



NAVIGATION AIDS			
NO.	NORTHING	EASTING	DESCRIPTION
27105	489,848	1,951,999	HUMBOLDT HARBOR BREAKWATER LIGHT 2 FI R 2.5S
27110	489,896	1,952,476	HUMBOLDT HARBOR BREAKWATER LIGHT 3 FI G 2.5S

PROJECT LIMITS			PROJECT LIMITS		
CORNER#	NORTHING	EASTING	CORNER#	NORTHING	EASTING
1	489,761.55	1,952,295.45	4	489,455.15	1,952,276.11
2	489,664.04	1,952,427.28	5	489,528.10	1,952,180.83
3	489,626.28	1,952,407.13	6	489,699.23	1,952,311.85

VOLUME COMPUTATIONS		
AREA A: ENTRANCE CHANNEL	MLLW=0	CU. YD.
AVAILABLE TO PROJECT DEPTH (PD)	-18.0	0
AVAILABLE TO MAX PAY DEPTH (MP)	-19.0	6
AVAILABLE SIDE SLOPES (SS) AT 3:1 (H:V) & 25' WIDE	VARIES	142
TOTAL MAXIMUM VOLUME AVAILABLE (MP + SS)		148

OBSTRUCTION AND OBJECTS DATA				
ID	NORTHING	EASTING	DEPTH	APPROX SIZE (FEET)
OBJ-001	489,548.2	1,952,121.7	-21.7	PILE 12X2X1
OBJ-002	489,565.2	1,952,581.2	-7.5	ROCK 4X3X2
OBJ-003	489,385.1	1,952,455.9	-14.8	DEBRIS 7X3X2
OBJ-004	489,081.2	1,952,075.0	-17.5	PILE 20X2X2
OBST-001	489,592.2	1,952,350.8	-16.2	ROCK 4X4X3

LEGEND

VALVE	⊠
GUARD POST	●
ELECTRICAL PEDESTAL	⊞
ELECTRICAL SWITCH BOX	⊞
TV PEDESTAL	⊞
TRANSFORMER	▲
TRANSFORMER PAD	■
FIRE HYDRANT	⦿
BUILDING	▧
FENCE	— x —



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 "COLD BAY WAAS 8 CORS ARP" (NGS PID DL6500), "PORT HEIDEN AK 2007 CORS ARP" (NGS PID DL6447) AND "PILOT POINT AK 2007 CORS ARP" (NGS PID DL7671).
- LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 7, NAD83, IN US SURVEY FEET HOLDING USACE SBC/NOAA TIDAL BENCH MARK "1293-1 1984" (PID BBBB50/VM#13744) AS N 489,768.32', E 1,952,169.16'.
- VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0'), BASED ON THE NOAA/NOS TIDAL BENCH MARK LIST: "945 9450, SAND POINT, POPOF ISLAND, ALASKA" PUBLISHED 10/06/2011. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/NOS TIDAL BENCH MARK "9450 R 1991" (VM#4587) AS 15.07' AND NOAA/NOS TIDAL BENCH MARK "9450 S 1991" (VM#4588) AS 15.06'.
- VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 (GEOID 12B) ELEVATIONS HOLDING NOAA/USACE TIDAL BENCHMARK "1293-1 1984" (PID BBBB50/VM#13744) AS 10.76'.
- SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- BATHYMETRY WAS COLLECTED MAY 17 & 18, 2019. SOUNDINGS WERE COLLECTED USING AN R2SONIC 2020 MULTIBEAM ECHOSOUNDER OPERATING AT 400 KHZ. SOUND VELOCITY THROUGH 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 "1293-1 1984". 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.
- TERRESTRIAL LASER SCANNING DATA WAS COLLECTED MAY 17 & 18, 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.

