

SHEET 2



SHEET 3

NAVIGATION AIDS				
NO.	NORTHING	EASTING	DESCRIPTION	
23675	2,353,828	2,547,756	JUNEAU ISLE LIGHT FI W 2.5S	
23680	2,353,938	2,547,134	DOUGLAS BOAT HARBOR LIGHT 1D FI G 4S	

PROJECT LIMITS			PROJECT LIMITS		
CORNER#	NORTHING	EASTING	CORNER#	NORTHING	EASTING
1	2,354,066.88	2,547,209.48	6	2,353,177.75	2,547,382.67
2	2,353,996.82	2,547,170.85	7	2,353,390.32	2,547,043.82
3	2,353,902.86	2,547,075.14	8	2,353,793.90	2,547,042.64
4	2,353,715.80	2,547,242.58	9	2,353,919.80	2,546,987.88
5	2,353,499.63	2,547,584.56	10	2,353,858.52	2,547,114.83

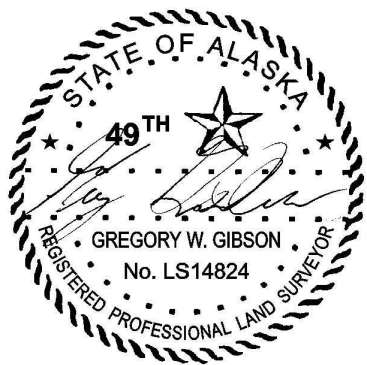
Curve Table			
Curve #	Length	Radius	Delta
C1	328.23	149.25	126°00'14"
C2	179.18	70.00	146°39'25"

VOLUME COMPUTATIONS		
AREA A: ENTRANCE & ACCESS CHANNEL		
AVAILABLE TO PD	-12.0	23
AVAILABLE TO MP	-13.0	103
AVAILABLE SS AT 3:1 (H:V) & 25' WIDE	VARIES	183
AREA B: MOORING BASIN		
AVAILABLE TO PD	-12.0	206
AVAILABLE TO MP	-13.0	883
AVAILABLE SS AT 3:1 (H:V) & 25' WIDE	VARIES	937
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)		2,106

OBSTRUCTION DATA				
ID	NORTHING	EASTING	DEPTH	APPROX SIZE (FEET)
OBST-1	2,353,563.5	2,547,097.7	-11.1	6X5X3

LEGEND

MANHOLE	□
CATCH BASIN	⊠
CULVERT	<
WATER VALVES	⊠
SINGS	○
GUARD POST	●
ELECTRICAL METERS	⊠
ELECTRICAL SWITCH BOX	⊠
GUY WIRE ANCHOR	↪
POWER POLE	●
POWER POLE WITH LIGHT	●⊕
LIGHT POLE	○⊕
TRANSFORMER WITH PAD	⊠
TRANSFORMER	▲
FIRE HYDRANT	⊕
OVERHEAD ELECTRIC LINE	— OH/E —
FENCE LINE	— x —
BUILDING	///



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

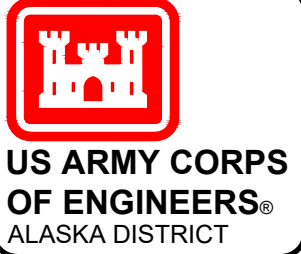
Gregory W. Gibson (317)



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" (JNU1 - PID DF4367); "KLAWOCKAIRAK 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: "9452210 JUNEAU, GASTINEAU CHANNEL, STEPHENS PASS, ALASKA" PUBLISHED 02/16/2018. THIS TIDAL DATUM IS BASED ON THE 2012-2016 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/NOS TIDAL BENCH MARK "945 2210 C" (VM# 1196) AS 30.19'.
- VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON NAVD88 (GEOID 12B) ELEVATIONS HOLDING NGS BENCHMARK "DH-C 2000" (PID BBGJ87) AS 22.74'.
- SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED MARCH 21-23, 2019. SOUNDINGS WERE COLLECTED USING AN R2SONIC 2020 MULTIBEAM ECHOSOUNDER OPERATING AT 400 KHZ. SOUND VELOCITY THOUGH THE WATER COLUMN WAS DETERMINED WITH AN 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 "DH-C 2000". 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 & STATIC GNSS EQUIPMENT AND TECHNIQUES.
- TERRESTRIAL LASER SCANNING DATA WAS COLLECTED MARCH 21-23, 2019. DATA WAS COLLECTED USING A RIEGL VZ400 LASER SCANNER AND PROCESSED USING QINSY 8.1 SOFTWARE AND RIEGL RISCAN PRO SOFTWARE. POSITION AND VESSEL 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
945 2210 M	2,362,530.33	2,542,076.08	27.62	3-1/2" NOS DOMED BC
DH-3	2,354,095.52	2,546,951.23	26.49	3" DOMED BC
DH-C 2000	2,353,359.31	2,546,726.69	26.30	3-1/4" SBC
DH-D 2000	2,353,103.36	2,547,126.72	26.02	3-1/4" SBC
DHAR	2,353,388.57	2,547,704.09	24.26	3-1/2" USACE DOMED BC
DL-1 1978	2,353,650.68	2,547,782.85	64.94	3-1/2" USACE DOMED BC
RAMP 1975	2,353,048.30	2,547,438.98	23.57	3-1/2" USACE DOMED BC



