



NAVIGATION AIDS			
NO.	NORTHING	EASTING	DESCRIPTION
27185	386,625	1,572,636	KING COVE HARBOR ENTRANCE LIGHT 1 FI G 2.5S
27190	386,913	1,572,724	KING COVE HARBOR ENTRANCE LIGHT 2 FI R 6S

PROJECT LIMITS		
CORNER#	NORTHING	EASTING
1	386,810.57	1,572,745.98
2	387,021.93	1,572,337.25
3	387,274.51	1,571,848.82
4	386,475.05	1,571,435.43
5	386,222.44	1,571,923.92
6	386,933.09	1,572,291.31
7	386,721.78	1,572,699.99

VOLUME COMPUTATIONS		
AREA A: ENTRANCE CHANNEL	MLLW=0	CU. YD.
AVAILABLE TO PROJECT DEPTH (PD)	-15.0	75
AVAILABLE TO MAX PAY DEPTH (MP)	-16.0	216
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	320
AREA B: BASIN		
AVAILABLE TO PD	-15.0	821
AVAILABLE TO MP	-16.0	3,031
AVAILABLE SS AT 3:1 (H:V) & 25' WIDE	VARIES	602
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)		4,169

LEGEND

CULVERT	<
VALVE	⌘
SIGN	○
GUARD POST	●
ELECTRICAL PEDESTAL	⌚
ELECTRICAL SWITCH BOX	⊗
TRANSFORMER WITH PAD	⌚
TRANSFORMER	▲
LIGHT POLE	●⊕
POWER LIGHT POLE	○⊕
GUY WIRE	⌒
FIRE HYDRANT	⌚
BUILDING	⌚



NOTES

- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 7, NAD83 (CORS). IN US SURVEY FEET BASED ON A STATIC GPS NETWORK HOLDING NGS EPOCH 2003.00 CORS L1 PHASE CENTER VALUES FOR "HAYSTACK, AK 2004 CORS ARP" (NGS PID DG7414), "SANDPOINT, AK 2004 CORS ARP" (NGS PID DL7635) AND "PORT HEIDEN AK 2007 CORS ARP" (NGS PID DL6447).
- LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 7, NAD83, IN US SURVEY FEET HOLDING USACE SBC "KCH-1 1998" (PID BBBD25/VM#17933) AS N 386,998.71', E 1,572,568.92', AND "KCH-5 2006" AS 385,708.58', E 1,571,759.69'.
- VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0'), BASED ON THE NOAA/NOS TIDAL BENCH MARK LIST: "945 9881 KING COVE, DEER PASSAGE, PACIFIC OCEAN, ALASKA" PUBLISHED 11/21/2011. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/USACE TIDAL BENCH MARK "KCH-1 1998" (PID BBBD25/VM#17933) AS 9.64'.
- VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 (GEOID 12A) ELEVATIONS HOLDING NOAA/USACE TIDAL BENCHMARK "KCH-1 1998" (PID BBBD25/VM#17933) AS 9.09'.
- SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED MAY 12-13, 2019. SOUNDINGS WERE COLLECTED USING AN R2SONIC 2020 MULTIBEAM ECHOSOUNDER OPERATING AT 400 KHZ. SOUND VELOCITY THOUGH THE WATER COLUMN WAS DETERMINED WITH A AML BASE X SOUND VELOCITY PROBE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POSMV WAVEMASTER V5 SYSTEM RECEIVING RTK CORRECTIONS FROM A TRIMBLE R8 MODEL 3 GPS RECEIVER SET AT CONTROL STATION "KCH-1 1998". DATA WAS COLLECTED AND PROCESSED USING QINSY 8.1 AND QIMERA 1.6 SOFTWARE. HORIZONTAL CONTROL WAS VERIFIED USING RTK GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING DIFFERENTIAL LEVELING TECHNIQUES.
- TERRESTIAL LASER SCANNING DATA WAS COLLECTED MAY 13 & 14, 2019. DATA WAS COLLECTED USING A RIEGL VZ400 LASER SCANNER AND PROCESSED USING QINSY 8.1 AND QIMERA 1.6 SOFTWARE. POSITION AND VESEL ORIENTATION WERE MEASURED USING AN APPLANIX POSMV WAVEMASTER V5 SYSTEM
- THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
- MAP SOUNDINGS ARE BINNED AT 24 FEET AND ARE SHOAL-BIASED. CONTOURS ARE BASED ON 12 FEET BINNED SHOAL-BIASED SOUNDINGS. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE MEAN VALUE SOUNDINGS.

