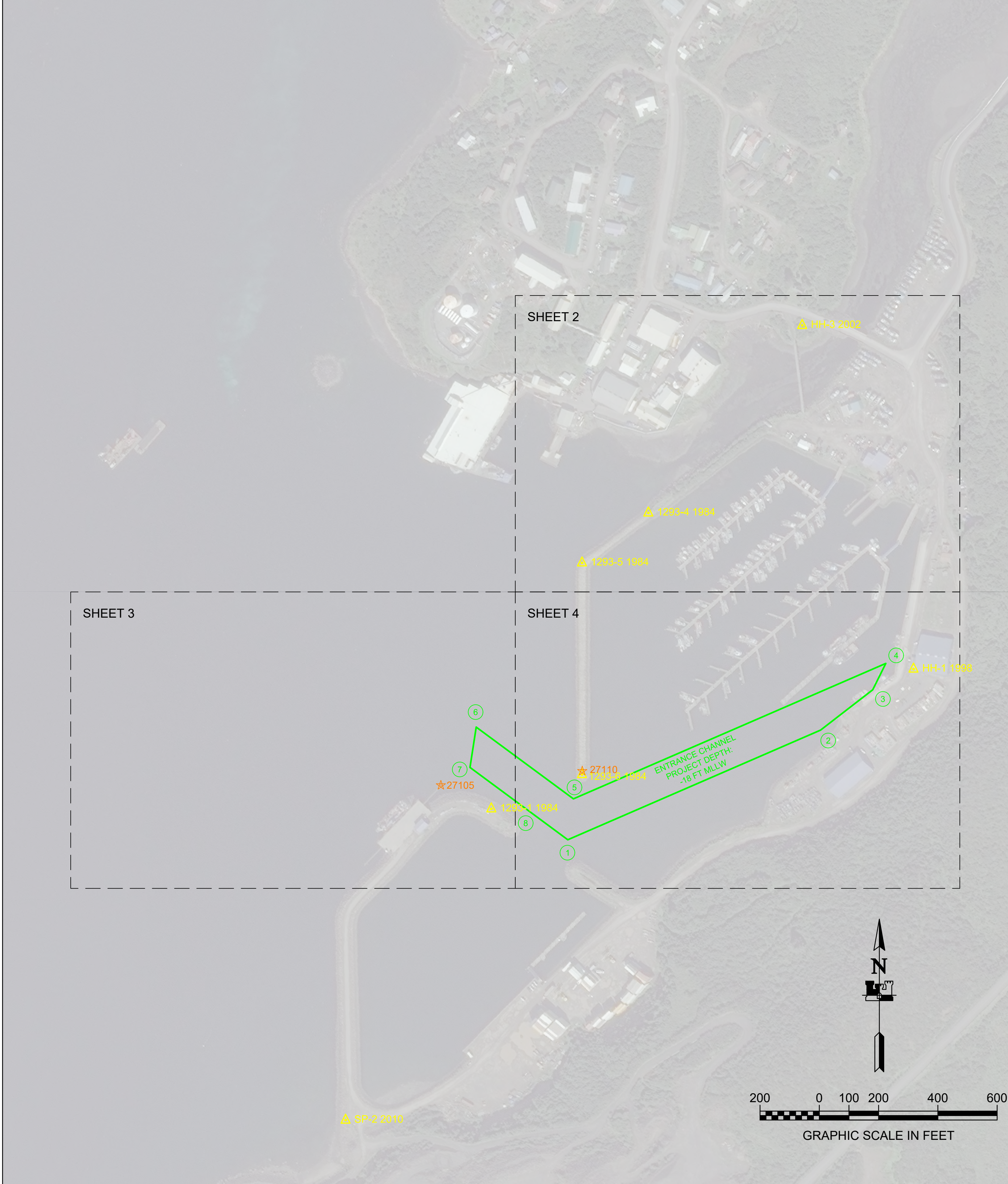


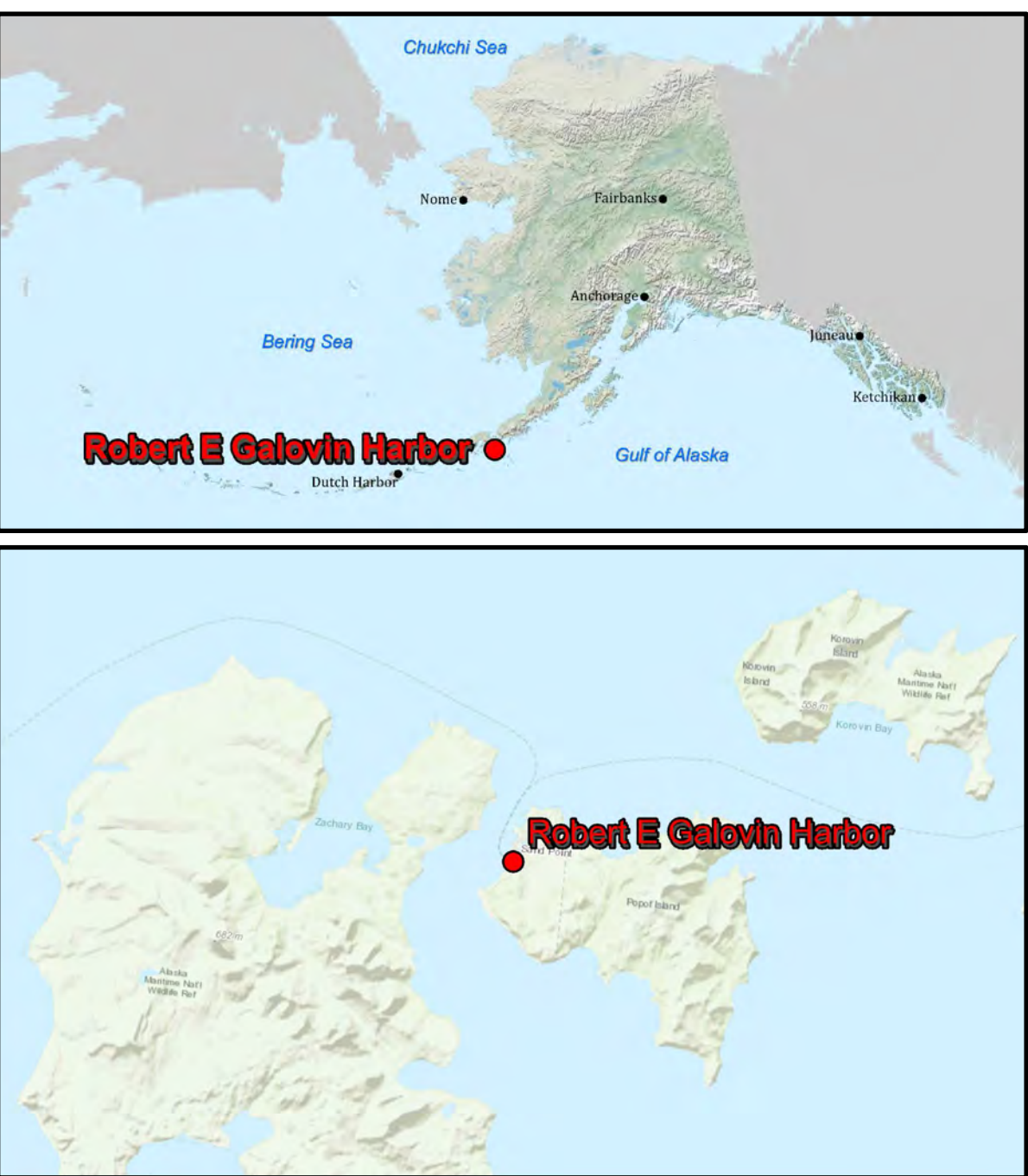


NAVIGATION AIDS			
NO.	NORTHING	EASTING	DESCRIPTION
27105	489,848	1,951,999	HUMBOLDT HARBOR BREAKWATER LIGHT 2 FI R 2.5S
27110	489,896	1,952,476	HUMBOLDT HARBOR BREAKWATER LIGHT 3 FI G 2.5S

