

NOTES

1. 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 DATUM. VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW) +0.0, (DJD 703572) PORTKALEENAKA2005 CORRS ARP" (DJD 66965) AND "LEVEL ISLAND 5 CORRS ARP" (DJD 30363).
2. LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83, IN US SURVEY FEET HOLDING "1349 ± 2006" AS 1,770,667.32 ± 2,672,034.38 AND "D-3 2001" AS 1,753,633.73 ± 7,268,681.177.
3. VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW) +0.0, BASED ON THE NOAANS TIDAL BENCHMARK SLT "9451349 THE SUMMIT, N.W. SUMMIT ISLAND, ALASKA" PUBLISHED 09/17/2008. THIS TIDAL BENCHMARK IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAAUSNGS TIDAL BENCHMARK 1349 2006 AS 1,770,667.32 ± 2,672,034.38 (DJD 66965).
4. VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 (GEOID12B) ELEVATIONS HOLDING NOAAUSNGS TIDAL BENCHMARK "1349 ± 2006" (DJD 66728/NAVD83120) AS 13,337.
5. SOUNDINGS ARE IN FEET AND ARE MINUS USLEIGH INDICATED.
6. BATHYMETRY WAS COLLECTED MAY 2, 2018. SOUNDINGS WERE COLLECTED USING AN R2SONIC 202 MULTIBeam ECHOSOUNDER OPERATING AT 200kHz. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN ML BASE X-SOUND VELOCITY PROBE. POSITIONING AND VESSEL ORIENTATION WAS MEASURED USING QINSY 4.1 AND PROCESSED USING POSMAN 9.5.5. RECEIVING RTK CORRECTIONS FROM A TRIMBLE SP885S GPS RECEIVER SET AT CONTROL STATION "1349 ± 2006" SURVEY DATA WAS USED TO CORRECT THE DATA. THE DATA WAS PROCESSED USING QINSY 4.1 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING STATIC GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING STATIC GNSS AND DIFFERENTIAL LEVELING EQUIPMENT AND TECHNIQUES.
7. TERRESTRIAL LASER SCANNING DATA COLLECTED MAY 2, 2018. DATA WAS COLLECTED USING A RIEGL VZ-400 LASER SCANNER. MOBILE SCANNING WAS COLLECTED AND PROCESSED USING QINSY 4.1 AND POSMAN 9.5.5. VESSEL ORIENTATION WAS MEASURED USING AN APPLICAP POSRV OCEANMASTER V5 SYSTEM.
8. THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
9. MAP SOUNDINGS ARE BINNED AT 24 FEET AND ARE SHOAL-BASED. CONTOURS ARE BASED ON 12 FEET BINNED SHOAL-BASED SOUNDINGS. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE MEAN VALUE.

PROJECT CENTERLINE			PROJECT CENTERLINE		
CORNER#	NORTHING	EASTING	CORNER#	NORTHING	EASTING
1	1,772,720.44	2,671,971.84	6	1,767,339.84	2,672,364.76
2	1,771,463.35	2,672,190.30	7	1,766,450.98	2,672,230.21
3	1,770,714.97	2,672,599.36	8	1,765,022.34	2,672,948.20
4	1,769,783.12	2,672,806.62	9	1,764,787.46	2,673,644.94
5	1,768,148.33	2,672,691.37			