SURVEY CONTROL DATA

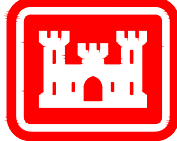
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
BNH-1 2010	384,599.33	1,572,114.07	15.75	3 INCH SBC IN ROCK
BNH-2 2010	384,808.29	1,571,519.59	14.96	3 INCH SBC IN ROCK
BNH-3 2010	385,824.89	1,572,274.91	17.87	3 INCH SBC IN CONC.
CITY 1995	386,702.08	1,572,123.29	12.49	1-1/2 INCH SAC
FIRE 1995	386,561.62	1,571,377.40	12.51	1-1/2 INCH SAC
KCH-1 1998	386,998.71	1,572,568.92	9.64	3-1/4 INCH SBC
KCH-4 2002	386,303.11	1,571,560.49	10.70	3-1/4 INCH SAC
KCH-5 2006	385,708.58	1,571,759.69	16.31	3 INCH SBC IN ROCK
KCH-6 2006	385,666.77	1,572,613.48	12.43	3 INCH SBC IN ROCK
RED 1995	386,912.57	1,572,714.92	6.89	1-1/2 INCH SAC



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

Gregory W. Gibson

Gregory W. Gibson (317)



US ARMY CORPS
OF ENGINEERS®
ALASKA DISTRICT

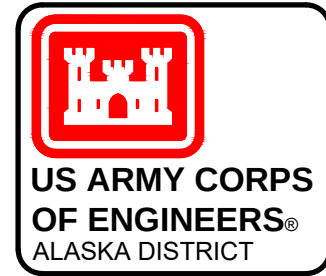
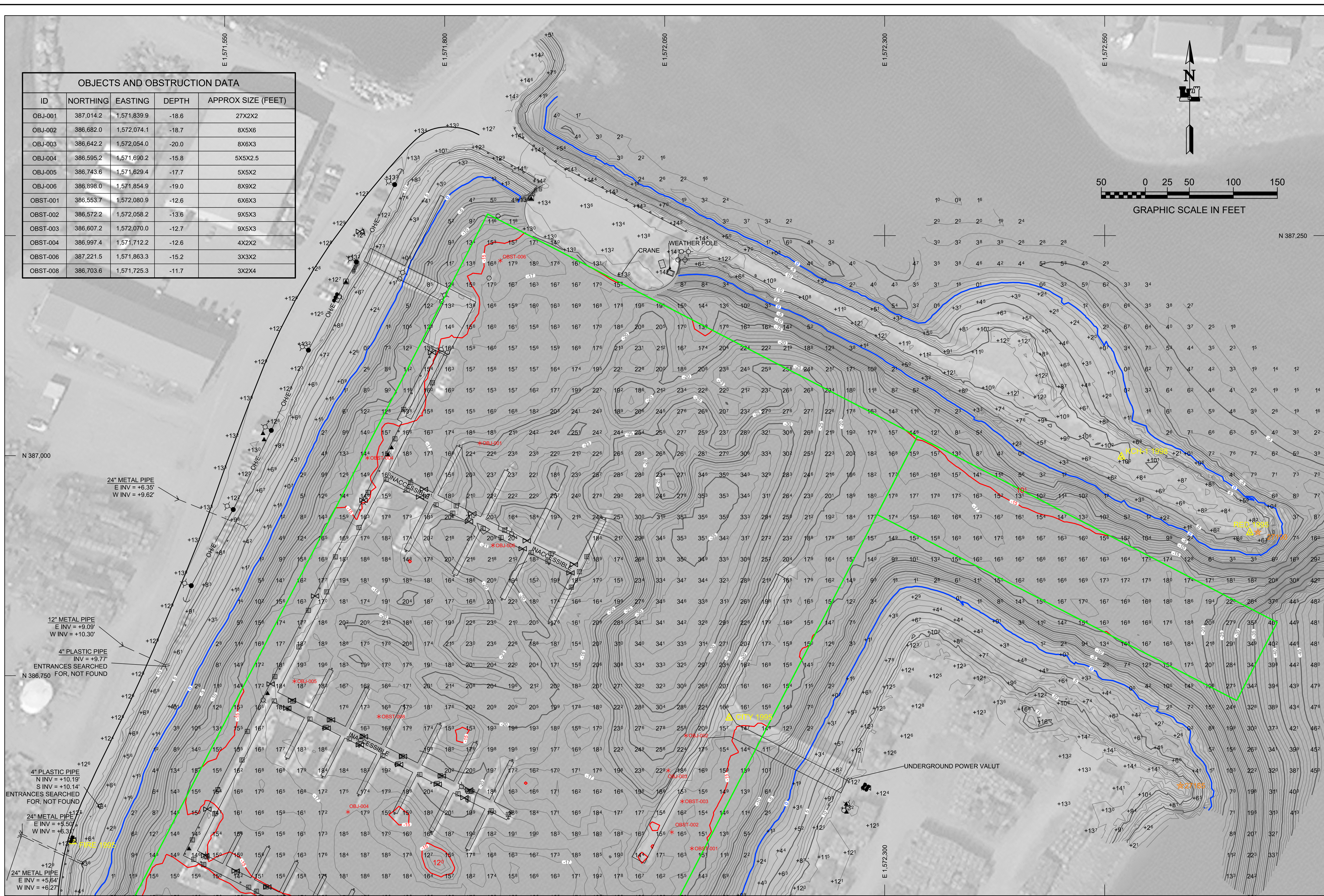
REV.	DATE	BY	APPR.	DESCRIPTION

