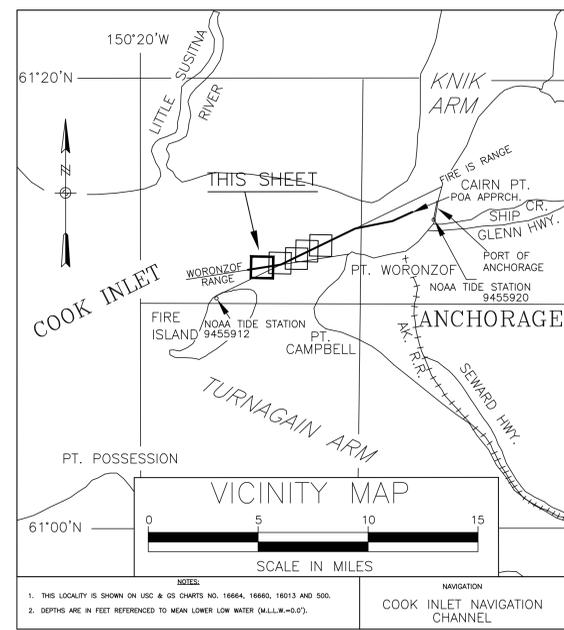


Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-95	-75	Dark Purple
2	-75	-65	Purple
3	-65	-55	Dark Blue
4	-55	-45	Blue
5	-45	-44	Light Blue
6	-44	-43	Light Cyan
7	-43	-42	Cyan
8	-42	-41	Teal
9	-41	-40	Green
10	-40	-39	Light Green
11	-39	-38	Yellow-Green
12	-38	-37	Yellow
13	-37	-36	Orange
14	-36	-35	Light Orange
15	-35	-30	Red-Orange
16	-30	-20	Red
17	-20	0	Dark Red



- NOTES**
- HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 IN U.S. SURVEY FEET HOLDING USACE "TERRA 11" AS N 2,644,969.84, E 1,660,159.24.
 - VERTICAL CONTROL: ELEVATIONS ARE MEAN LOWER LOW WATER (MLLW) TIDAL DATUM EPOCH 1983-2001, EXPRESSED IN U.S. SURVEY FEET. PRELIMINARY ELEVATIONS WERE ACQUIRED IN REFERENCE TO A SINGLE BENCHMARK HOLDING USACE "TERRA 11" AS 80.48 FEET MLLW. FINAL DATA WERE ADJUSTED BASED ON THE C.I.N.C. CUSTOM MLLW PLANE DETERMINED FROM THE DOWL C.I.N.C. CONTROL SURVEY CONDUCTED IN FEBRUARY, 2013.
 - SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
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DREDGE LIMITS - AREA C			CINIC DISPOSAL SITE		
Corner #	Northing	Easting	Corner #	Northing	Easting
DL-24	2628708.65	1619570.25	DS-5	2626323.49	1614048.61
DL-25	2627809.70	1620045.97	DS-6	2626323.49	1616673.28
DL-28	2632462.12	1628828.90	DS-7	2624354.99	1616673.28
DL-29	2633360.88	1628352.82	DS-8	2624354.99	1614619.08
			DS-9	2624587.68	1614048.61

DREDGE LIMITS - AREA D			CINIC SURVEY LIMITS		
Corner #	Northing	Easting	Corner #	Northing	Easting
DL-25	2627809.70	1620045.97	SL-16	2628562.99	1619081.63
DL-26	2627635.79	1620138.09	SL-17	2627313.36	1619743.03
DL-27	2632288.21	1628921.02	SL-18	2632433.89	1629409.67
DL-28	2632462.12	1628828.90	SL-19	2633683.29	1628747.85
			SL-20	2626423.49	1613948.61
			SL-21	2624254.99	1613948.61
			SL-22	2624254.99	1616773.28
			SL-23	2626423.49	1616773.28

CONTROL DATA				
POINT ID	NORTHING	EASTING	ELEV. (MLLW)	DESCRIPTION
BM 12 1974	2,620,563.82	1,604,566.35	27.63	Brass Cap
BM 5934 F	2,655,203.73	1,655,049.51	36.48	Brass Cap
CRAIG	2,642,635.95	1,661,029.47	44.95	Brass Cap
ETRAC-1	2,646,395.57	1,660,814.72	38.34	Brass Cap
ETRAC-2	2,644,443.04	1,660,120.66	36.38	Brass Cap
MIKE	2,645,987.73	1,661,875.48	48.67	Brass Cap
NORTH END	2,646,649.84	1,660,584.80	41.56	USACE SBC 1978
PORT 1989	2,639,934.29	1,656,925.43	39.55	Almon
PORT MAC	2,655,563.46	1,654,968.22	41.51	Brass Cap
RIFE 1960	2,620,502.19	1,604,162.70	29.99	Brass Cap
SOUTH END	2,644,296.27	1,659,728.03	40.58	USACE SBC 1978
TERRA 11 ARP	2,644,989.84	1,660,159.24	80.48	Antenna Reference Point
TERRA 12 ARP	2,644,990.65	1,660,186.56	81.21	Antenna Reference Point
5920 THERMO 1 1988	2,642,784.70	1,660,183.87	37.32	Almon