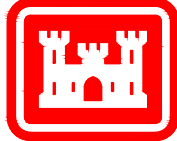
SURVEY CONTROL DATA				
STATION	NORTHING	EASTING	MLLW	DESCRIPTION
1293-1 1984	489,768.32	1,952,169.16	11.68	3.5 INCH USACE DOMED BC
1293-4 1984	490,766.47	1,952,699.10	13.43	3.5 INCH USACE DOMED BC
1293-5 1984	490,597.90	1,952,475.17	13.64	3.5 INCH USACE DOMED BC
1293-6 1984	489,883.97	1,952,475.01	13.47	3.5 INCH USACE DOMED BC
HH-1 1998	490,239.72	1,953,593.75	12.56	3.25 INCH USACE DOMED SBC
HH-3 2002	491,398.99	1,953,218.02	23.71	3.25 INCH USACE DOMED SBC
SP-2 2010	488,718.34	1,951,677.49	15.28	3 INCH USACE DOMED SBC



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

Gregory W. Gibson

Gregory W. Gibson (317)



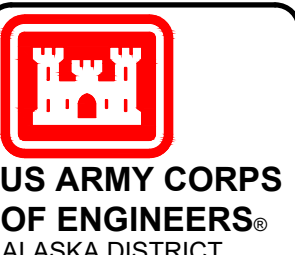
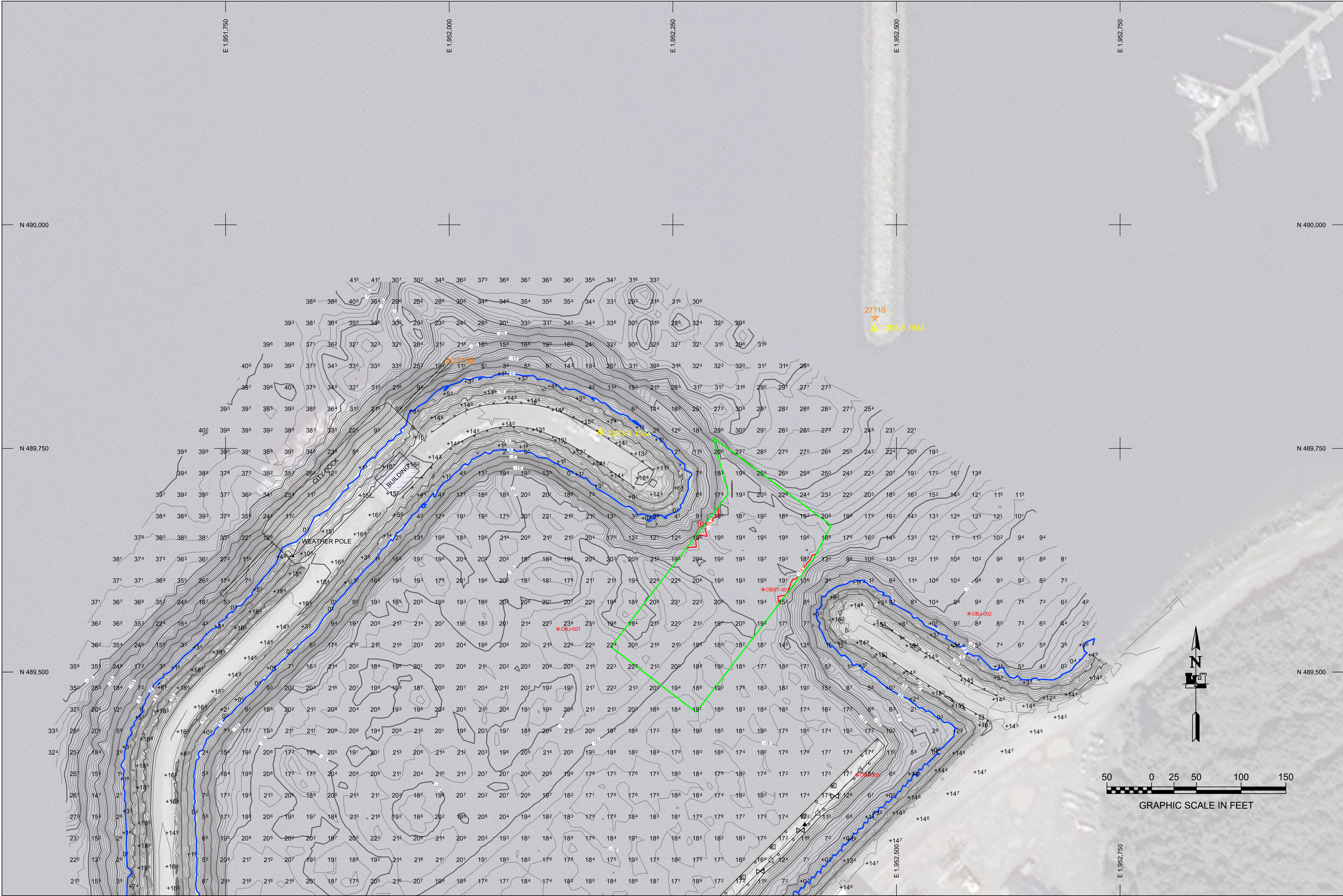
US ARMY CORPS
OF ENGINEERS®
ALASKA DISTRICT