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 2204 3RD STREET JBER, ALASKA 99506-0888 	SURVEYED BY: GREGORY W. GIBSON DRAWN BY: ROBERT GOUGHNOUR CHECKED BY: TASJG/GVG APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION FILE: 072741_VH02.DWG	UPC: 072741	PLOT DATE: 15 August 2019	TASK ORDER NO.: 19PD0063	JOB NO.: 0319	SCALE: 1" = 150'	CONTRACT NO.: W811KG-16-D-0014	STATE: ALASKA

KING COVE, ALASKA
072741 - KING COVE HARBOR
PROJECT CONDITION SURVEY
MAY 11 - MAY 14, 2019

REFERENCE NUMBER:
5-KIN-92-07-20
SHEET 1 OF 4

ID	NORTHING	EASTING	DEPTH	APPROX SIZE (FEET)
OBJ-001	387,014.2	1,571,839.9	-18.6	27X2X2
OBJ-002	386,682.0	1,572,074.1	-18.7	8X5X6
OBJ-003	386,642.2	1,572,054.0	-20.0	8X6X3
OBJ-004	386,595.2	1,571,690.2	-15.8	5X5X2.5
OBJ-005	386,743.6	1,571,629.4	-17.7	5X5X2
OBJ-006	386,898.0	1,571,854.9	-19.0	8X9X2
OBST-001	386,553.7	1,572,080.9	-12.6	6X6X3
OBST-002	386,572.2	1,572,058.2	-13.6	9X5X3
OBST-003	386,607.2	1,572,070.0	-12.7	9X5X3
OBST-004	386,997.4	1,571,712.2	-12.6	4X2X2
OBST-006	387,221.5	1,571,863.3	-15.2	3X3X2
OBST-008	386,703.6	1,571,725.3	-11.7	3X2X4

