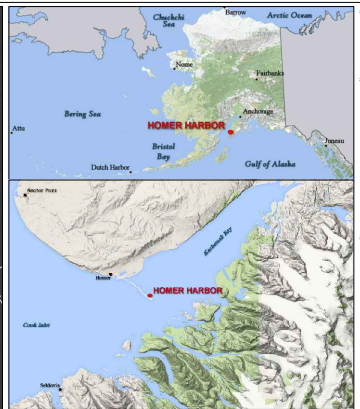


PROJECT LIMITS CURVE DATA			
CURVE	RADIUS	ARC LENGTH	DELTA ANGLE
C1	62.87	96.38	086°12'42.5"
C2	172.66	149.28	049°29'29.9"
C3	185.63	338.77	104°33'41.9"
C4	95.61	174.50	104°34'21.5"
C5	160.16	206.61	074°34'49.9"
C6	104.07	191.44	105°23'39.4"

PROJECT LIMITS		
CORNER#	NORTHING	EASTING
7	2,049,518.03	1,377,882.50
8	2,049,207.15	1,377,683.23
9	2,049,313.35	1,377,517.38
10	2,049,716.59	1,376,903.13
11	2,050,281.01	1,376,002.56
12	2,050,544.76	1,375,588.76
13	2,050,863.53	1,375,216.87
14	2,051,074.98	1,375,335.41
15	2,051,189.30	1,375,389.23
16	2,051,420.46	1,375,556.10
17	2,050,887.56	1,376,390.12
18	2,050,312.15	1,377,290.69
19	2,050,826.40	1,378,223.29
20	2,050,542.13	1,378,169.40
21	2,050,086.16	1,377,152.89
22	2,050,011.48	1,377,098.58
23	2,049,823.34	1,377,690.34
24	2,049,707.99	1,377,688.69
25	2,049,954.10	1,379,383.98
26	2,049,538.77	1,379,277.46
CG1	2,049,621.31	1,379,028.43
CG2	2,049,755.11	1,378,885.74
CG3	2,049,854.76	1,378,791.65
CG4	2,049,481.24	1,378,801.18
CG5	2,049,433.37	1,378,852.25
CG6	2,049,385.49	1,378,903.32
CG7	2,049,366.89	1,378,818.05
CG8	2,049,838.07	1,378,748.64
PC1A	2,049,852.14	1,378,351.33
PC2A	2,049,786.26	1,378,304.02
PC3A	2,049,883.06	1,378,221.58
PC4A	2,049,947.63	1,378,141.68
PC5A	2,049,758.41	1,377,752.69
PL-02	2,050,341.61	1,376,668.97
PL-03	2,050,254.64	1,376,619.37
PRC3B5A	2,050,041.53	1,377,932.63
PT1B	2,049,886.45	1,378,266.64
PT2B	2,049,855.91	1,378,188.75
PT4B	2,049,974.64	1,377,992.85
PT5B	2,050,025.58	1,377,738.19
PT6B	2,049,583.40	1,377,768.24