VOLUME COMPUTATIONS	
DREDGE AREA C	CUBIC YARDS
VOLUME AVAILABLE ABOVE -38' MLLW	0
VOLUME AVAILABLE ABOVE -40' MLLW	26
VOLUME AVAILABLE ABOVE -43' MLLW	90,259
DREDGE AREA D	CUBIC YARDS
VOLUME AVAILABLE ABOVE -38' MLLW	6
VOLUME AVAILABLE ABOVE -40' MLLW	2,010
VOLUME AVAILABLE ABOVE -43' MLLW	65,303
DISPOSAL AREA	CUBIC YARDS
FILL VOLUME AVAILABLE BELOW -45' MLLW	1,574,285



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

David R. Neff CH(275)

BATHYMETRY



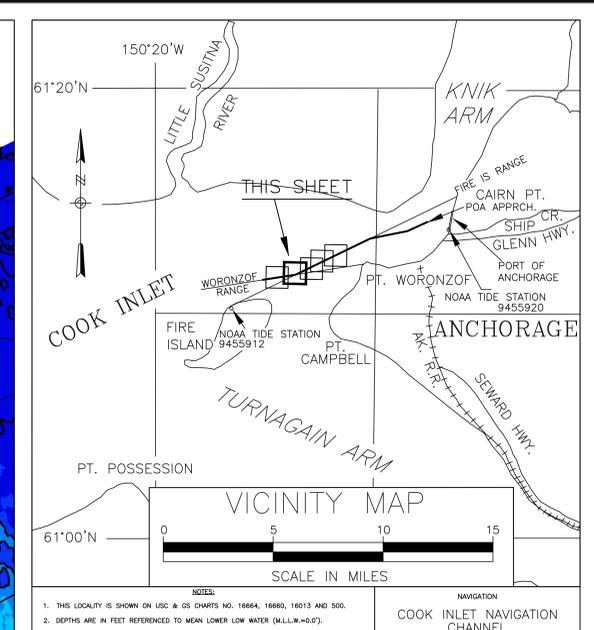
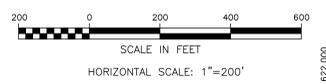
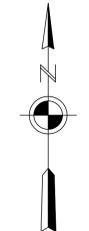
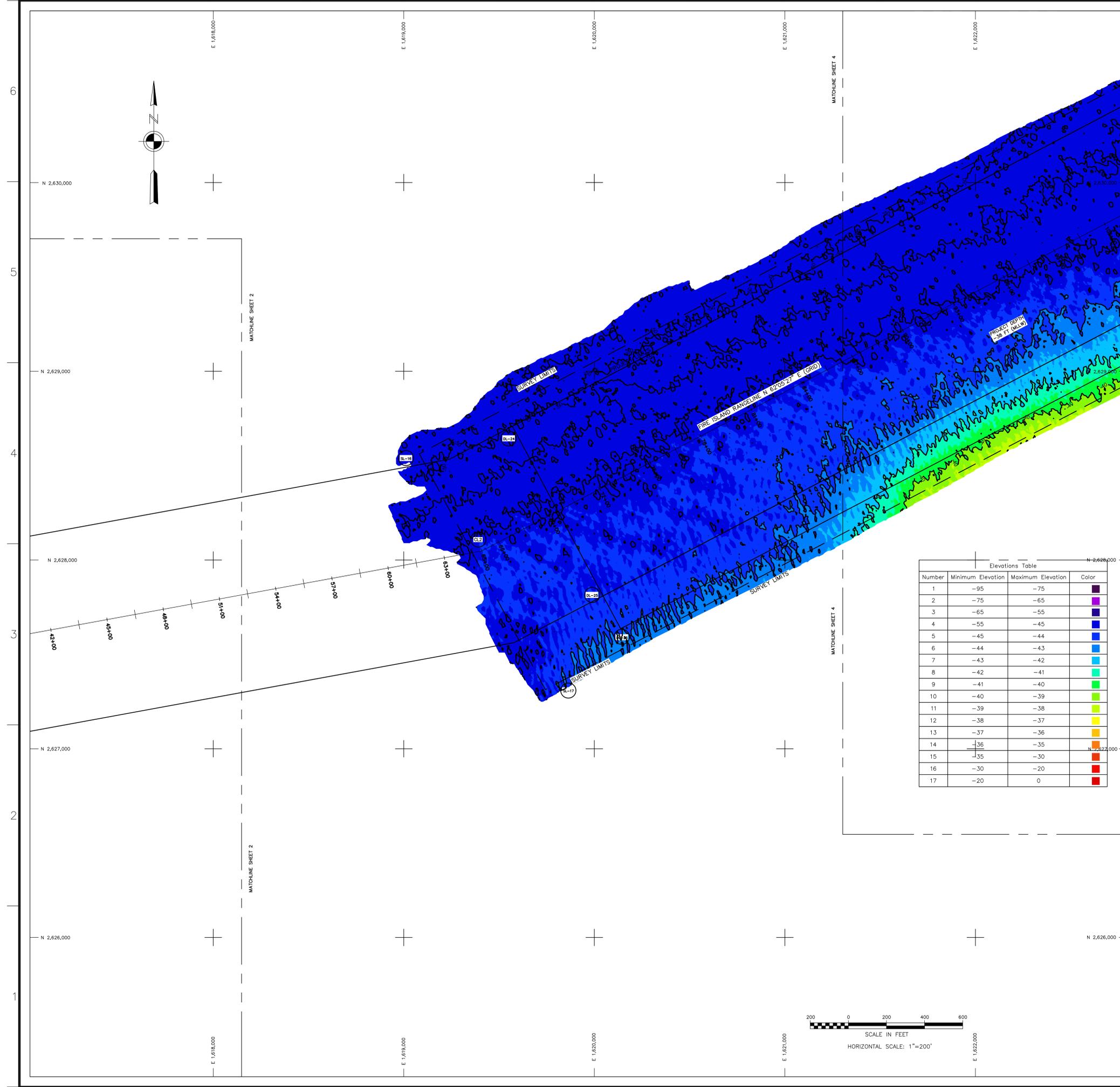
CONTRACT NO. W911KB-15-C-0006
 CONTRACTOR: MANSON CONSTRUCTION CO.
 CITY: SEATTLE STATE: WA
 Recommended: [Signature] Approved: [Signature]
 PRIME CONTRACTOR RESIDENT ENGINEER