PROJECT LIMITS		
CORNER#	NORTHING	EASTING
1	489,664.04	1,952,427.28
2	490,033.95	1,953,280.10
3	490,169.94	1,953,456.10
4	490,258.88	1,953,500.31
5	489,802.04	1,952,446.30
6	490,044.08	1,952,118.33
7	489,908.08	1,952,097.30
8	489,761.55	1,952,295.45

VOLUME COMPUTATIONS		
AREA A: MOORING BASIN (NON-FEDERAL)	MLLW=0	CU. YD.
AVAILABLE TO PROJECT DEPTH (PD)	-18.0	14
AVAILABLE TO MAX PAY DEPTH (MP)	-18.5	25
TOTAL MAXIMUM VOLUME AVAILABLE (MP)		25

LEGEND	
CULVERT	<
VALVE	⊠
SIGN	○
GUARD POST	●
ELECTRICAL PEDESTAL	⊞
ELECTRICAL SWITCH BOX	⊞
ELECTRICAL JUNCTION BOX	⊞
TV PEDESTAL	⊞
TRANSFORMER	▲
TRANSFORMER PAD	■
POWER POLE	●
LIGHT POLE	⊙
DOUBLE LIGHT POLE	⊙⊙
GUY WIRE	⌒
FIRE HYDRANT	⊙
BUILDING	▱
OVERHEAD ELECTRICAL LINE	— O/H —



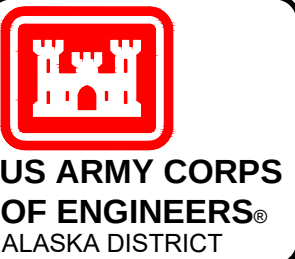
- ### NOTES
- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 7, NAD83 (CORS). IN US SURVEY FEET BASED ON A STATIC GPS NETWORK HOLDING NGS EPOCH 2003.00 CORS L1 PHASE CENTER VALUES FOR "COLD BAY WAAS 8 CORS ARP" (NGS PID DL6500), "PORT HEIDEN AK 2007 CORS ARP" (NGS PID DL6447) AND "PILOT 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 NAVD83 (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 SOUNDINGSS.

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 (317)



REV.	DATE	BY	APPR.	DESCRIPTION

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 2204 3RD STREET DIER, ALASKA 99506-0888	SURVEYED BY: GREGORY W. GIBSON		UPC: 074949	CONTRACT NO.: W811K8-16-D-0014	
	DRAWN BY: ROBERT GOUGHNOUR		PLOT DATE: 16 August 2019	TASK ORDER NO.: FT90067	
	CHECKED BY: TASJBG/GWG		SIZE: ANSI D	JOB NO.: 0619	
	APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION		SCALE: 1" = 200'	CONTRACTOR: LEWIS INC.	
FILE: 074949-VH02.DWG		STATE: ALASKA		CITY: WASILLA	