REV.	DATE	BY	APPR.	DESCRIPTION

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 204 3RD STREET DIER, ALASKA 99506-0888	SURVEYED BY: GREGORY W. GIBSON DRAWN BY: ROBERT GOUGHNOUR CHECKED BY: TASJBG/GWG APPROVED BY: TASJBG/GWG	UPC: 072789	PLOT DATE: 13 MAY 2019	TASK ORDER NO.: WB1TKB19F0034	JOB NO.: 1219	SCALE: 1" = 100'	CONTRACTOR: LEWIS INC.	STATE: ALASKA	CITY: WASILLA

DOUGLAS, ALASKA

072789 - DOUGLAS HARBOR

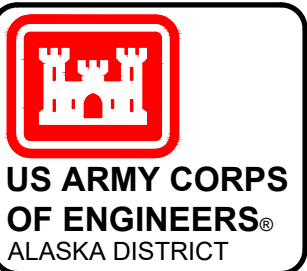
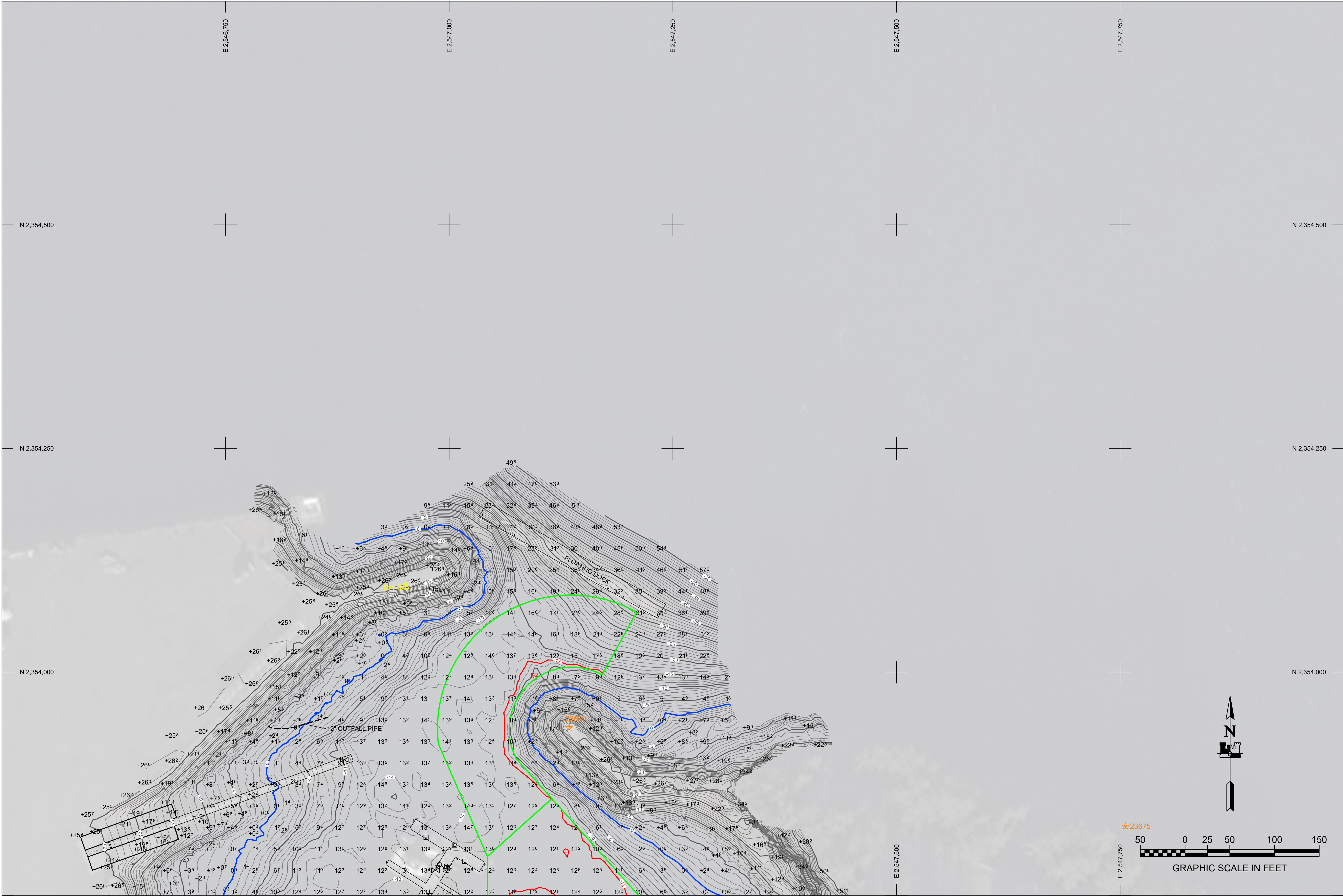
PROJECT CONDITION SURVEY