- NOTES**
- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4. NA83 IN HIS SURVEY FEET BASED ON A FULLY CONTROLLED STATE GPS NETWORK INCLUDING THE PUBLISHED NAD83/NA83/0303/0304 SPCH VALUES OF NESS CORN 51A BONG, NESS CORN 51B KASHE, AND NESS CORN 51C KASHE. HORIZONTAL CONTROL IS LOCAL HORIZONTAL CONTROL BY ALASKA STATE PLANE, ZONE 4 IN FEET. VERTICAL CONTROL IS USCG SBC HOMER BASIN 7, NAD 83 (2011), E: 377,964.8 AND USCG SBC TRUCK ACH 2, NAD 83 (2011), E: 378,818.1.
 - VERTICAL CONTROL IS MEAN LOWERCORNER WATER (MLW) BASED ON THE HOANODS TIDAL BENCH MARK SET FOR STATION 945 507, HOMER, ALASKA PUBLISHED 08/10/2010. THE TIDAL DATUMS BASED ON THE 1983-2001 TIDAL BENCH AND IS REPRESENTED BY HOLDING SBC TRUCK ACH 2/05.
 - SOUNDINGS ARE IN FEET AND ARE NEGATIVE UNLESS OTHERWISE INDICATED.
 - THIS DRAWING IS REACTIVE OF CONDITIONS AT THE TIME OF SURVEY.
 - BATHYMETRY WAS COLLECTED SEPTEMBER 8, 2015. SOUNDINGS WERE COLLECTED USING A "ROSSOM" 3027 WALKBEAM SOUNDING #1 102. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN OCEANIC BATHY THERMOGRAPHIC PROBE. POSITIONING AND TIDAL DATUMS WERE MEASURED USING A REAL TIME KINEMATIC (RTK) GPS SYSTEM WITH A LOCAL MODE. STATION OCCUPANCY CODE "TRUCK ACH 2" DATA WAS COLLECTED AND IS THIS PROCESS USING "TRUCK ACH 2" DATA. TIDAL ELEVATIONS WERE MEASURED USING A "HIMMEL" REFLECTOR SYSTEM.
 - THE SOUNDING VALUES SHOWN ON THIS PLAN WERE VERIFIED PRIOR TO THE FREE DREDGE SURVEY AND HELD AS PUBLISHED.
 - MAP SOUNDINGS ARE SORTED AT 12 FEET FROM A 1 FOOT CELL CENTER. 5' CELL BASED DR. VOLUME SOUNDINGS ARE SHOWN AT 1 FEET INTERVALS ACTUAL 2' CELL CENTER WHERE POSSIBLE. ACTUAL VALUES.

SURVEY CONTROL DATA				
STATION	NORTHING	EASTING	MLLV	DESCRIPTION
AUDREY	2,051,507.88	1,375,406.80	33.31	1-1/2 IN ALUMINUM CAP (FOUND)
BL-2A 1989	2,049,793.81	1,378,015.52	32.49	USACE SBC (FOUND)
BM NO 8 1985			27.28	USCG SBC (NOT FOUND)
BOLL 1996	2,050,682.88	1,375,195.75	35.48	3-1/4 IN FLAT BRASS CAP (FOUND)
C 103 1965			26.95	USCG SBC (NOT FOUND)
HB-08 2009	2,050,150.76	1,377,830.73	31.92	3-1/4 IN DOMED ALUMINUM CAP (FOUND)
HB-08 2009	2,051,199.61	1,375,120.24	32.01	3-1/4 IN DOMED ALUMINUM CAP (FOUND)
HOMER BASIN 4 1985	2,050,038.11	1,378,340.09	31.28	USACE SBC (NOT SEARCHED)
HOMER BASIN 5 1985	2,049,940.32	1,378,344.30	30.67	USACE SBC (FOUND, NOT GPS SURFACE)
HOMER BASIN 6 1985	2,049,887.28	1,378,073.96	31.21	USACE SBC (FOUND)
HOMER BASIN 7 1985	2,048,712.22	1,377,964.38	31.48	USACE SBC (FOUND)