Serial	Action	Description	Date	App'd

Date: 05/17/2016
 Dwg. Scale: 1" = 200'
 Plot. Scale: 1:1
 File: cookinlet.dwg
 Designer: M. TENCZA
 Drawn: M. TENCZA
 Reviewed: J. ANDERSON
 Checked: [Signature]
 Submitted: A. CHURCHILL
 USACE Survey No: 3552-16

COOK INLET, ALASKA
 COOK INLET NAVIGATION CHANNEL
 CONDITION SURVEY
 APRIL 15, 2016

Reference number:
V-107
 Sheet 7 of 11



- NOTES**
- HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 IN U.S. SURVEY FEET HOLDING USACE "TERRA 11" AS N 2,644,969.84, E 1,660,159.24.
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Elevations Table

Number	Minimum Elevation	Maximum Elevation	Color
1	-95	-75	
2	-75	-65	
3	-65	-55	
4	-55	-45	
5	-45	-44	
6	-44	-43	
7	-43	-42	
8	-42	-41	
9	-41	-40	
10	-40	-39	
11	-39	-38	
12	-38	-37	
13	-37	-36	
14	-36	-35	
15	-35	-30	
16	-30	-20	
17	-20	0	

DREDGE LIMITS - AREA C

Corner #	Northing	Easting
DL-24	2628708.65	1619570.25
DL-25	2627809.70	1620045.97
DL-28	2632462.12	1628828.90
DL-29	2633360.88	1628352.82

CINC DISPOSAL SITE

Corner #	Northing	Easting
DS-5	2626323.49	1614048.61
DS-6	2626323.49	1616673.28
DS-7	2624354.99	1616673.28
DS-8	2624354.99	1614619.08
DS-9	2624587.68	1614048.61

DREDGE LIMITS - AREA D

Corner #	Northing	Easting
DL-25	2627809.70	1620045.97
DL-26	2627635.79	1620138.09
DL-27	2632288.21	1628921.02
DL-28	2632462.12	1628828.90

CINC DISPOSAL LIMITS

Corner #	Northing	Easting
SL-16	2628562.99	1619081.63
SL-17	2627313.36	1619743.03
SL-18	2632433.89	1629409.67
SL-19	2633683.29	1628747.85
SL-20	2626423.49	1613948.61
SL-21	2624254.99	1613948.61
SL-22	2624254.99	1616773.28
SL-23	2626423.49	1616773.28

CONTROL DATA

POINT ID	NORTHING	EASTING	ELEV. (MLLW)	DESCRIPTION
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ETRAC-2	2,644,443.04	1,660,120.66	36.38	Brass Cap
MIKE	2,645,987.73	1,661,875.48	48.67	Brass Cap
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RIFE 1960	2,620,502.19	1,604,162.70	29.99	Brass Cap
SOUTH END	2,644,296.27	1,659,728.03	40.58	USACE SBC 1978
TERRA 11 ARP	2,644,969.84	1,660,159.24	80.48	Antenna Reference Point
TERRA 12 ARP	2,644,990.65	1,660,186.56	81.21	Antenna Reference Point
5920 THERMO 1 1988	2,642,784.70	1,660,183.87	37.32	Almon

VOLUME COMPUTATIONS

DREDGE AREA	CUBIC YARDS
DREDGE AREA C	0
VOLUME AVAILABLE ABOVE -38' MLLW	0
VOLUME AVAILABLE ABOVE -40' MLLW	26
VOLUME AVAILABLE ABOVE -43' MLLW	90,259
DREDGE AREA D	6
VOLUME AVAILABLE ABOVE -38' MLLW	6
VOLUME AVAILABLE ABOVE -40' MLLW	2,010
VOLUME AVAILABLE ABOVE -43' MLLW	65,303
DISPOSAL AREA	1,574,285
FILL VOLUME AVAILABLE BELOW -45' MLLW	1,574,285



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

David R. Neff CH(275)

BATHYMETRY

US ARMY CORPS OF ENGINEERS ALASKA DISTRICT

CONTRACT NO. W911KB-15-C-0006

CONTRACTOR: MANSON CONSTRUCTION CO.