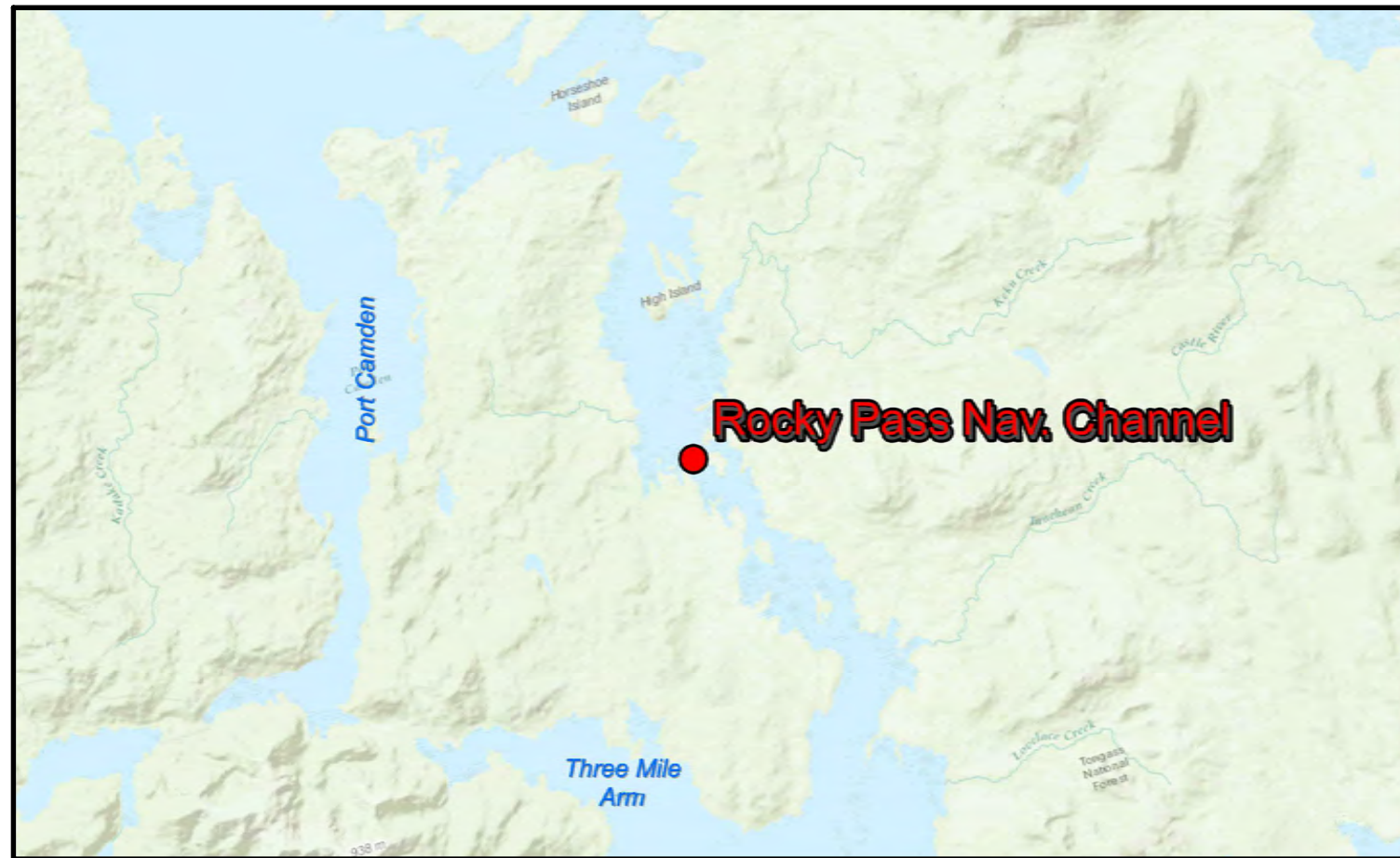
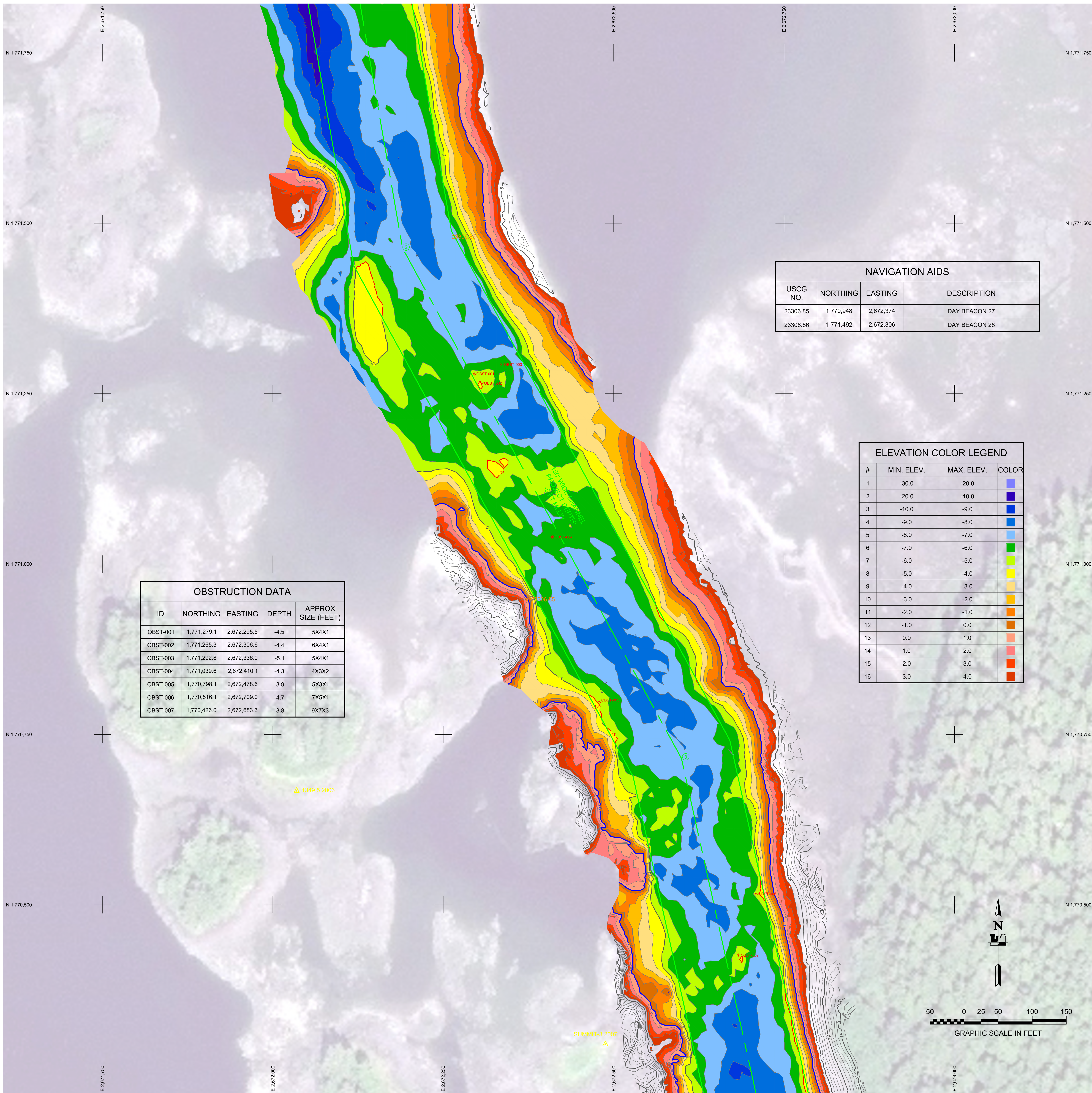
SURVEY CONTROL DATA				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
1349 S 2006	1,770,667.32	2,672,034.89	16.61	NOAA/NOS BRASS CAP
DE-3 2001	1,753,633.79	2,681,681.77	18.61	BRASS CAP
RKY-2 1973 2007	1,766,666.50	2,671,823.35	19.31	USACE SBC
SUMMIT-2 2001	1,772,192.66	2,671,484.32	16.72	3.25 IN DBC
SUMMIT-3 2007	1,770,295.41	2,672,487.71	18.14	3.25 IN DBC
YOU 1927	1,764,322.52	2,673,005.54	16.74	3.25 IN USCGS SBC