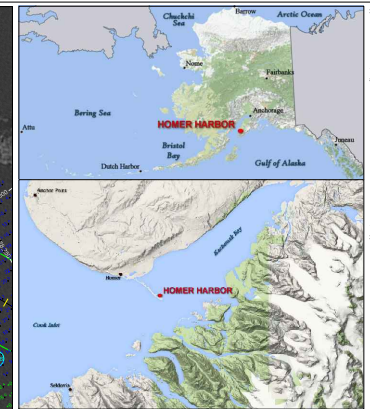
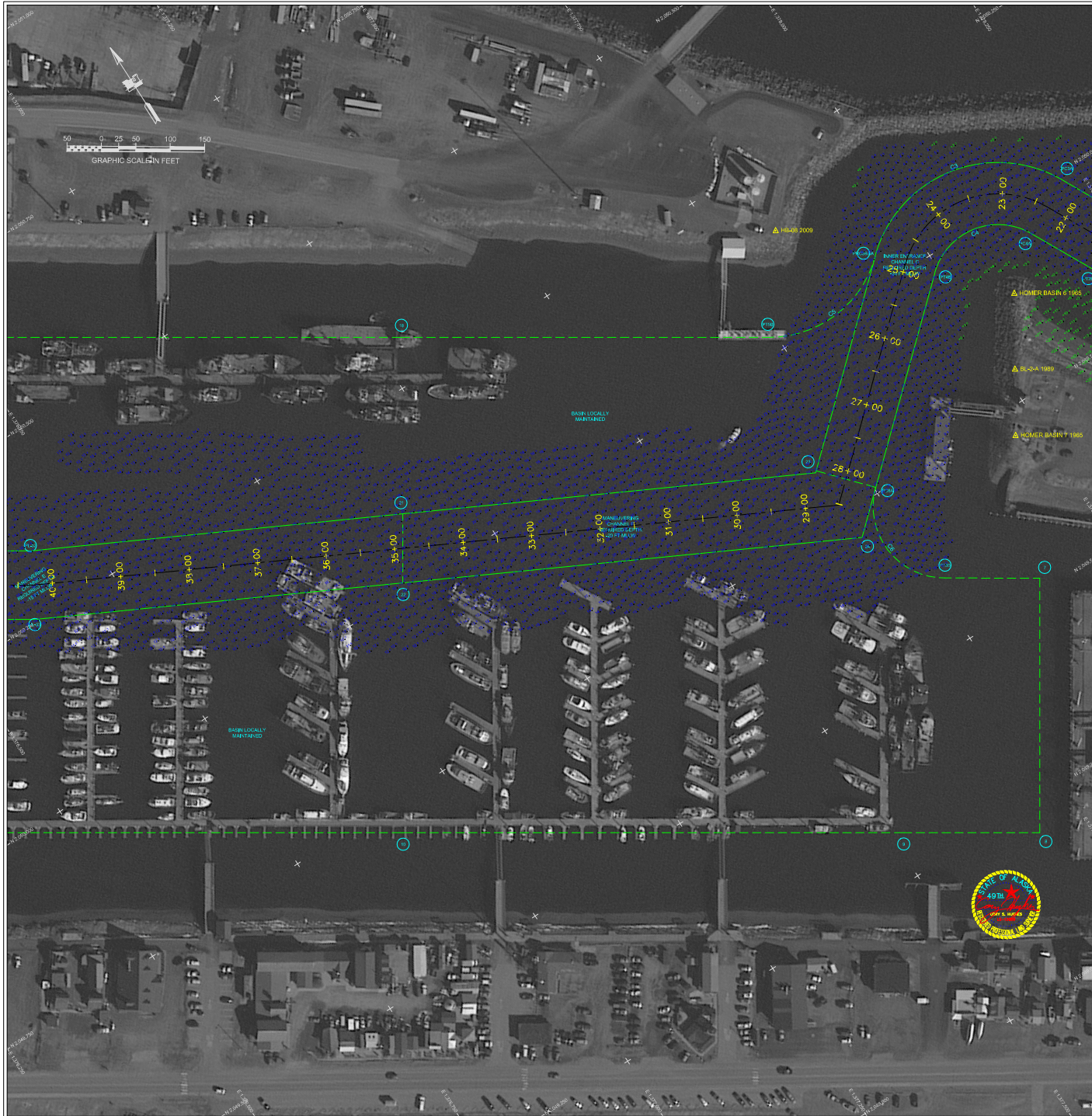
NAVIGATION AIDS			
USCG NO.	NORTHING	EASTING	DESCRIPTION
28210	2,049,940	1,378,351	HOMER BREAKWATER LIGHT 2
28216	2,049,932	1,378,494	SOUTH LIGHTED MOORING BUOY