CITY: SEATTLE STATE: WA

Recommended: [Signature] RESIDENT ENGINEER

Date: [Blank]

Item	Description	Date	App'd

Date: 05/17/2016

Dwg. Scale: 1" = 200'

Plot. Scale: 1:1

File: cookinletnavchannel.dwg

Branch: [Blank]

Submitted: A. CHURCHILL

Checked: [Blank]

Designed: M. TENCZA

Drawn: M. TENCZA

Reviewed: J. ANDERSON

Chief: [Blank]

USACE Survey No: 3552-16

COOK INLET, ALASKA

COOK INLET NAVIGATION CHANNEL

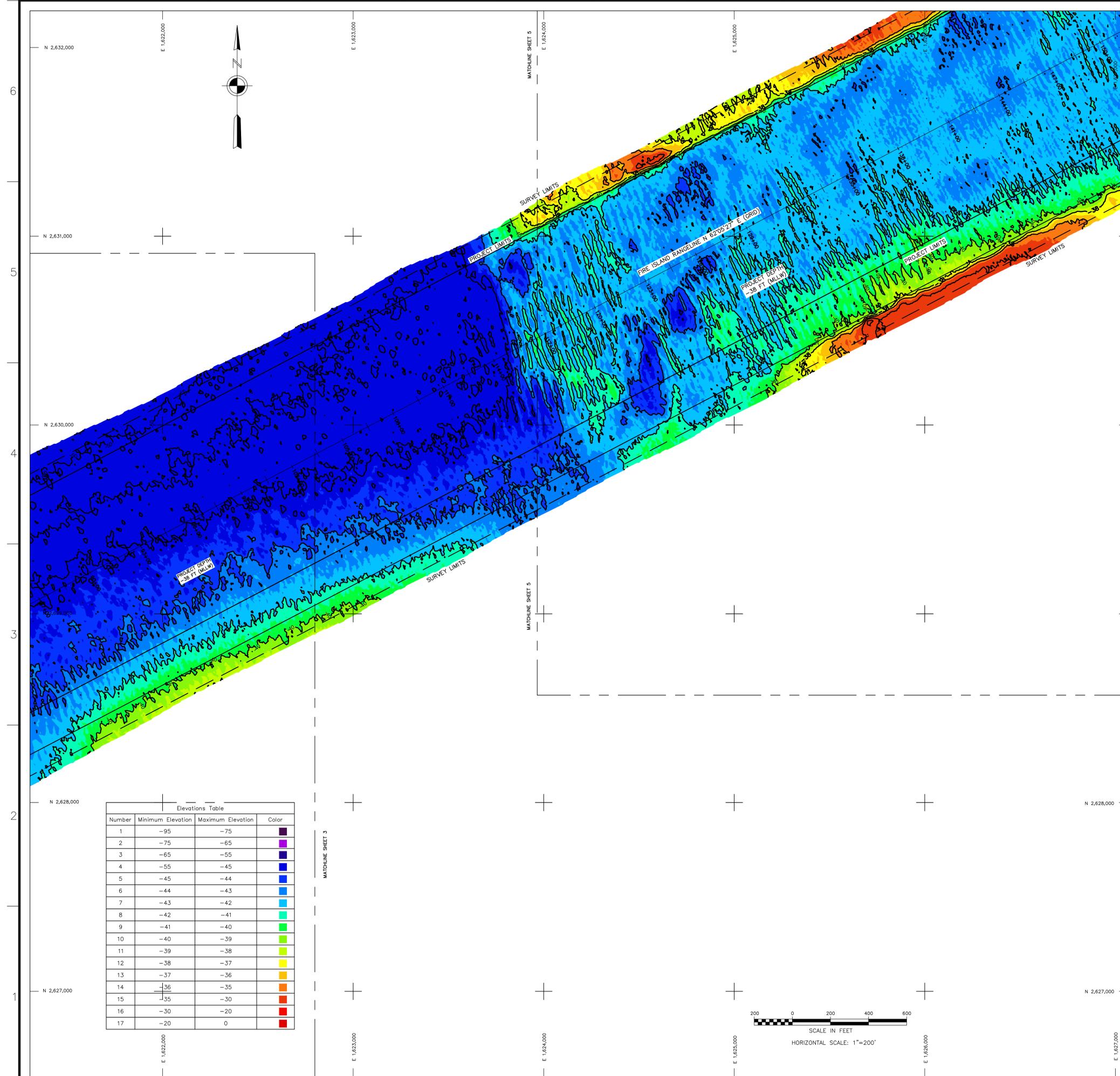
CONDITION SURVEY

APRIL 15, 2016

Reference number:

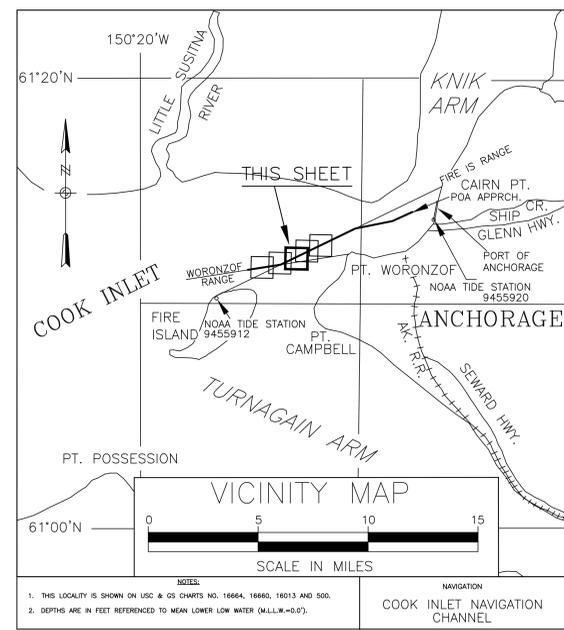
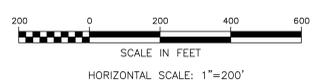
V-108

Sheet 8 of 11



Elevations Table

Number	Minimum Elevation	Maximum Elevation	Color
1	-95	-75	Dark Purple
2	-75	-65	Purple
3	-65	-55	Dark Blue
4	-55	-45	Blue
5	-45	-44	Light Blue
6	-44	-43	Cyan
7	-43	-42	Teal
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10	-40	-39	Yellow-Green
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13	-37	-36	Orange
14	-36	-35	Dark Orange
15	-35	-30	Red-Orange
16	-30	-20	Red
17	-20	0	Dark Red



- NOTES**
1. THIS LOCALITY IS SHOWN ON USC & GS CHARTS NO. 16664, 16660, 16013 AND 500.
 2. DEPTHS ARE IN FEET REFERENCED TO MEAN LOWER LOW WATER (MLLW=0.0).
 3. SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
 4. THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF SURVEY.
 5. SURVEY WAS CONDUCTED ON APRIL 15, 2016, BY ETRAC INC. SOUNDINGS WERE COLLECTED USING AN R2SONIC 2024 MULTIBEAM DEPTH SOUNDER (200KHZ, 120-DEGREE SWATH-WIDTH WITH 246, 0.5 DEGREE BEAMS). SOUND VELOCITY PROFILES WERE MEASURED USING AN AML BASE X SVP. SOUND VELOCITY WAS MEASURED IN REAL TIME AT THE SOUNDER HEAD USING A VALEPORT MINISVS.
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Corner #	Northing	Easting
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Corner #	Northing	Easting
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VOLUME COMPUTATIONS

DREDGE AREA C	CUBIC YARDS
VOLUME AVAILABLE ABOVE -38' MLLW	0
VOLUME AVAILABLE ABOVE -40' MLLW	26
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BATHYMETRY



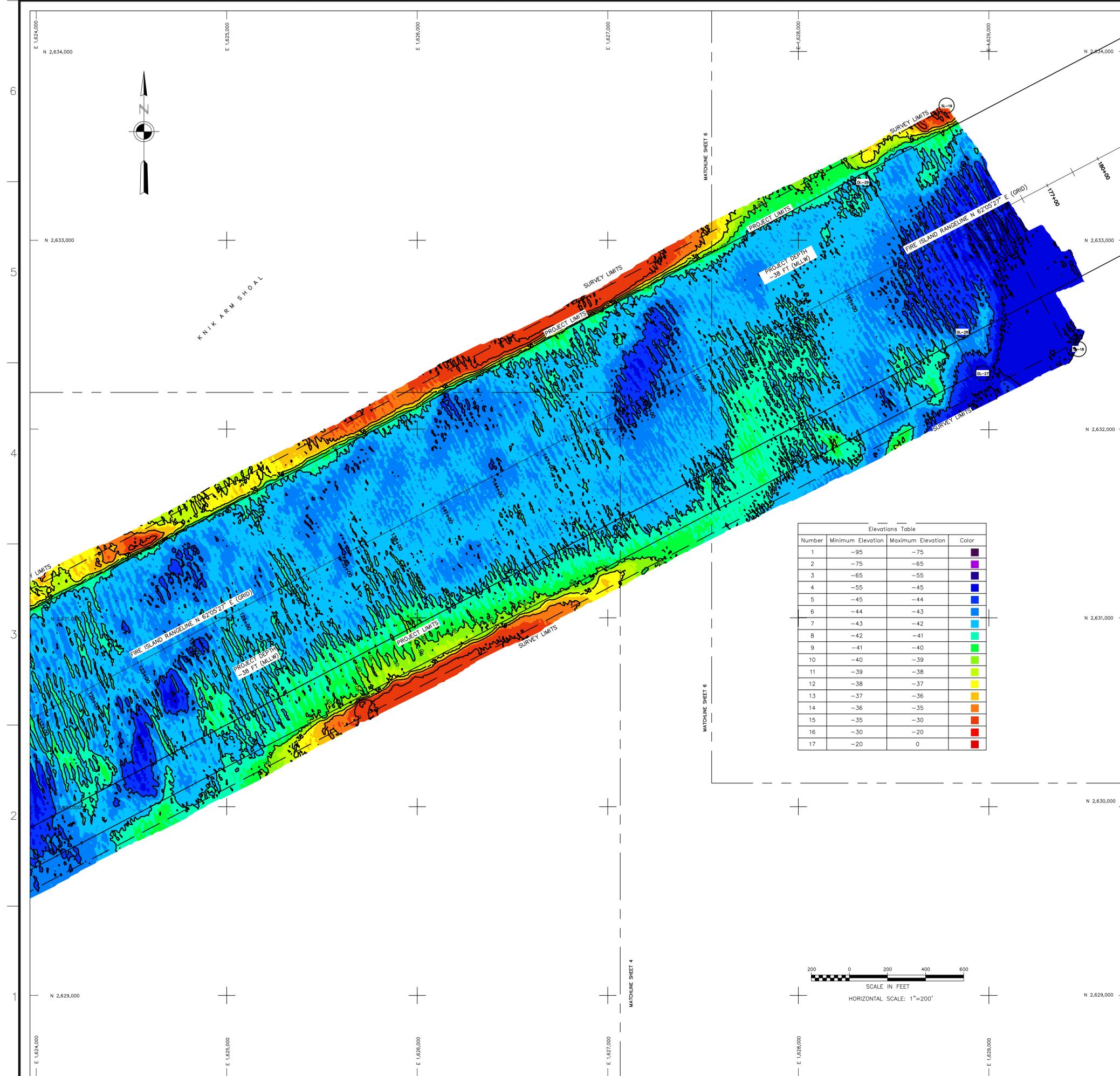
CONTRACT NO. W911KB-15-C-0006
 CONTRACTOR: MANSON CONSTRUCTION CO.
 CITY: SEATTLE STATE: WA
 Recommended: [Signature] Approved: [Signature]
 PRIME CONTRACTOR RESIDENT ENGINEER