[illegible]

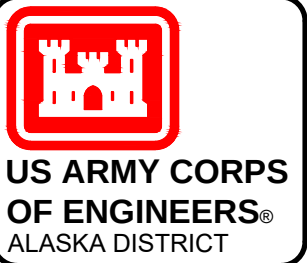
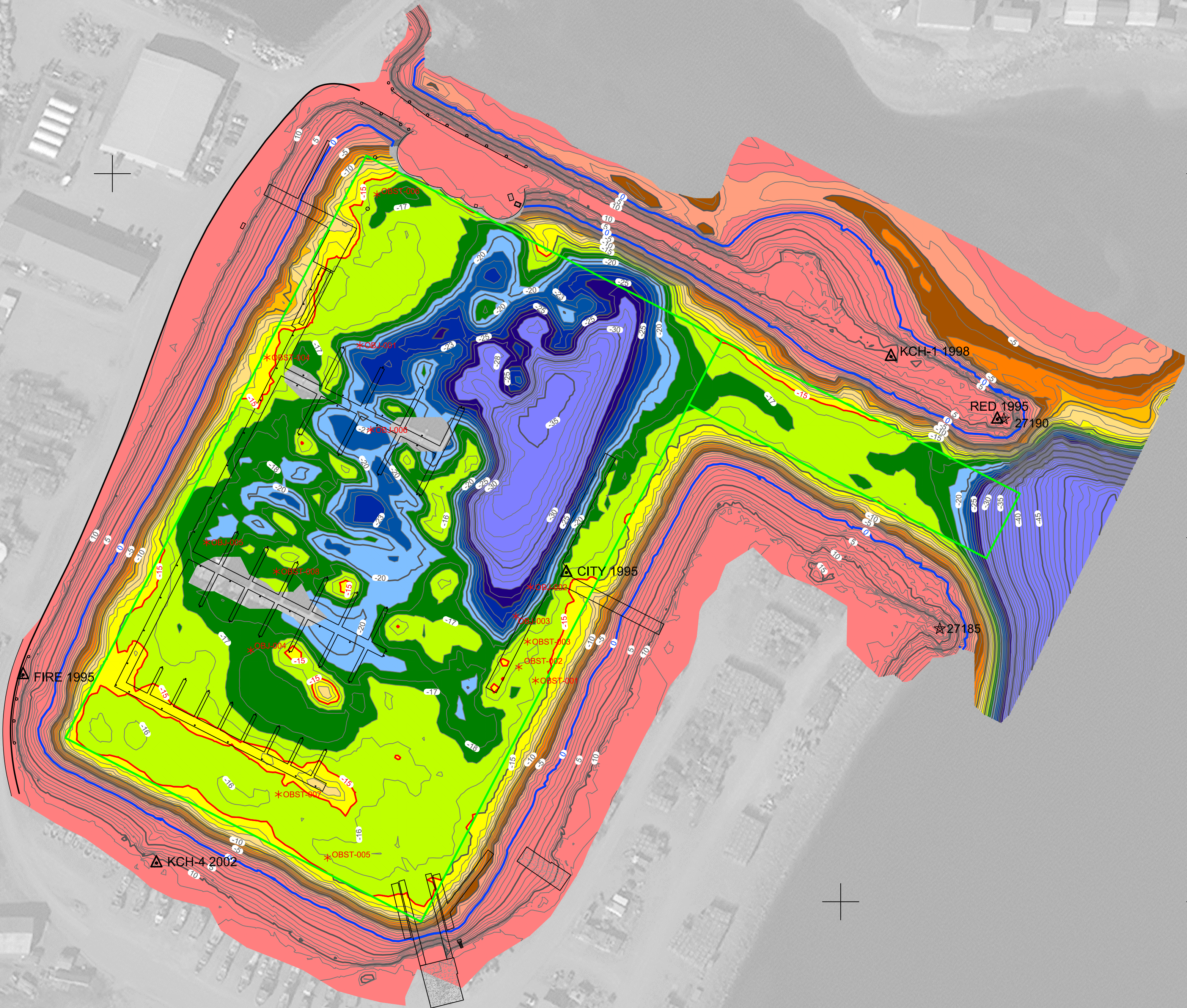
 U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 2201 3RD STREET JBER, ALASKA 99506-0888	SURVEYED BY: GREGORY W. GIBSON		UPC: 017274	CONTRACT NO.: 017274
	CHECKED BY: ROBERT COUGHNOUR		DATE: 15 August 2019	TASK ORDER NO.: 19F068
FILE: 0172741 VH02.DWG		SCALE: 1" = 50'	ANSI D	JOB NO.: 0319
APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION		CONTRACTOR: ETAC INC.		
CITY: WASILLA		STATE: ALASKA		