VOLUME COMPUTATIONS		
AREA A: OUTER ENTRANCE CHANNEL	MLLV (FT)	CU. YD.
AVAILABLE TO DREDGE DEPTH (DD)	-20.0	118
AVAILABLE BETWEEN DD AND MAX PAY DEPTH (MP)	-21.0	986
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H/V) & 25' WIDE	VARIABLES	318
AREA B: USCG BASIN AREA		
AVAILABLE TO DD	-22 TO -26	338
AVAILABLE BETWEEN DD AND MP	-23 TO -27	301
AVAILABLE SS	VARIABLES	2,181
AREA C: INNER CHANNEL AREA		
AVAILABLE TO DD	-20.0	475
AVAILABLE BETWEEN DD AND MP	-21.0	912
AVAILABLE SS	VARIABLES	2,470
AREA D: MANEUVERING AREA		
AVAILABLE TO DD	-20.0	116
AVAILABLE BETWEEN DD AND MP	-21.0	1,511
AVAILABLE SS AT 3:1 (H/V) & 25' WIDE	VARIABLES	14
AREA E: MANEUVERING AREA		
AVAILABLE TO DD	-15.0	129
AVAILABLE BETWEEN DD AND MP	-16.0	854
AVAILABLE SS AT 3:1 (H/V) & 25' WIDE	VARIABLES	89
AREA F: MANEUVERING AREA		
AVAILABLE TO DD	-10.0	7
AVAILABLE BETWEEN DD AND MP	-11.0	18
AVAILABLE SS AT 3:1 (H/V) & 25' WIDE	VARIABLES	0
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)		10,537

US Army Corps of Engineers
ALASKA DISTRICT

HOMER, ALASKA
HOMER HARBOR
PRE DREDGE SURVEY
SEPTEMBER 8, 2015

SHEET IDENTIFICATION
V-101
Sheet 1 of 3



- NOTES**
1. PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 IN US SURVEY FEET BASED ON A FLAT EARTH CONFORMANCE. STATE GPS NETWORK HOLDING THE PUBLISHED HORIZONTAL CONTROL SPECIAL VALUES OF NEGS CODES STA BONE, NEVA, CODES ARE PLAIN AND CODES "PACKED" CODES ARE "BKA" HEADINGS. LOCAL HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, IN FEET, NAD 83. LOCAL USCG SBC "HOMER BASIN 7" IS N 274 172.2 E, 377.964. LOCAL USCG SBC "HOMER BASIN 6" IS N 284 743.0 E, 378.073. LOCAL USCG SBC "HOMER BASIN 5" IS N 284 743.0 E, 377.964.
 2. VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW) BASED ON THE WOODS HOLE TIDAL GAUGE MARKED FOR STATION "465503" HOMER, ALASKA PUBLISHED IN 10/06. THIS TIDAL GAUGE BASED ON THE HIGHEST TIDAL SPOON AND BEING USED BY HOLDING SBC "BL-24" SURVEY.
 3. SOUNDINGS ARE IN FEET AND ARE NEGATIVE UNLESS OTHERWISE INDICATED.
 4. THIS DRAWING IS PREDICTIVE OF CONDITIONS AT THE TIME OF SURVEY.
 5. BATHYMETRY WAS COLLECTED SEPTEMBER 8, 2015. SOUNDINGS WERE COLLECTED USING A "SONIC 302" WALK BEAM SOUNDING AT 120" SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN OCEANIC BEAM PRO SOUND VELOCITY PROFILE. POSITIONING AND VELOCITY AT TUGS WERE MEASURED USING A "TRIMBLE RINEX" GPS. RTK CORRECTIONS WERE BEACONED FROM A LOCAL BASE STATION OCCUPYING "HOMER BASIN 4" DATA WAS COLLECTED AND FIELD PROCESSED USING "TRIMBLE 2015" SOFTWARE. TIDE ELEVATIONS WERE MEASURED USING A "TRIMBLE RINEX" SYSTEM.
 6. THE CONTROL VALUES SHOWN ON THIS PLAN WERE VERIFIED PRIOR TO THE PRE DREDGE SURVEY AND HELD AS PUBLISHED.
 7. MAR SOUNDINGS ARE SORTED AT 10 FEET FROM A 1 FOOT CELL CENTER. SHAL DEPTED REL. VOLUME SOUNDINGS ARE SHOWN AT 5 FEET AND ARE ACTUAL TO THE EXTENT POSSIBLE. AVERAGE VOLUMES.