REV.	DATE	BY	APPR.	DESCRIPTION

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 2204 3RD STREET BER, ALASKA 99506-0888	SURVEYED BY: GREGORY W. GIBSON DRAWN BY: ROBERT GOUGHNOUR TASJBG/GWG: TASJBG/GWG: APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION FILE: 010392-VH02.DWG	UPC: 010392	PLOT DATE: 20 August 2019, 2019	TASK ORDER NO.: 19PD069	JOB NO.: 0519	SCALE: 1" = 150'	CONTRACTOR: LEWIS INC.	STATE: ALASKA

SAND POINT, ALASKA
010392 - SAND POINT NEW HARBOR
PROJECT CONDITION SURVEY
MAY 17 & 18, 2019

REFERENCE
NUMBER:
5-SAN-92-07-19
SHEET 1 OF 4

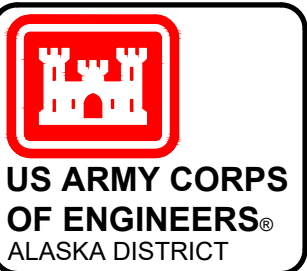
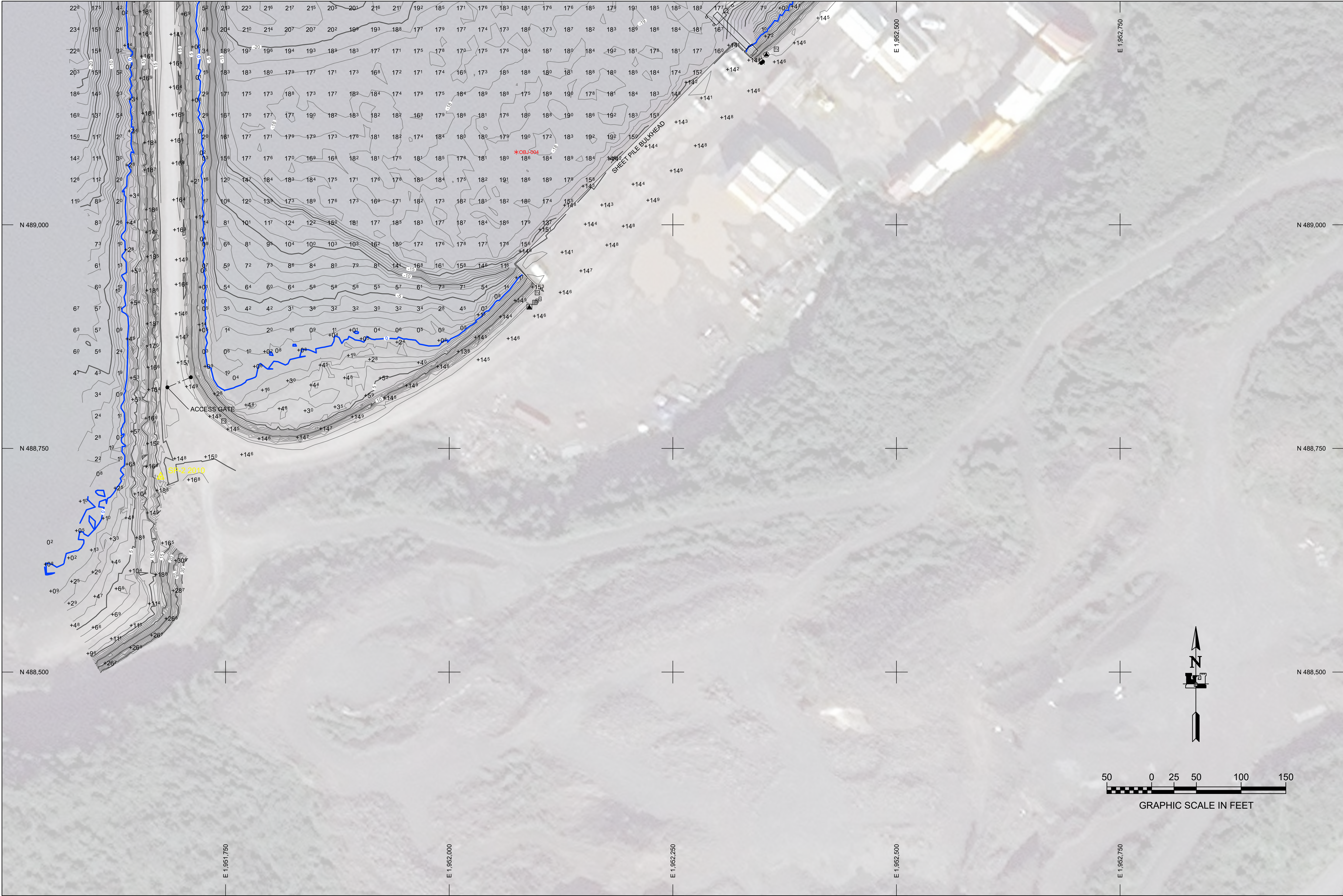