MARCH 18 - MARCH 24, 2019

REFERENCE NUMBER:

1-DOU-92-07-09

SHEET 1 OF 4

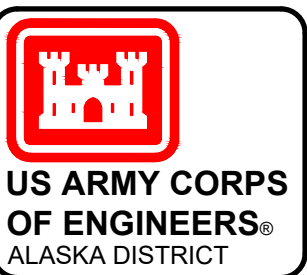
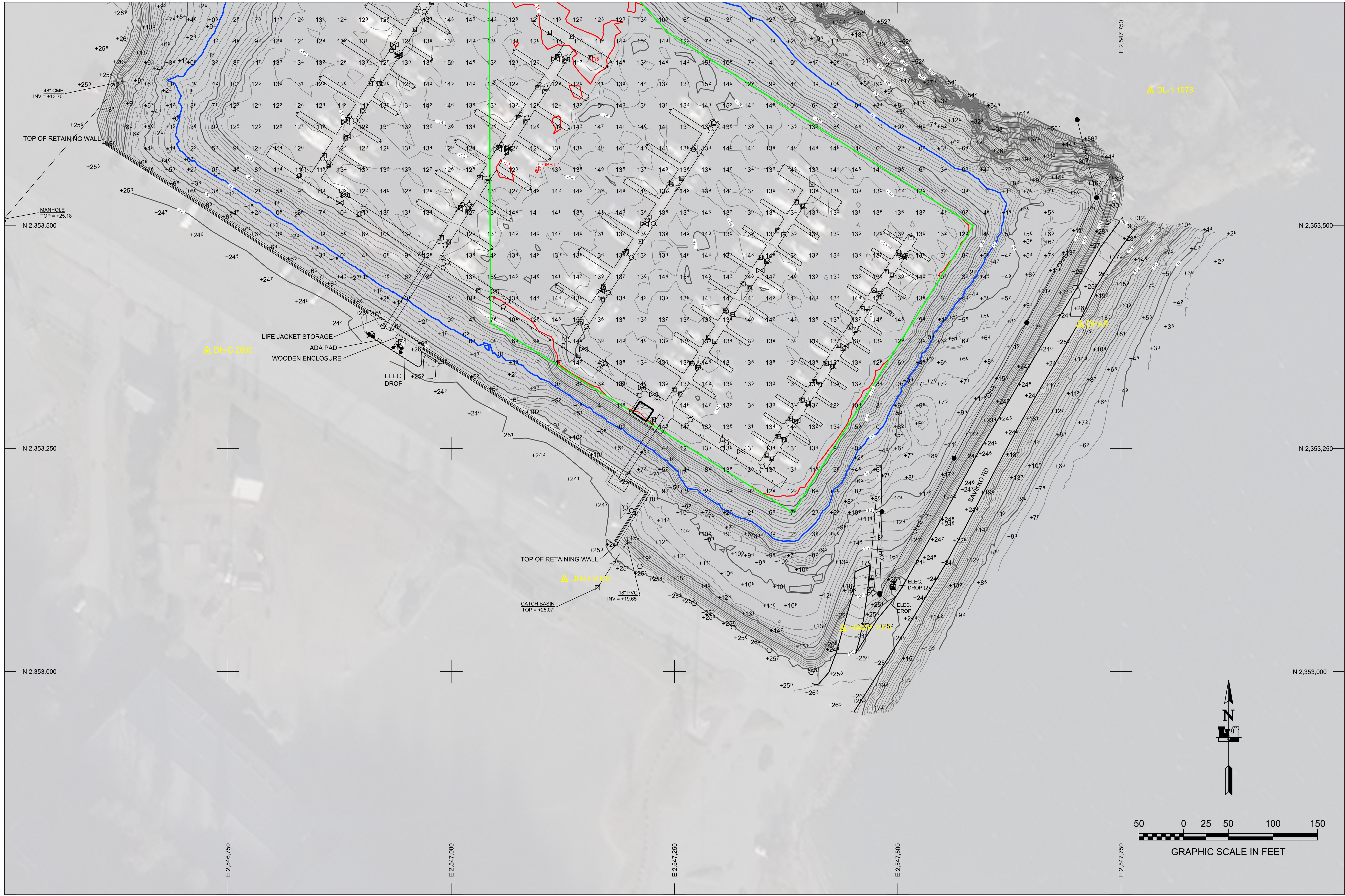