SURVEY CONTROL DATA

STATION	NORTHING	EASTING	MLLW	DESCRIPTION
AUDREY	2,051,507.88	1,375,406.80	33.31	1-1/2 IN ALUMINUM CAP (FOUND)
BL-24 1989	2,049,793.81	1,378,015.92	32.49	USCG SBC (FOUND)
BM NO 6 1985			27.28	USCG SBC (NOT FOUND)
BOLL 1996	2,050,682.28	1,375,195.75	35.48	3-1/4 IN FLAT BRASS CAP (FOUND)
C 103 1965			26.95	USCG SBC (NOT FOUND)
HL-08 2009	2,050,150.78	1,377,830.73	31.92	3-1/4 IN DOMED ALUMINUM CAP (FOUND)
HL-08 2009	2,051,199.61	1,375,120.24	32.01	3-1/4 IN DOMED ALUMINUM CAP (FOUND)
HOMER BASIN 4 1965	2,050,038.11	1,378,340.09	31.28	USCG SBC (NOT SEARCHED)
HOMER BASIN 5 1985	2,049,940.32	1,378,344.30	30.87	USCG SBC (FOUND, NOT GPS SUITABLE)
HOMER BASIN 6 1985	2,049,887.28	1,378,073.96	31.21	USCG SBC (FOUND)
HOMER BASIN 7 1985	2,048,712.22	1,377,964.36	31.48	USCG SBC (FOUND)

NAVIGATION AIDS

USCG NO.	NORTHING	EASTING	DESCRIPTION
28210	2,049,940	1,378,351	HOMER BREAKWATER LIGHT 2
28216	2,049,932	1,378,484	SOUTH LIGHTED MOORING BUOY