KING COVE, ALASKA
072741 - KING COVE HARBOR
PROJECT CONDITION SURVEY
MAY 11 - MAY 14, 2019

REFERENCE
NUMBER:
5-KIN-92-07-20
SHEET 2 OF 4

ELEVATION COLOR LEGEND			
#	MIN. ELEV.	MAX. ELEV.	COLOR
1	-55.9	-27.0	Light Blue
2	-27.0	-25.0	Dark Blue
3	-25.0	-23.0	Blue
4	-23.0	-21.0	Light Blue
5	-21.0	-19.0	Light Green
6	-19.0	-17.0	Green
7	-17.0	-15.0	Yellow-Green
8	-15.0	-13.0	Yellow
9	-13.0	-11.0	Light Orange
10	-11.0	-9.0	Orange
11	-9.0	-7.0	Dark Orange
12	-7.0	-5.0	Brown
13	-5.0	-3.0	Light Brown
14	-3.0	16.8	Red

OBSTRUCTION DATA				
ID	NORTHING	EASTING	DEPTH	APPROX SIZE (FEET)
OBJ-001	387,014.2	1,571,839.9	-18.6	27X2X2
OBJ-002	386,682.0	1,572,074.1	-18.7	8X5X6
OBJ-003	386,642.2	1,572,054.0	-20.0	8X6X3
OBJ-004	386,595.2	1,571,690.2	-15.8	5X5X2.5
OBJ-005	386,743.6	1,571,629.4	-17.7	5X5X2
OBJ-006	386,898.0	1,571,854.9	-19.0	8X9X2
OBST-001	386,553.7	1,572,080.9	-12.6	6X6X3
OBST-002	386,572.2	1,572,058.2	-13.6	9X5X3
OBST-003	386,607.2	1,572,070.0	-12.7	9X5X3
OBST-004	386,997.4	1,571,712.2	-12.6	4X2X2
OBST-005	386,310.5	1,571,795.4	-12.3	4X5X4
OBST-006	387,221.5	1,571,863.3	-15.2	3X3X2
OBST-007	386,397.5	1,571,728.1	-12.8	4X2X2
OBST-008	386,703.6	1,571,725.3	-11.7	3X2X4



REV.	DATE	BY	APPR.	DESCRIPTION

	SURVEYED BY: GREGORY W. GIBSON		UPC: 072741	CONTRACT NO.: W811KB-16-D-0014					
	DRAWN BY: ROBERT GOUGHNOUR		PLOT DATE: 15 August 2019	TASK ORDER NO.: 19P0063					
	CHECKED BY: TASJGGVNG		SIZE: ANSI D	JOB NO.: 0319					
	APPROVED BY: TASJGGVNG		SCALE: 1" = 50'	JOB NO.: 0319					
CHIEF GEOMATICS SECTION			CONTRACTOR: LETRAC INC.						
FILE: 072741_VH02.DWG			STATE: ALASKA						

KING COVE, ALASKA
072741 - KING COVE HARBOR
PROJECT CONDITION SURVEY
MAY 11 - MAY 14, 2019

REFERENCE
NUMBER:
5-KIN-92-07-20
SHEET 4 OF 4