REV.	DATE	BY	APPR.	DESCRIPTION

	SURVEYED BY: GREGORY W. GIBSON	UPC: 072789	CONTRACT NO.: W911KB-16-D-0014
	DRAWN BY: ROBERT GOUGHNOUR	PLOT DATE: 13 MAY 2019	TASK ORDER NO.: W911KB19F0034
	CHECKED BY: TASJGGWG	SIZE: ANSI D	JOB NO.: 1219
	APPROVED BY: TASJGGWG	CHIEF GEOMATICS SECTION	CONTRACTOR: ETEC INC.
	FILE: 072789_VH01.DWG	STATE: ALASKA	CITY: WASILLA

DOUGLAS, ALASKA
072789 - DOUGLAS HARBOR
PROJECT CONDITION SURVEY
MARCH 18 - MARCH 24, 2019

REFERENCE
NUMBER:
1-DOU-92-07-09
SHEET 2 OF 4



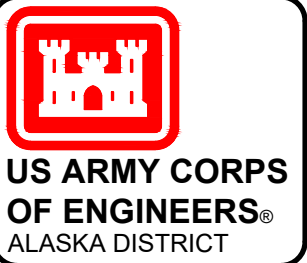
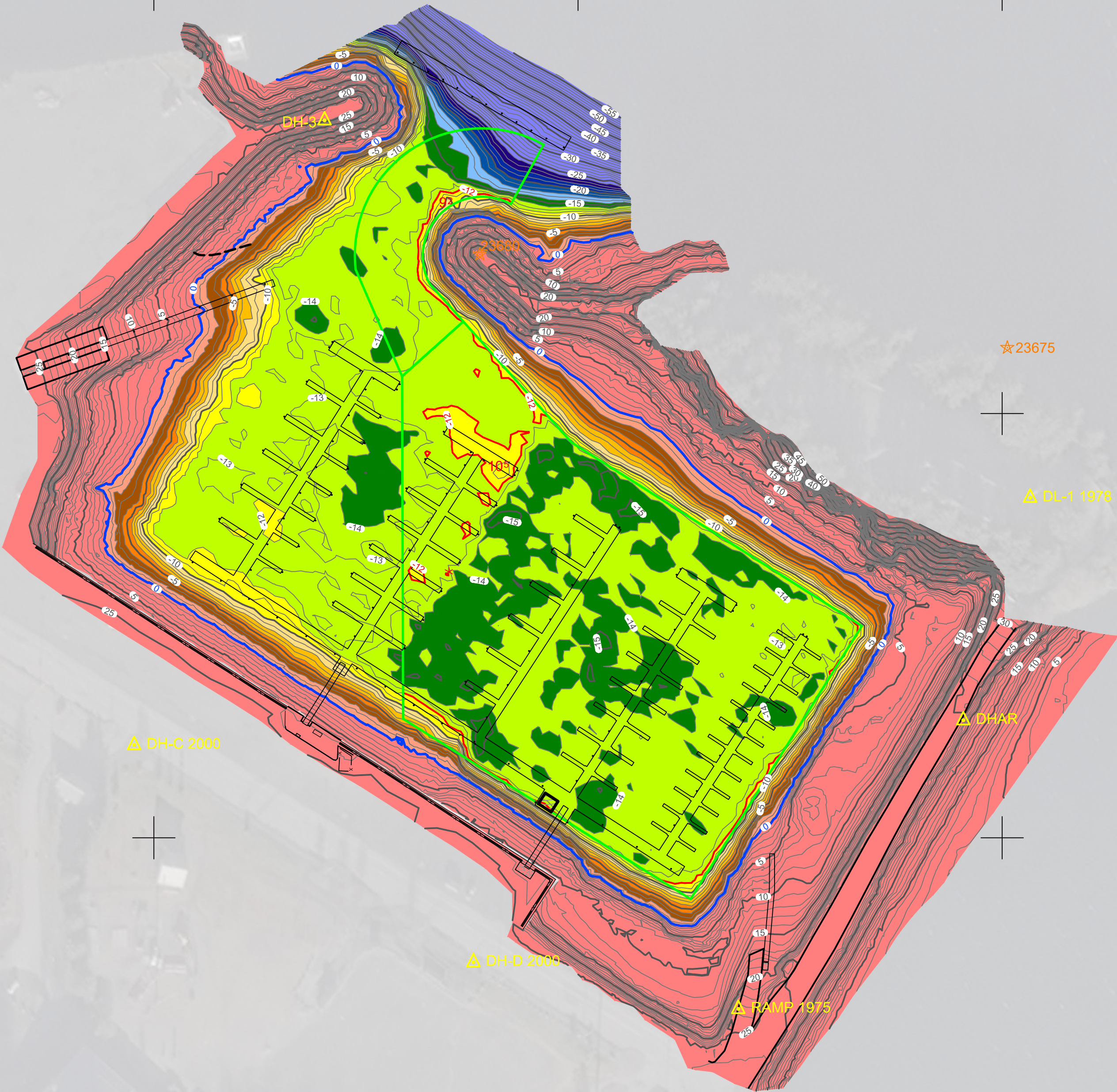
REV.	DATE	BY	APPR.	DESCRIPTION

