



NOTES

- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83 (2011), IN US SURVEY FEET BASED ON A FULLY CONSTRAINED STATIC GPS NETWORK HOLDING THE PUBLISHED NAD83 (2011)2010.00 EPOCH VALUES OF NGS CORS STATIONS: "JUNEAU WAAS 1 CORS ARP" (JN1 - PID DF4367); "KLAUWOKAIRAK 2006 CORS ARP" (AB49 - PID DM7451) AND "LEVEL ISLAND 6 CORS ARP" (LEV6 - PID DJ3035). LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83, IN US SURVEY FEET HOLDING "SBC 'DH-C 2000' AS N 2,353,359.31, E 2,546,726.69 AND USACE SBC 'RAMP 1975' AS N 2,353,048.30, E 2,547,438.98
- VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0'), BASED ON THE NOAA/NOS TIDAL BENCH MARK LIST: "945 2210 JUNEAU, CASTNEAU CHANNEL, STEPHENS PASS, ALASKA" PUBLISHED 05/02/2014. THIS TIDAL DATUM IS BASED ON THE 2007-2011 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/NOS TIDAL BENCH MARK "2210 C 1982" (VM# 1196) AS 29.96'
- VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON NAVD88 (GEOID 12B) ELEVATIONS HOLDING NGS BENCHMARK "DH-C 2000" AS 20.53'
- SOUNDINGS ARE IN U.S. FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED DECEMBER 14-17, 2015. SOUNDINGS WERE COLLECTED USING AN R2SONIC 2022 MULTIBEAM ECHOSOUNDER OPERATING AT 200 KHZ. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN AML BASE X SOUND VELOCITY PROBE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLIX POSNAV OCEANMASTER V5 SYSTEM. DATA WAS COLLECTED AND PROCESSED USING QINSY 8.1 SOFTWARE. HORIZONTAL CONTROL WAS SURVEYED USING RTK GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING DIFFERENTIAL LEVELING TECHNIQUES.
- THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
- MAP SOUNDINGS ARE BINNED AT 24 FEET AND ARE MEAN. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE MEAN.

SURVEY CONTROL DATA

STATION	NORTHING	EASTING	MLLW	DESCRIPTION
DH-3	2,354,095.52	2,546,951.23	26.26	3.25" DSBC
DH-C 2000	2,353,359.31	2,546,726.69	25.97	3.25" DSBC
DH-D 2000	2,353,103.36	2,547,126.72	25.67	3.25" DSBC
DHAR	2,353,388.57	2,547,704.09	24.02	3.5" USACE BRASS CAP
DL-1 1978	2,353,650.68	2,547,782.25	64.40	3.5"USACE BRASS CAP
RAMP 1975	2,353,048.30	2,547,438.98	23.30	3.5" USACE BRASS CAP

NAVIGATION AIDS

USCG NO.	NORTHING	EASTING	DESCRIPTION
23680	2,353,940	2,547,137	DOUGLAS BOAT HARBOR LIGHT ID

FEDERAL DREDGE BASIN

CORNER#	NORTHING	EASTING
1	2,353,746.99	2,547,214.45
2	2,353,443.04	2,547,023.77
3	2,353,381.92	2,547,121.19
4	2,353,353.12	2,547,103.12