VOLUME COMPUTATIONS		
AREA A: 200' WIDE CHANNEL	MLLW=0	CU. YD.
AVAILABLE TO PROJECT DEPTH (PD)	-5.0	404
AVAILABLE TO MAX PAY DEPTH (MP)	-6.0	2,704
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	297
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)		3,001



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

Gregory W. Gibson (317)



- NOTES**
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 - LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83, IN US SURVEY FEET HOLDING "1349 5 2006" AS N 1,770,667.32; E 2,672,034.89 AND "DE-3 2001" AS N 1,753,633.79; E 2,681,681.77.
 - VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW = 0.0'), BASED ON THE NOAA/NOS TIDAL BENCHMARK LIST: "9451349 THE SUMMIT, N.W. SUMMIT ISLAND, ALASKA" PUBLISHED 09/17/2006. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/USCGS TIDAL BENCHMARK "945 1349 TIDAL 1" (PID BBG628/VM18116) AS 18.12'.
 - VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 (GEOID12B) ELEVATIONS HOLDING NOAA/USCGS TIDAL BENCHMARK "1349 5 2006" (PID BBF208/VM18120) AS 13.37'.
 - SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
 - BATHYMETRY WAS COLLECTED MAY 2, 2018. SOUNDINGS WERE COLLECTED USING AN R2SONIC 2022 MULTIBEAM ECHOSOUNDER OPERATING AT 200KHZ. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN AML BASE X SOUND VELOCITY PROBE. POSITIONING AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POSMV OCEANMASTER VS SYSTEM RECEIVING RTK CORRECTIONS FROM A TRIMBLE SPS855 GPS RECEIVER SET AT CONTROL STATION "1349 5 2006" SURVEY DATA WAS COLLECTED USING QINSY 8.1 AND PROCESSED USING OIMERA 1.5.1 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING STATIC GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING STATIC GNSS AND DIFFERENTIAL LEVELING EQUIPMENT AND TECHNIQUES.
 - TERRESTRIAL LASER SCANNING DATA COLLECTED MAY 2, 2018. DATA WAS COLLECTED USING A RIEGL VZ-400 LASER SCANNER. MOBILE SCANNING WAS COLLECTED AND PROCESSED USING QINSY 8.1 SOFTWARE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POSMV OCEANMASTER VS SYSTEM.
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VOLUME COMPUTATIONS		
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THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN NSPS/THSOA CERTIFIED HYDROGRAPHER

Gregory W. Gibson (317)