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 204 3RD STREET BER ALASKA 99506-0888	SURVEYED BY: GREGORY W. GIBSON	UPC: 072789	CONTRACT NO.: W81TK18-18-D-0014
	DRAWN BY: ROBERT GOUGHNOUR	PLOT DATE: 13 MAY 2019	TASK ORDER NO.: W81TK19F0034
	CHECKED BY: TASJBG/NG	SIZE: ANSI D	JOB NO.: 1219
	APPROVED BY: TASJBG/NG	SCALE: 1" = 50'	TRACTOR: LEWIS INC.
FILE: 072789_VH01.DWG		CHIEF GEOMATICS SECTION	STATE: ALASKA
		CITY: WASILLA	

DOUGLAS, ALASKA
072789 - DOUGLAS HARBOR
PROJECT CONDITION SURVEY
MARCH 18 - MARCH 24, 2019

REFERENCE
NUMBER:
1-DOU-92-07-09
SHEET 3 OF 4

ELEVATION COLOR LEGEND			
#	MIN. ELEV.	MAX. ELEV.	COLOR
1	-57.2	-24.0	
2	-24.0	-22.0	
3	-22.0	-20.0	
4	-20.0	-18.0	
5	-18.0	-16.0	
6	-16.0	-14.0	
7	-14.0	-12.0	
8	-12.0	-10.0	
9	-10.0	-8.0	
10	-8.0	-6.0	
11	-6.0	-4.0	
12	-4.0	-2.0	
13	-2.0	0.0	
14	0.0	56.0	



REV.	DATE	BY	APPR.	DESCRIPTION

 U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 2204 3RD STREET BER, ALASKA 99506-0888	SURVEYED BY: GREGORY W. GIBSON	UPC: 072789	CONTRACT NO.: W911KB-16-D-0014
	DRAWN BY: ROBERT GOUGHNOUR	PLOT DATE: 13 MAY 2019	TASK ORDER NO.: W911KB19F0034
	CHECKED BY: TASJBGWG	SIZE: ANSI D	JOB NO.: 1219
	APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION	SCALE: 1" = 100'	CONTRACTOR: ETEC INC.
FILE: 072789_VH01.DWG		CITY: WASILLA	STATE: ALASKA

DOUGLAS, ALASKA
072789 - DOUGLAS HARBOR
PROJECT CONDITION SURVEY
MARCH 18 - MARCH 24, 2019

REFERENCE
NUMBER:
1-DOU-92-07-09
SHEET 4 OF 4