FEDERAL DREDGE BASIN

CORNER#	NORTHING	EASTING
5	2,353,177.75	2,547,382.66
6	2,353,499.66	2,547,584.60
7	2,353,712.22	2,547,245.76

VOLUME COMPUTATIONS

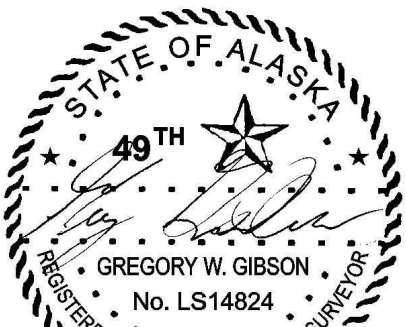
	MLLW	CU. YD.
AVAILABLE TO PROJECT DEPTH (PD)	-13.0	30
AVAILABLE TO REQUIRED DEPTH (RD)	-14.0	105
AVAILABLE TO MAX PAY DEPTH (MP)	-15.0	1,458
AVAILABLE SIDE SLOPES (SS) AT 2:1 (H:V)	VARIES	399
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)		1,857
TOTAL PAYABLE VOLUME REMOVED		26,217
TOTAL VOLUME REMOVED		30,434

DISPOSAL BASE LINE

BASE LINE	NORTHING	EASTING
DISP BL-5	2,355,554.60	2,547,981.16
DISP BL-6	2,352,824.80	2,550,904.88

HARBOR BASE LINE

BASE LINE	NORTHING	EASTING
N-S BL1	2,353,126.57	2,547,087.90
N-S BL2	2,353,719.55	2,547,459.89
E-W BL3	2,353,669.51	2,546,956.31
E-W BL4	2,353,244.38	2,547,634.00



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

David R. Neff C.H. (275)

US Army Corps of Engineers  
ALASKA DISTRICT

CONTRACT NO. W0110B-15-C-0017  
CONTRACTOR: Western Marine Consultants  
CITY: Seattle  
STATE: Washington  
APPROVED: [Signature]  
DATE: [Blank]

DATE: [Blank] BY: [Blank] DESCRIPTION: [Blank]