REV.	DATE	BY	APPR.	DESCRIPTION

	U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 2204 3RD STREET BER, ALASKA 99506-0888	SURVEYED BY: GREGORY W. GIBSON	UPC: 010392	CONTRACT NO.: W811KB-16-D-0014
		DRAWN BY: ROBERT GOUGHNOUR	PLOT DATE: 20 August 2019	TASK ORDER NO.: 19PD069
		TASJBG/GWG: TASJBG/GWG	SIZE: ANSI D	JOB NO.: 0519
		APPROVED BY: THOMAS SLOAN	CHIEF GEOMATICS SECTION	SCALE: 1" = 50'
FILE: 010392-VH02.DWG		CITY: WASILLA	STATE: ALASKA	

SAND POINT, ALASKA
010392 - SAND POINT NEW HARBOR
PROJECT CONDITION SURVEY
MAY 17 & 18, 2019

REFERENCE
NUMBER:
5-SAN-92-07-19
SHEET 2 OF 4



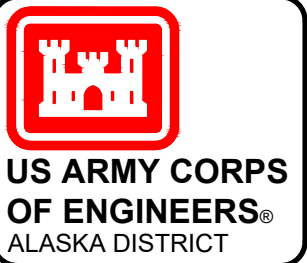
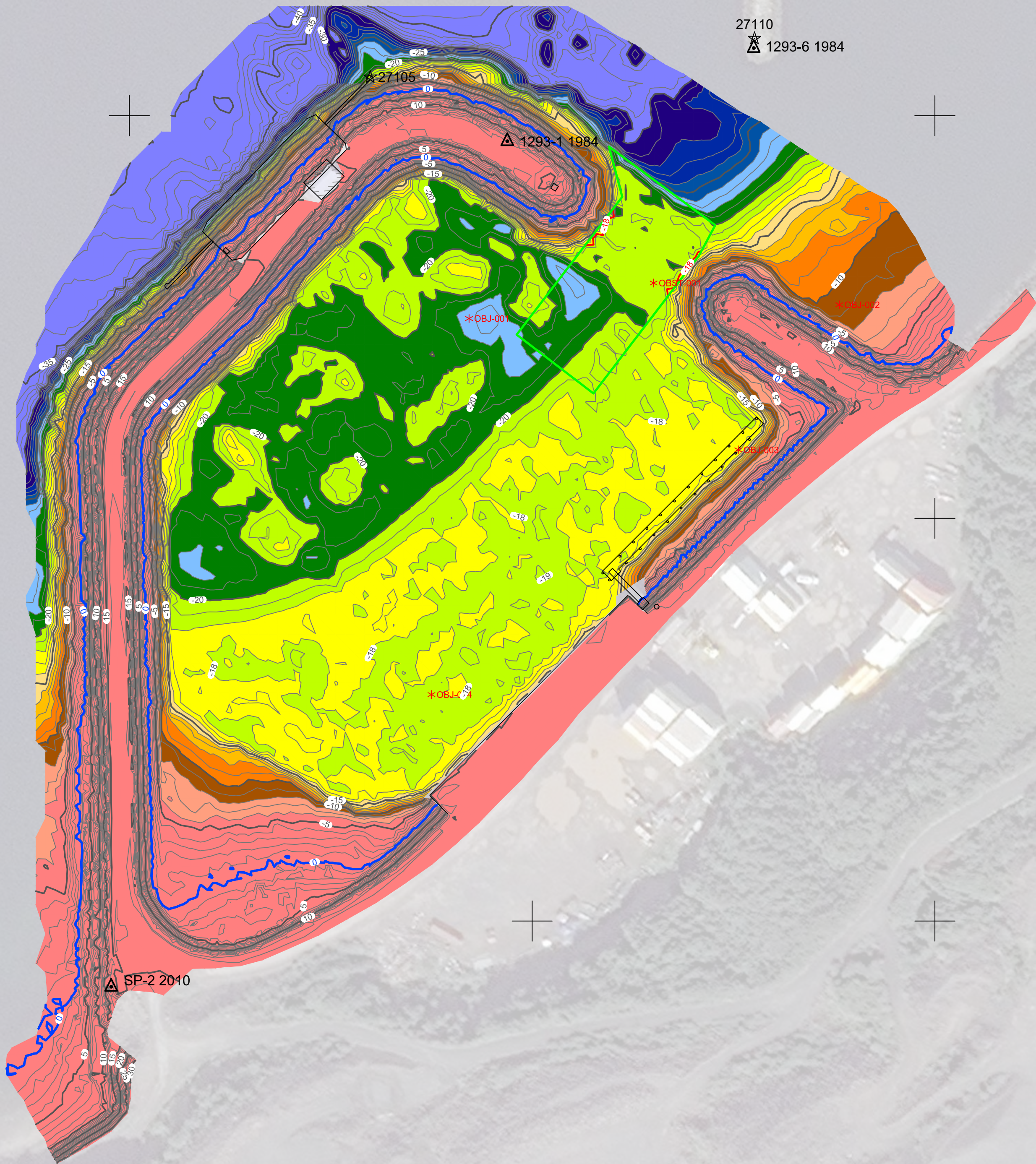
REV.	DATE	BY	APPR.	DESCRIPTION