Serial	Action	Description	Date	App'd

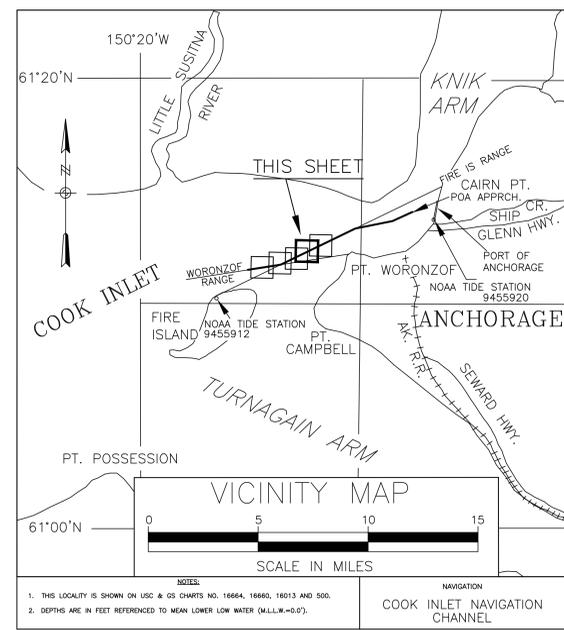
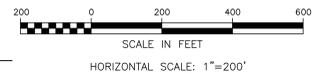
Date: 05/17/2016
 Dwg. Scale: 1" = 200'
 Plot Scale: 1:1
 File: cookinletnavchannel.dwg
 Branch: [Blank]
 Designer: M. TENCZA
 Drawn: M. TENCZA
 Reviewed: J. ANDERSON
 Checked: [Blank]
 Submitted: A. CHURCHILL
 Checked: [Blank]
 USACE Survey No: 3552-16

COOK INLET, ALASKA
 COOK INLET NAVIGATION CHANNEL
 CONDITION SURVEY
 APRIL 15, 2016

Reference number:
V-109
 Sheet 9 of 11



Elevations Table			
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9	-41	-40	Green
10	-40	-39	Light Green
11	-39	-38	Yellow-Green
12	-38	-37	Yellow
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16	-30	-20	Red
17	-20	0	Dark Red



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 - MAP SOUNDINGS ARE BINNED AT 50 FEET AND ARE MEAN VALUE. CONTOURS AND COLOR ARE BASED ON 10 FEET BINNED MEAN VALUE SOUNDINGS. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE MEAN VALUE SOUNDINGS.

DREDGE LIMITS - AREA C			CINC DISPOSAL SITE		
Corner #	Northing	Eastng	Corner #	Northing	Eastng
DL-24	2628708.65	1619570.25	DS-5	2626323.49	1614048.61
DL-25	2627809.70	1620045.97	DS-6	2626323.49	1616673.28
DL-28	2632462.12	1628828.90	DS-7	2624354.99	1616673.28
DL-29	2633360.88	1628352.82	DS-8	2624354.99	1614619.08
			DS-9	2624587.68	1614048.61

DREDGE LIMITS - AREA D			CINC SURVEY LIMITS		
Corner #	Northing	Eastng	Corner #	Northing	Eastng
DL-25	2627809.70	1620045.97	SL-16	2628562.99	1619081.63
DL-26	2627635.79	1620138.09	SL-17	2627313.36	1619743.03
DL-27	2632288.21	1628921.02	SL-18	2632433.89	1629409.67
DL-28	2632462.12	1628828.90	SL-19	2633683.29	1628747.85
			SL-20	2626423.49	1613948.61
			SL-21	2624254.99	1613948.61
			SL-22	2624254.99	1616773.28
			SL-23	2626423.49	1616773.28