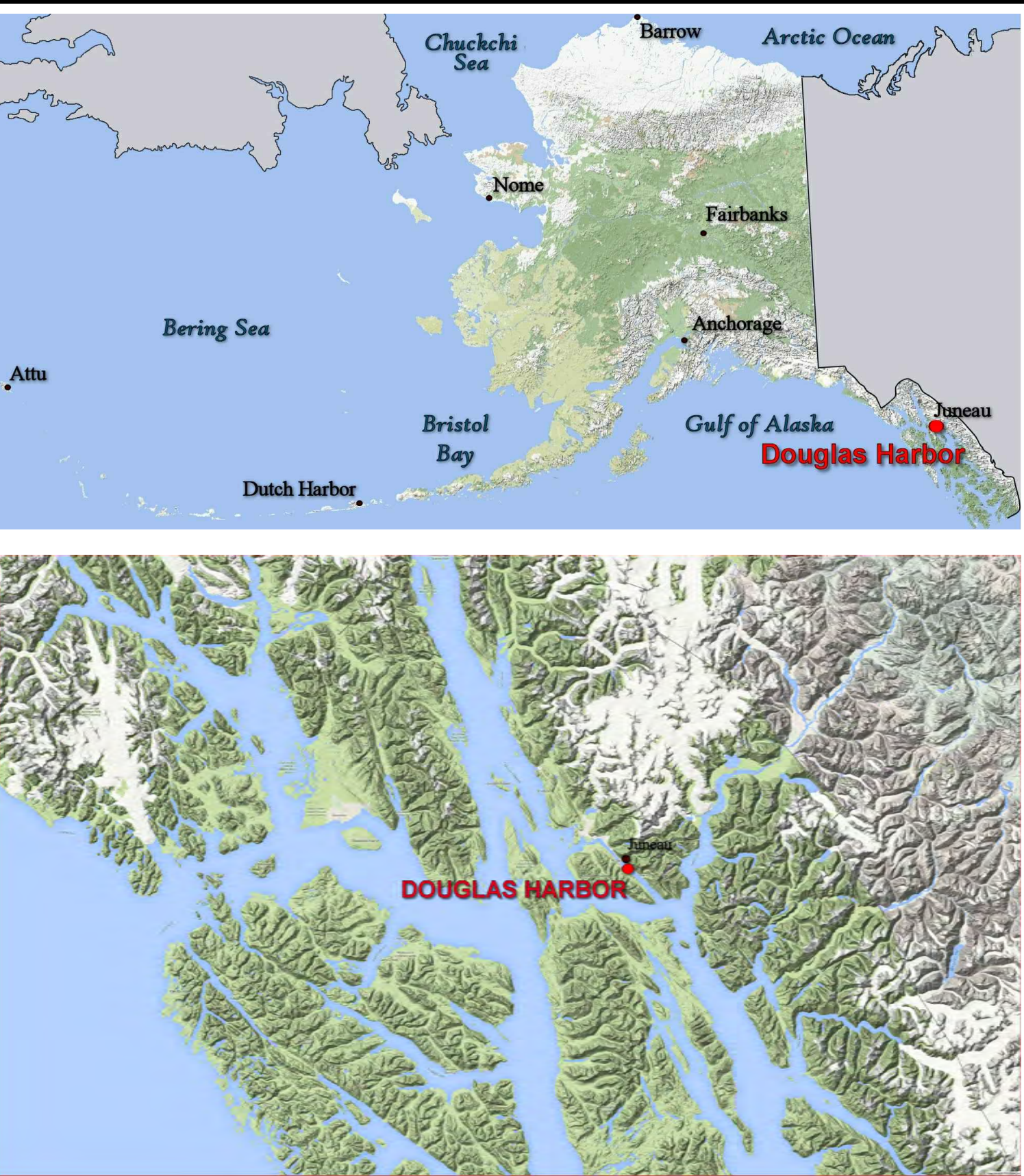
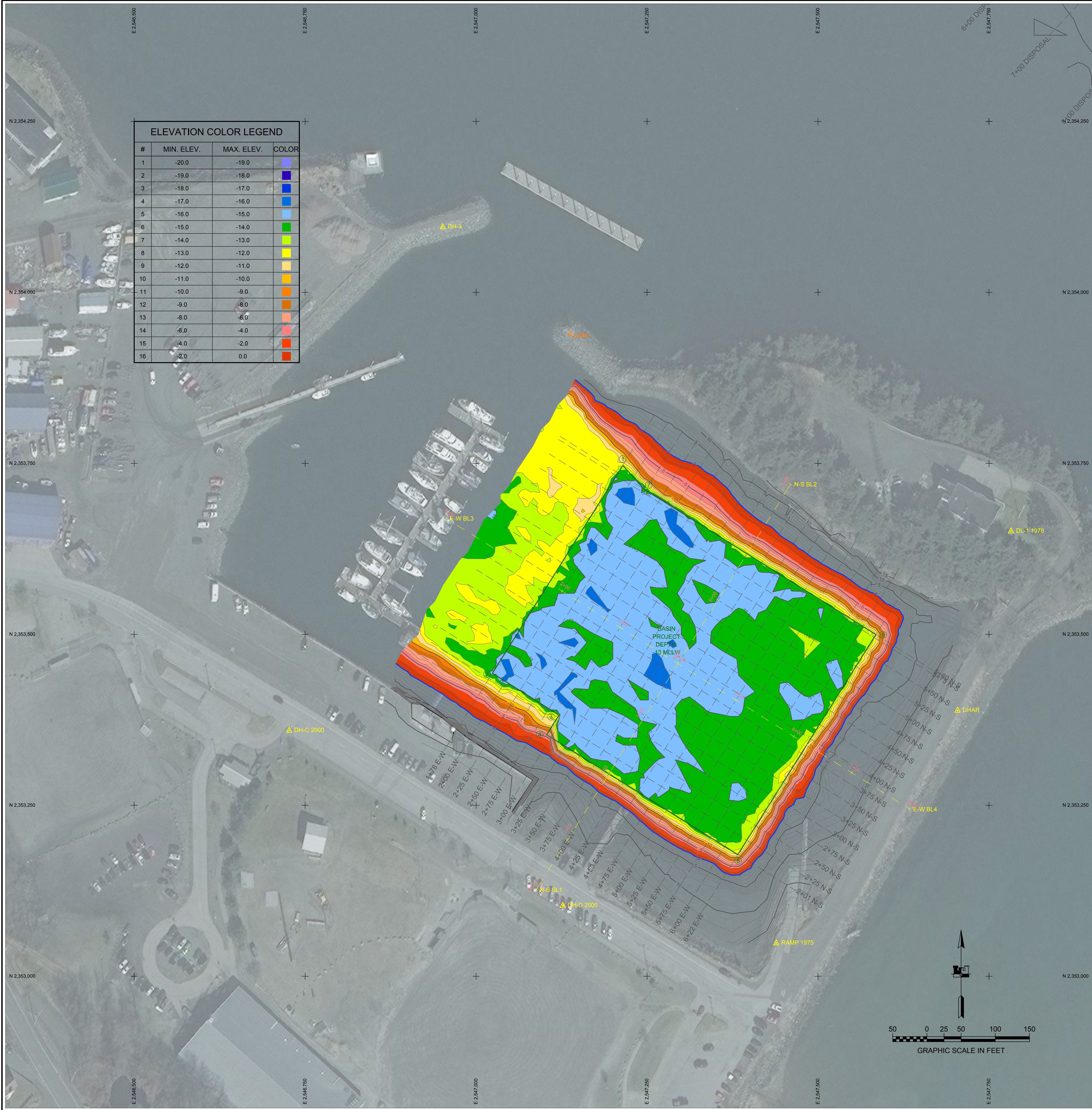
14 January 2016  
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DRAWN BY: [Blank]  
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Thomas R. Neff, Chief of District Office  
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U.S. ARMY CORPS OF ENGINEERS  
ALASKA DISTRICT  
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DOUGLAS, ALASKA  
DOUGLAS HARBOR  
HYDROGRAPHIC SURVEY  
December 14 - December 17 2015