	SURVEYED BY: GREGORY W. GIBSON	UPC: 010392	CONTRACT NO.: W911KG-16-D-0014
	DRAWN BY: ROBERT GOUGHNOUR	PLOT DATE: 20 August 2019	TASK ORDER NO.: 19PD069
	TASJBG/GWG:	SIZE: ANSI D	JOB NO.: 0519
	APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION	FILE: 010392-VH02.DWG	SCALE: 1" = 50'
U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 2204 3RD STREET BER, ALASKA 99506-0888		STATE: ALASKA CITY: WASILLA	

SAND POINT, ALASKA
010392 - SAND POINT NEW HARBOR
PROJECT CONDITION SURVEY
MAY 17 & 18, 2019

REFERENCE
NUMBER:
5-SAN-92-07-19
SHEET 3 OF 4

ELEVATION COLOR LEGEND			
#	MIN. ELEV.	MAX. ELEV.	COLOR
1	-43.5	-30.0	
2	-30.0	-28.0	
3	-28.0	-26.0	
4	-26.0	-24.0	
5	-24.0	-22.0	
6	-22.0	-20.0	
7	-20.0	-18.0	
8	-18.0	-16.0	
9	-16.0	-14.0	
10	-14.0	-12.0	
11	-12.0	-10.0	
12	-10.0	-8.0	
13	-8.0	-6.0	
14	-6.0	30.6	



REV.	DATE	BY	APPR.	DESCRIPTION

	SURVEYED BY: GREGORY W. GIBSON		UPC: 010392	CONTRACT NO.: W811K6-16-D-0014	
	DRAWN BY: ROBERT GOUGHNOUR		PLOT DATE: 20 August 2019, 2019	TASK ORDER NO.: 19PD069	
	TASJBG/GWG:		SIZE: ANSI D	JOB NO.: 0519	
	TASJBG/GWG:		SCALE: 1" = 100'	CONTRACTOR: ETAC INC.	
APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION			FILE: 010392-VH02.DWG	CITY: WASILLA	STATE: ALASKA

SAND POINT, ALASKA
010392 - SAND POINT NEW HARBOR
PROJECT CONDITION SURVEY
MAY 17 & 18, 2019

REFERENCE
NUMBER:
5-SAN-92-07-19
SHEET 4 OF 4