VOLUME COMPUTATIONS

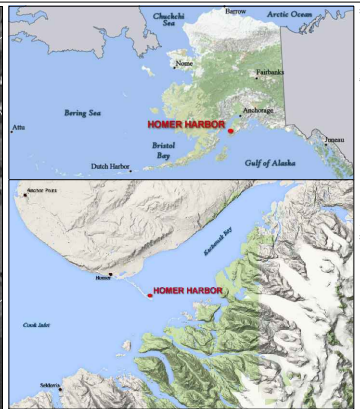
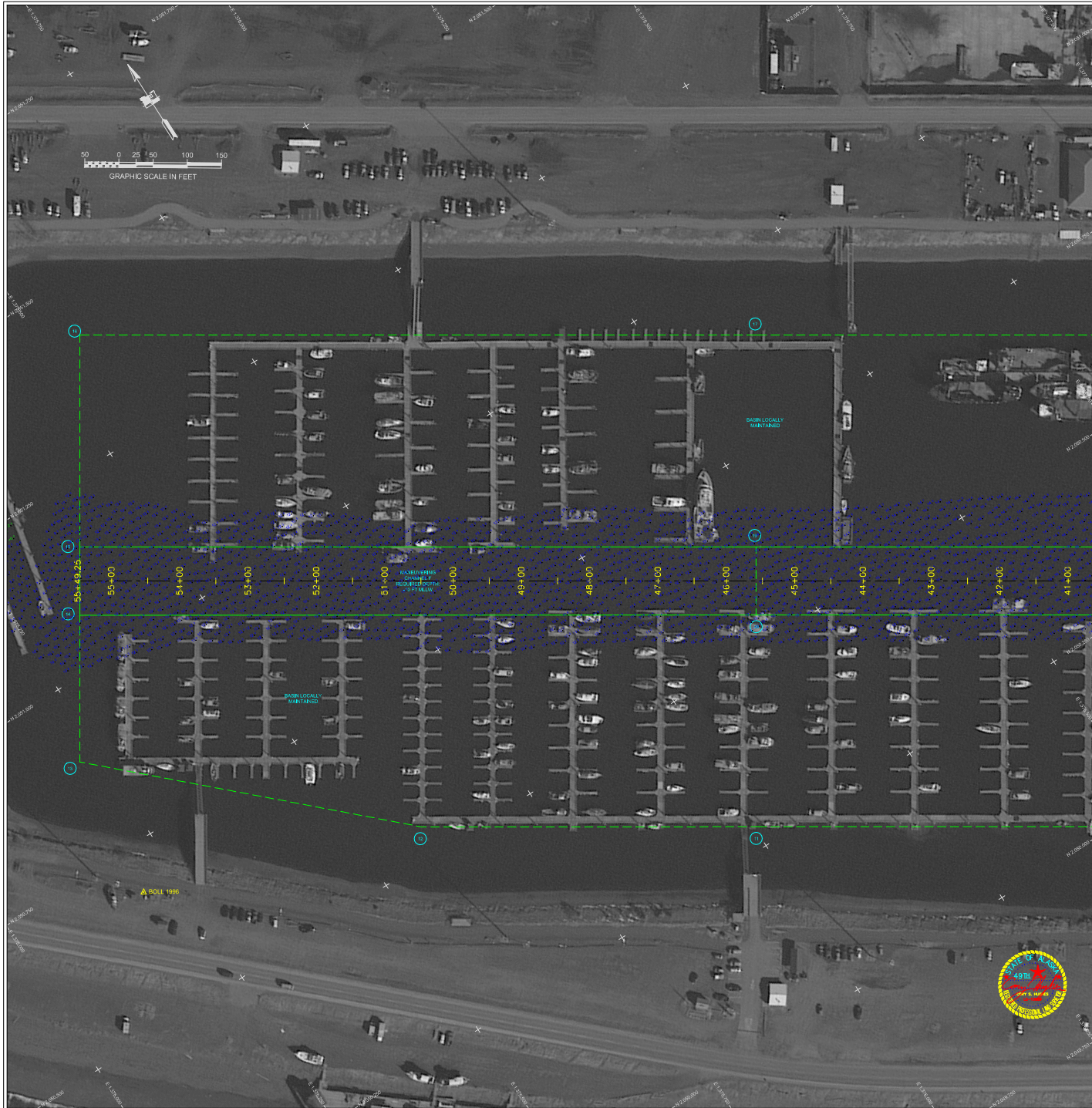
AREA	AVAILABLE TO DD	AVAILABLE SS	AVAILABLE BETWEEN DD AND MP	AVAILABLE TO DD	AVAILABLE SS	AVAILABLE BETWEEN DD AND MP	MLLW (FT)	CU. YD.
AREA A: OUTER ENTRANCE CHANNEL	AVAILABLE TO DD	-20.0	-21.0	VARIES	VARIES	VARIES	-20.0	118
	AVAILABLE BETWEEN DD AND MAX PAY DEPTH (MP)	-21.0	-21.0	VARIES	VARIES	VARIES	-21.0	988
	AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	VARIES	VARIES	VARIES	VARIES	VARIES	318
AREA B: USCG BASIN AREA	AVAILABLE TO DD	-22.0	-26	VARIES	VARIES	VARIES	-22.0	338
	AVAILABLE BETWEEN DD AND MP	-23.0	-27	VARIES	VARIES	VARIES	-23.0	301
	AVAILABLE SS	VARIES	VARIES	VARIES	VARIES	VARIES	VARIES	2,181
AREA C: INNER CHANNEL AREA	AVAILABLE TO DD	-20.0	-475	VARIES	VARIES	VARIES	-20.0	475
	AVAILABLE BETWEEN DD AND MP	-21.0	-912	VARIES	VARIES	VARIES	-21.0	912
	AVAILABLE SS	VARIES	VARIES	VARIES	VARIES	VARIES	VARIES	2,470
AREA D: MANEUVERING AREA	AVAILABLE TO DD	-20.0	-116	VARIES	VARIES	VARIES	-20.0	116
	AVAILABLE BETWEEN DD AND MP	-21.0	-1,511	VARIES	VARIES	VARIES	-21.0	1,511
	AVAILABLE SS AT 3:1 (H:V) & 25' WIDE	VARIES	VARIES	VARIES	VARIES	VARIES	VARIES	14
AREA E: MANEUVERING AREA	AVAILABLE TO DD	-15.0	-129	VARIES	VARIES	VARIES	-15.0	129
	AVAILABLE BETWEEN DD AND MP	-16.0	-504	VARIES	VARIES	VARIES	-16.0	504
	AVAILABLE SS AT 3:1 (H:V) & 25' WIDE	VARIES	VARIES	VARIES	VARIES	VARIES	VARIES	89
AREA F: MANEUVERING AREA	AVAILABLE TO DD	-10.0	-7	VARIES	VARIES	VARIES	-10.0	7
	AVAILABLE BETWEEN DD AND MP	-11.0	-18	VARIES	VARIES	VARIES	-11.0	18
	AVAILABLE SS AT 3:1 (H:V) & 25' WIDE	VARIES	VARIES	VARIES	VARIES	VARIES	VARIES	0
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)								10,537