CONTROL DATA				
POINT ID	NORTHING	EASTING	ELEV. (MLLW)	DESCRIPTION
BM 12 1974	2,620,563.82	1,604,566.35	27.63	Brass Cap
BM 5934 F	2,655,203.73	1,655,049.51	36.48	Brass Cap
CRAIG	2,642,635.95	1,661,029.47	44.95	Brass Cap
ETRAC-1	2,646,395.57	1,660,814.72	38.34	Brass Cap
ETRAC-2	2,644,443.04	1,660,120.66	36.38	Brass Cap
MIKE	2,645,987.73	1,661,875.48	48.67	Brass Cap
NORTH END	2,646,649.84	1,660,584.80	41.56	USACE SBC 1978
PORT 1989	2,639,934.29	1,656,925.43	39.55	Almon
PORT MAC	2,655,563.46	1,654,968.22	41.51	Brass Cap
RIFE 1960	2,620,502.19	1,604,162.70	29.99	Brass Cap
SOUTH END	2,644,296.27	1,659,728.03	40.58	USACE SBC 1978
TERRA 11 ARP	2,644,969.84	1,660,159.24	80.48	Antenna Reference Point
TERRA 12 ARP	2,644,900.65	1,660,188.56	81.21	Antenna Reference Point
5920 THERMO 1 1988	2,642,784.70	1,660,183.87	37.32	Almon

VOLUME COMPUTATIONS	
DREDGE AREA C	CUBIC YARDS
VOLUME AVAILABLE ABOVE -38' MLLW	0
VOLUME AVAILABLE ABOVE -40' MLLW	26
VOLUME AVAILABLE ABOVE -43' MLLW	90,259
DREDGE AREA D	CUBIC YARDS
VOLUME AVAILABLE ABOVE -38' MLLW	6
VOLUME AVAILABLE ABOVE -40' MLLW	2,010
VOLUME AVAILABLE ABOVE -43' MLLW	65,303
DISPOSAL AREA	CUBIC YARDS
FILL VOLUME AVAILABLE BELOW -45' MLLW	1,574,285



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

David R. Neff CH(275)

BATHYMETRY



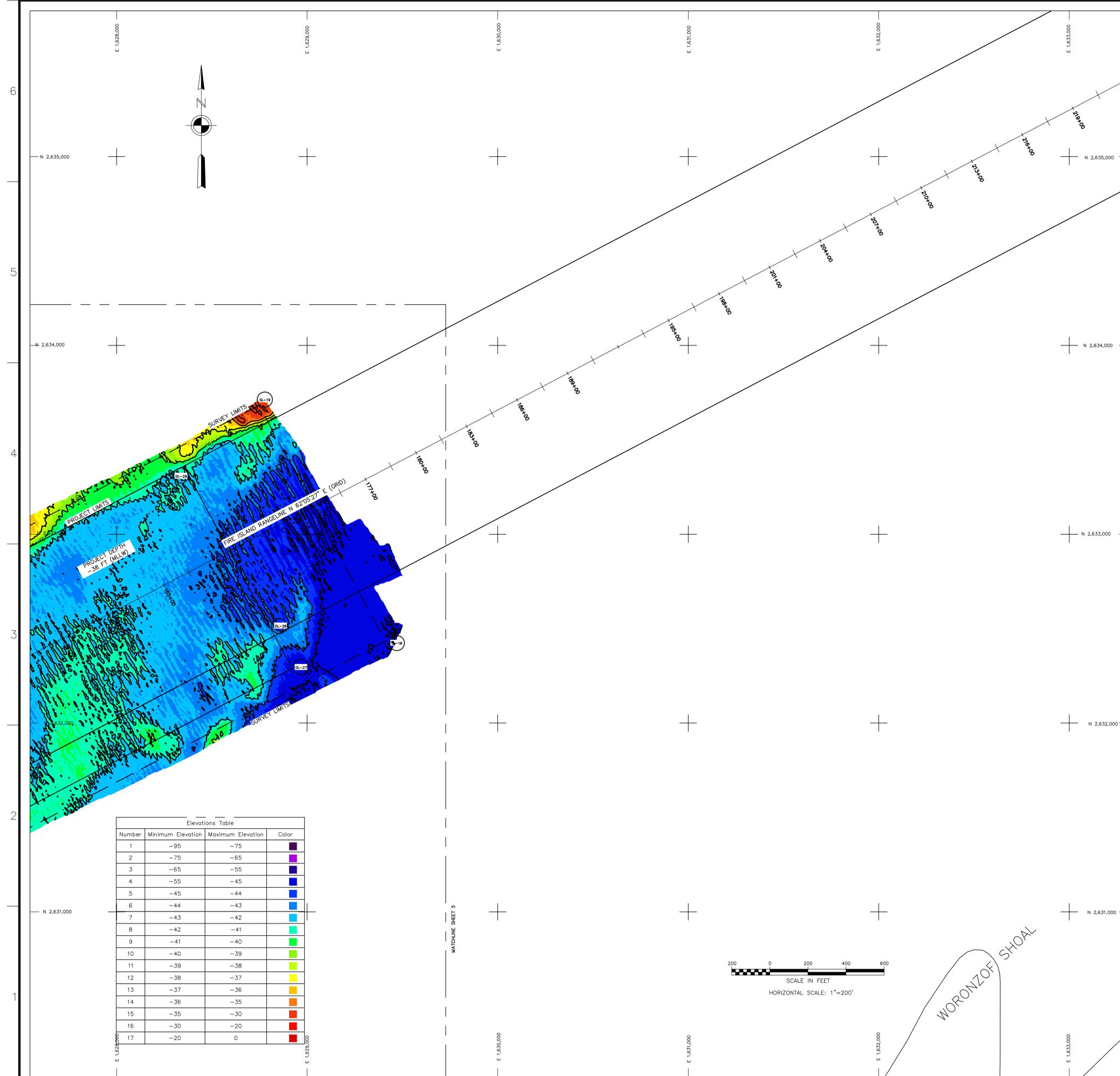
CONTRACT NO. W911KB-15-C-0006
 CONTRACTOR: MANSON CONSTRUCTION CO.
 CITY: SEATTLE STATE: WA
 Recommended: [Signature] Approved: [Signature]
 PRIME CONTRACTOR RESUB CONTRACTOR

