARP" (GUS5 - PID DK6229) AS N 58 25 02.941 W 135 41 50.351 (GEOGRAPHIC 1983) AND "JUNEAU WAAS 1 CORS ARP" (JNU1 - PID DF4867) AS N 58 21 45.262 W 134 35 08.456 (GEOGRAPHIC 1983) AND "BIORKA ISLAND 5 CORS ARP" (BIIS5 - PID DK6423) N 56 51 16.164 W 135 32 21.388 (GEOGRAPHIC 1983). RESULTANT COORDINATES AT PRIMARY HARBOR CONTROL HOLDING ALUMINUM CAP "WHN-1 1997" AS N 1,985,058.30, E 2,309,223.94 AND ALUMINUM CAP "WHN-2 1997" AS N 1,980,858.74, E 2,310,036.80.
 - VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0), BASED ON THE NOAA NOS TIDAL BENCH MARK LIST: "945 1741 WHITESTONE NARROWS, NEVA STRAIT, ALASKA". THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOS TIDAL BENCHMARK "CORN 2" AS 9.89' AND NOS TIDAL BENCHMARK "DRINK 2" AS 14.51'. 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.
 - VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 ELEVATIONS HOLDING NOAA NOS TIDAL BENCHMARK "CORN 2 1948" (PID UV936) AS 9.35'.
 - SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
 - THE EXISTING PROJECT CONSISTS OF WHITESTONE NARROWS LOCATED IN NEVA STRAIT, ALASKA.
 - THE SURVEY WAS CONDUCTED ON APRIL 26, 2013. HYDROGRAPHIC SOUNDING DATA WAS COLLECTED USING AN ODOM ES3 MULTI-BEAM ECHOSOUNDER (200KHZ, 120-DEGREE SWATH-WIDTH WITH 120, 0.75 DEGREE BEAMS). POSITIONING AND VESSEL ATTITUDE WERE PROVIDED IN REAL TIME USING A TRIMBLE R6 RTK GPS RECEIVER OPERATING ON KINEMATIC CORRECTORS BROADCAST FROM A TRIMBLE R6 RTK BASE RECEIVER SET AT CONTROL STATION, "WHN-2 1997". 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.
 - THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
 - MAP SOUNDINGS ARE BINNED AT 1/2 FEET AND ARE NEAREST CELL CENTER VALUE. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE AVERAGE CELL VALUE.

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US Army Corps of Engineers
ALASKA DISTRICT

CONTRACT NO. _____
CONTRACTOR _____
CITY _____ STATE _____
Recommended _____ Approved _____
Drawn _____ Checked _____
Scale _____ Date _____

DATE: 2013
SURVEY NO.: 2013-01
DRAWN BY: JBER, ALASKA 8906-0898
CHECKED BY: JBER, ALASKA 8906-0898
APPROVED BY: JBER, ALASKA 8906-0898
FILE NAME: WHITESTONE NARROWS 2013.PCS
FILE SIZE: 1,985,058.30, 2,309,223.94, 10.62, 14.56, 11.98, 11.55, 3.25 INCH DOMED BC*

NEVA STRAIT, ALASKA
WHITESTONE NARROWS
PROJECT CONDITION SURVEY
APRIL 26, 2013

SHEET IDENTIFICATION
V-104
Sheet 4 of 4