US Army Corps of Engineers
ALASKA DISTRICT

HOMER, ALASKA
HOMER HARBOR
PRE DREDGE SURVEY
SEPTEMBER 8, 2015

SHEET IDENTIFICATION
V-102
Sheet 2 of 3





NOTES

1. PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 IN US SURVEY FEET BASED ON A FULLY CONTROLLED STATE GPS NETWORK HOLDING THE PUBLISHED NA83/83/83/83/0000 SPECIAL VALUES OF NEG COGS BY RANGE, TENSE COGS APPROXIMATE AND USACE "NAD83/83/83/83/0000" DATA. "HEAVY-DUTY" LOCAL HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, IN FEET, NAD 83. LOCAL USACE SBC NUMBER BENCH MARK IS 7849712.0, E. 177.964.8 AND USACE SBC TYPICAL ACN 7849712.0, E. 177.964.8.
2. VERTICAL CONTROL IS MEAN LOW WATER (MLW) IS BASED ON THE HOANAN'S TIDAL BENCH MARK SET FOR STATION 7845307, HOMER, ALASKA PUBLISHED IN 1920. THIS TIDAL DATUM IS BASED ON THE HIGHEST TIDAL STAGE AND IS REPRESENTED BY HOLDING SBC TYPICAL AS SHOWN.
3. SOUNDINGS ARE IN FEET AND ARE NEGATIVE UNLESS OTHERWISE INDICATED.
4. THIS DRAWING IS PRELIMINARY OF CONDITIONS AT THE TIME OF SURVEY.
5. BATHYMETRY WAS COLLECTED SEPTEMBER 8, 2015. SOUNDINGS WERE COLLECTED USING A "SONIC 302" WATERTIGHT SOUNDING AT 120" SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN OCEAN BEAM PROSOUND VELOCITY PROFILE. POSITIONING AND VELOCITY AT THE SURVEY WERE MEASURED USING A KONGER PPT-100. RTK CORRECTED DATA WERE COLLECTED FROM A LOCAL BASE STATION OCCUPYING "HOMER-BENCH" DATA WAS COLLECTED AND FIELD PROCESSED USING "TRIMBLE 2015" SOFTWARE. SEE ELEVATIONS WERE MEASURED USING A "TRIMBLE" REFLECT SYSTEM.
6. THE CONTROL VALUES SHOWN ON THIS PLAN WERE VERIFIED PRIOR TO THIS PRELIMINARY SURVEY AND HELD AS PUBLISHED.
7. MAP SOUNDINGS ARE SORTED AT 10 FEET FROM A 1 FOOT CELL CENTER. SHAL DEPTHS SURVEY AND HELD AS PUBLISHED.