Serial	Action	Description	Date	App'd

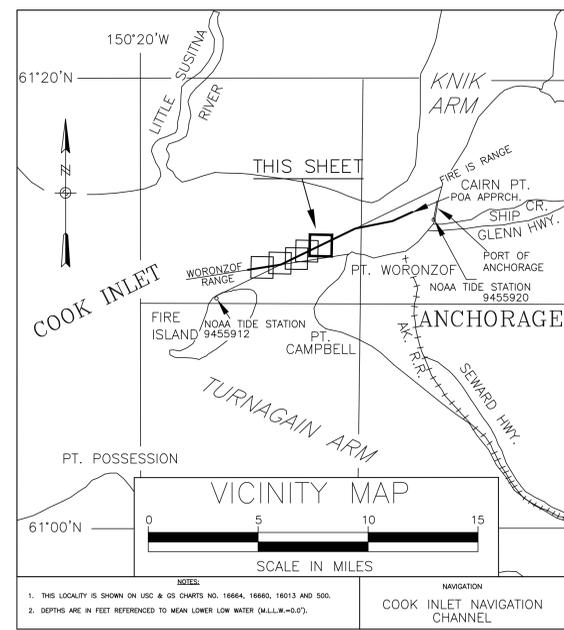
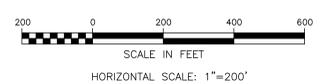
Date: 05/17/2016
 Dwg. Scale: 1" = 200'
 Plot. Scale: 1:1
 File: cookinletna.dwg
 Branch: [Blank]
 Designer: M. TENCZA
 Drawn: M. TENCZA
 Reviewed: J. ANDERSON
 Checked: [Blank]
 Submitted: A. CHURCHILL
 Checked: [Blank]
 USACE Survey No: 3552-16

COOK INLET, ALASKA
 COOK INLET NAVIGATION CHANNEL
 CONDITION SURVEY
 APRIL 15, 2016

Reference number:
V-110
 Sheet 10 of 11



Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-95	-75	Dark Purple
2	-75	-65	Purple
3	-65	-55	Dark Blue
4	-55	-45	Blue
5	-45	-44	Light Blue
6	-44	-43	Cyan
7	-43	-42	Teal
8	-42	-41	Green
9	-41	-40	Light Green
10	-40	-39	Yellow-Green
11	-39	-38	Yellow
12	-38	-37	Light Yellow
13	-37	-36	Orange
14	-36	-35	Dark Orange
15	-35	-30	Red-Orange
16	-30	-20	Red
17	-20	0	Dark Red



- NOTES**
- HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 IN U.S. SURVEY FEET HOLDING USACE "TERRA 11" AS N 2,644,969.84, E 1,660,159.24.
 - VERTICAL CONTROL: ELEVATIONS ARE MEAN LOWER LOW WATER (MLLW) TIDAL DATUM EPOCH 1983-2001, EXPRESSED IN U.S. SURVEY FEET. PRELIMINARY ELEVATIONS WERE ACQUIRED IN REFERENCE TO A SINGLE BENCHMARK HOLDING USACE "TERRA 11" AS 80.48 FEET MLLW. FINAL DATA WERE ADJUSTED BASED ON THE C.I.N.C. CUSTOM MLLW PLANE DETERMINED FROM THE DOWL C.I.N.C. CONTROL SURVEY CONDUCTED IN FEBRUARY, 2013.
 - SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
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David R. Neff CH(275)

BATHYMETRY



CONTRACT NO. W911KB-15-C-0006
 CONTRACTOR: MANSON CONSTRUCTION CO.
 CITY: SEATTLE STATE: WA
 Recommended: [Signature] Approved: [Signature]
 PRIME CONTRACTOR RESIDENT ENGINEER

Serial	Action	Description	Date	App'd

Date: 05/17/2016
 Deg. Scale: 1" = 200'
 Plot Scale: 1:1
 File: cookinletnava_chnl.dwg
 Branch: [Blank]
 Designer: M. TENCZA
 Drawn: M. TENCZA
 Reviewed: J. ANDERSON
 Checked: [Blank]
 Submitted: A. CHURCHILL
 Checked: [Blank]
 USACE Survey No: 3552-16

COOK INLET, ALASKA
 COOK INLET NAVIGATION CHANNEL
 CONDITION SURVEY
 APRIL 15, 2016

Reference number:
V-111
 Sheet 11 of 11