KEKU STRAIT, ALASKA

072762 - ROCKY PASS: THE SUMMIT

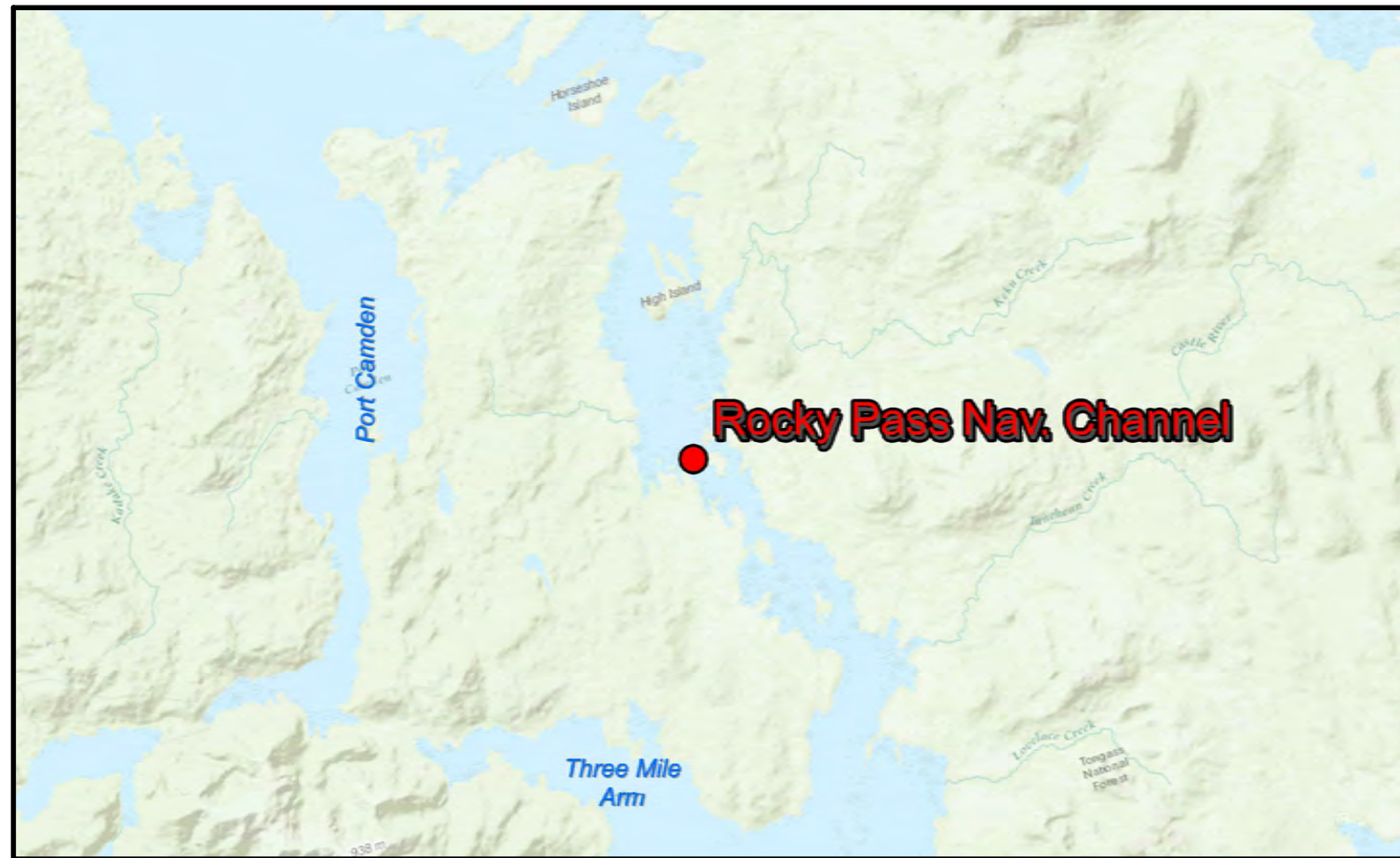
PROJECT CONDITION SURVEY

















APRIL 30 - MAY 3, 2018

SHEET IDENTIFICATION

1-ROC-92-07-03

Sheet 9 of 13




ELEVATION COLOR LEGEND			
#	MIN. ELEV.	MAX. ELEV.	COLOR
1	-30.0	-20.0	
2	-20.0	-10.0	
3	-10.0	-9.0	
4	-9.0	-8.0	
5	-8.0	-7.0	
6	-7.0	-6.0	
7	-6.0	-5.0	
8	-5.0	-4.0	
9	-4.0	-3.0	
10	-3.0	-2.0	
11	-2.0	-1.0	
12	-1.0	0.0	
13	0.0	1.0	
14	1.0	2.0	
15	2.0	3.0	
16	3.0	4.0	

VOLUME COMPUTATIONS		
AREA A: 200' WIDE CHANNEL	MLLW=0	CU. YD.
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A circular professional seal for Gregory W. Gibson, a Registered Professional Land Surveyor in the State of Alaska. The seal features a five-pointed star in the center, with the text "49TH" above it and "STATE OF ALASKA" around the top arc. Below the star, the name "GREGORY W. GIBSON" and the number "No. LS14824" are printed. The outer ring of the seal contains the text "REGISTERED PROFESSIONAL LAND SURVEYOR". The seal is signed with a cursive signature across the middle.

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


Gregory W. Gibson (317)



US Army Corps
of Engineers
ALASKA DISTRICT

CONTRACT NO. W91N8-14-D-001318F0049	
CONTRACTOR ETRAC INC.	
CITY WASILLA	STATE ALASKA
Recommended: MICHAEL E. MUELLER PRIME CONTRACTOR	Approved: THOMAS A. SLOAN CHIEF GEOMATICS SECTION
Date:	06/26/2018

[illegible]


 U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT P.O. BOX 6898 JBER, ALASKA 99506-9898	SURVEYED BY: _____ DATE: _____	
	DRAWN BY: _____ DATE: _____	
CHECKED BY: _____ TAEHNJBCJWG	CONTRACT NO.: _____ WITHIN 14-101 3104049	
	PROJECT NO.: _____ 018	
APPROVED BY: _____ TAEHNJBCJWG	FILE NAME: _____ SIZE: 07/26/2010 DWG	

KEKU STRAIT, ALASKA
072762 - ROCKY PASS: THE SUMMIT
PROJECT CONDITION SURVEY
APRIL 30 - MAY 3, 2018

SHEET
IDENTIFICATION

1-ROC-92-07-03

Sheet 11 of 13



US Army Corps of Engineers
ALASKA DISTRICT

CONTRACT NO. W9118B-14-0-0131SF040

CONTRACTOR ETRAC INC.

CITY WASILLA

STATE ALASKA

Recommended: **Approved:**

THOMAS A. MEHLER **THOMAS A. MEHLER**

CHIEF ENGINEERING SECTION **CHIEF ENGINEERING SECTION**

CONTRACT NO. W9118B-14-0-0131SF040

CONTRACTOR ETRAC INC.

CITY WASILLA

STATE ALASKA

Recommended: **Approved:**

THOMAS A. MEHLER **THOMAS A. MEHLER**

CHIEF ENGINEERING SECTION **CHIEF ENGINEERING SECTION**

CONTRACT NO. W9118B-14-0-0131SF040

CONTRACTOR ETRAC INC.

CITY WASILLA

STATE ALASKA

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