SURVEY CONTROL DATA

STATION	NORTHING	EASTING	MLLW	DESCRIPTION
AUDREY	2,051,507.88	1,375,406.60	33.31	1-1/2 IN ALUMINUM CAP (FOUND)
BL-24, 1989	2,049,793.81	1,378,015.52	32.49	USACE SBC (FOUND)
BM NO 8, 1985			27.28	USCGC SBC (NOT FOUND)
BOLL, 1996	2,050,682.28	1,375,195.75	35.48	3-1/4 IN FLAT BRASS CAP (FOUND)
C 103, 1965			26.95	USCGC SBC (NOT FOUND)
HB-08, 2009	2,050,150.78	1,377,830.73	31.92	3-1/4 IN DOMED ALUMINUM CAP (FOUND)
HB-09, 2009	2,051,199.61	1,375,120.24	32.01	3-1/4 IN DOMED ALUMINUM CAP (FOUND)
HOMER BASIN 4, 1985	2,050,038.11	1,378,340.09	31.28	USACE SBC (NOT SEARCHED)
HOMER BASIN 5, 1985	2,049,940.32	1,378,344.30	30.87	USACE SBC (FOUND, NOT GPS SUITABLE)
HOMER BASIN 6, 1985	2,049,887.28	1,378,073.96	31.21	USACE SBC (FOUND)
HOMER BASIN 7, 1985	2,048,712.22	1,377,964.36	31.48	USACE SBC (FOUND)

NAVIGATION AIDS

USCG NO.	NORTHING	EASTING	DESCRIPTION
28210	2,049,940	1,378,351	HOMER BREAKWATER LIGHT 2
28216	2,049,932	1,378,484	SOUTH LIGHTED MOORING BUOY

VOLUME COMPUTATIONS

AREA	AVAILABLE TO DD	AVAILABLE SS	AVAILABLE BETWEEN DD AND MP	MLLW (FT)	CU. YD.
AREA A: OUTER ENTRANCE CHANNEL	AVAILABLE TO DREDGE DEPTH (DD)			-20.0	118
	AVAILABLE BETWEEN DD AND MAX PAY DEPTH (MP)			-21.0	988
	AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE				VARIES
AREA B: USCG BASIN AREA	AVAILABLE TO DD			-22 TO -26	338
	AVAILABLE BETWEEN DD AND MP			-23 TO -27	301
	AVAILABLE SS				VARIES
AREA C: INNER CHANNEL AREA	AVAILABLE TO DD			-20.0	475
	AVAILABLE BETWEEN DD AND MP			-21.0	912
	AVAILABLE SS				VARIES
AREA D: MANEUVERING AREA	AVAILABLE TO DD			-20.0	116
	AVAILABLE BETWEEN DD AND MP			-21.0	1,511
	AVAILABLE SS AT 3:1 (H:V) & 25' WIDE				VARIES
AREA E: MANEUVERING AREA	AVAILABLE TO DD			-15.0	129
	AVAILABLE BETWEEN DD AND MP			-16.0	504
	AVAILABLE SS AT 3:1 (H:V) & 25' WIDE				VARIES
AREA F: MANEUVERING AREA	AVAILABLE TO DD			-10.0	7
	AVAILABLE BETWEEN DD AND MP			-11.0	18
	AVAILABLE SS AT 3:1 (H:V) & 25' WIDE				VARIES
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)					10,537

US ARMY CORPS OF ENGINEERS
ALASKA DISTRICT

PROJECT NAME: HOMER HARBOR PRE DREDGE SURVEY
 SHEET NO.: 103 OF 103
 DATE: SEPTEMBER 8, 2015

DRAWN BY: []	CHECKED BY: []
DESIGNED BY: []	APPROVED BY: []
CHECKED BY: []	DATE: []

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

REGISTRATION DIVISION

REGISTERED PROFESSIONAL ENGINEER

NO. 103

SEPTEMBER 8, 2015

HOMER, ALASKA

HOMER HARBOR

PRE DREDGE SURVEY

SEPTEMBER 8, 2015

SHEET IDENTIFICATION

V-103

Sheet 3 of 3