SHEET IDENTIFICATION  
V-101  
Sheet 1 of 17





- NOTES**
1. PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83 (2011), IN US SURVEY FEET BASED ON A FULLY CONSTRAINED STATIC GPS NETWORK HOLDING THE PUBLISHED NAD83 (2011)2010.00 EPOCH VALUES OF NGS CORS STATIONS: "JUNEAU WAAS 1 CORS ARP" (JNU1 - PID DF4367); "KLAUWOKAIRAK 2006 CORS ARP" (AB49 - PID DM7451) AND "LEVEL ISLAND 6 CORS ARP" (LEV6 - PID DJ3035).
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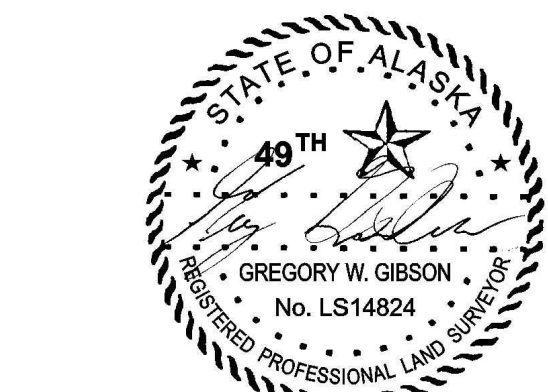
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US Army Corps of Engineers  
ALASKA DISTRICT

CONTRACT NO. W01H015-C-0017  
CONTRACTOR: Western Marine Commission  
CITY: Seattle  
STATE: Washington  
APPROVED: [Signature]  
DATE: [Date]

FILE NAME: [File Name]  
FILE SIZE: [File Size]  
FILE DATE: [File Date]

14 January 2016  
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DOUGLAS, ALASKA  
DOUGLAS HARBOR  
HYDROGRAPHIC SURVEY  
December 14 - December 17 2015

SHEET IDENTIFICATION  
V-102  
Sheet 2 of 17