SAND POINT, ALASKA

074949 - ROBERT E GALOVIN HARBOR

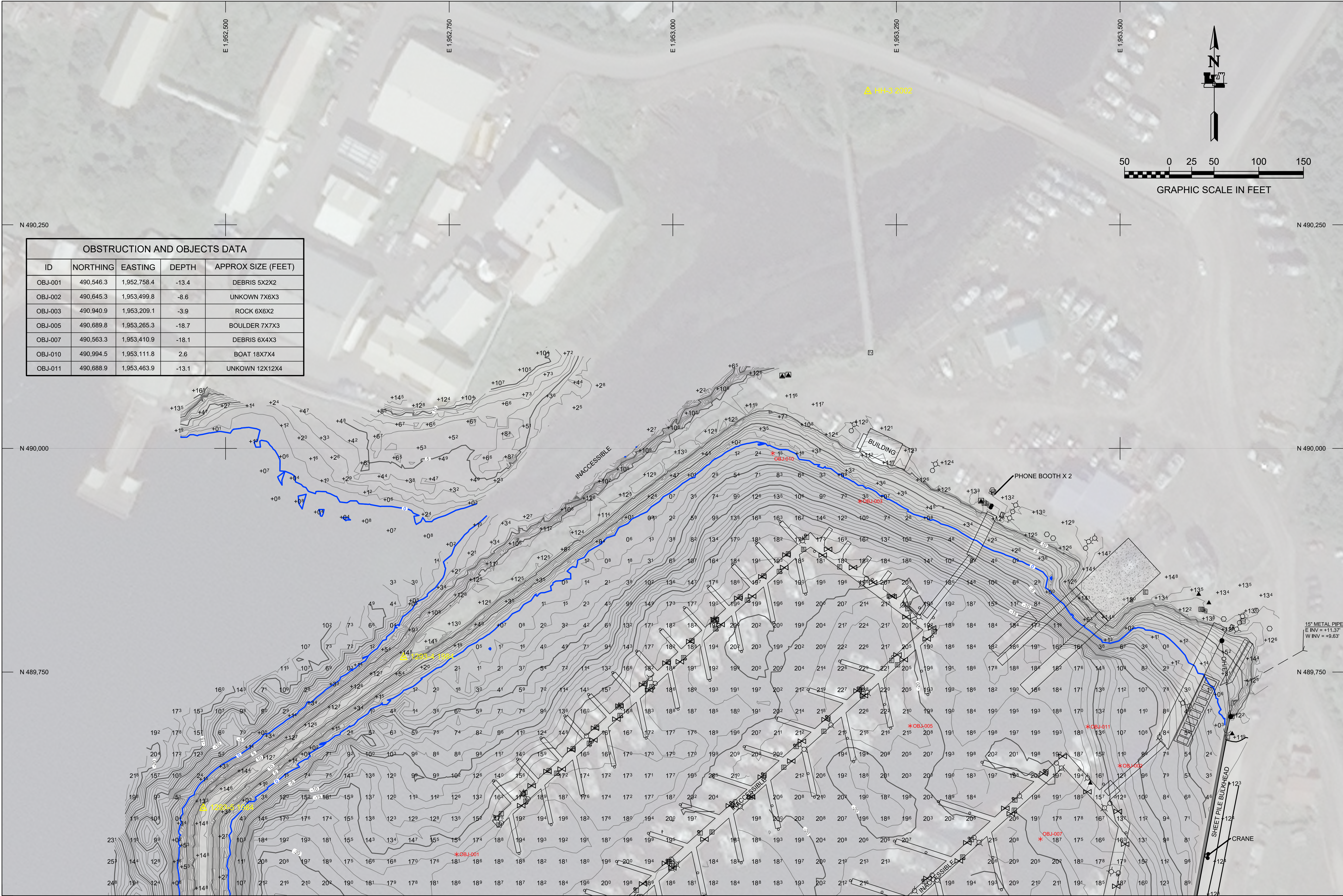
PROJECT CONDITION SURVEY

MAY 17 & 18, 2019

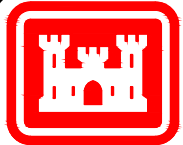
REFERENCE NUMBER:

5-SAN-92-07-20

SHEET 1 OF 5



OBSTRUCTION AND OBJECTS DATA				
ID	NORTHING	EASTING	DEPTH	APPROX SIZE (FEET)
OBJ-001	490,546.3	1,952,758.4	-13.4	DEBRIS 5X2X2
OBJ-002	490,645.3	1,953,499.8	-8.6	UNKOWN 7X6X3
OBJ-003	490,940.9	1,953,209.1	-3.9	ROCK 6X6X2
OBJ-005	490,689.8	1,953,265.3	-18.7	BOULDER 7X7X3
OBJ-007	490,563.3	1,953,410.9	-18.1	DEBRIS 6X4X3
OBJ-010	490,994.5	1,953,111.8	2.6	BOAT 18X7X4
OBJ-011	490,688.9	1,953,463.9	-13.1	UNKOWN 12X12X4



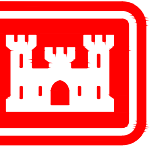
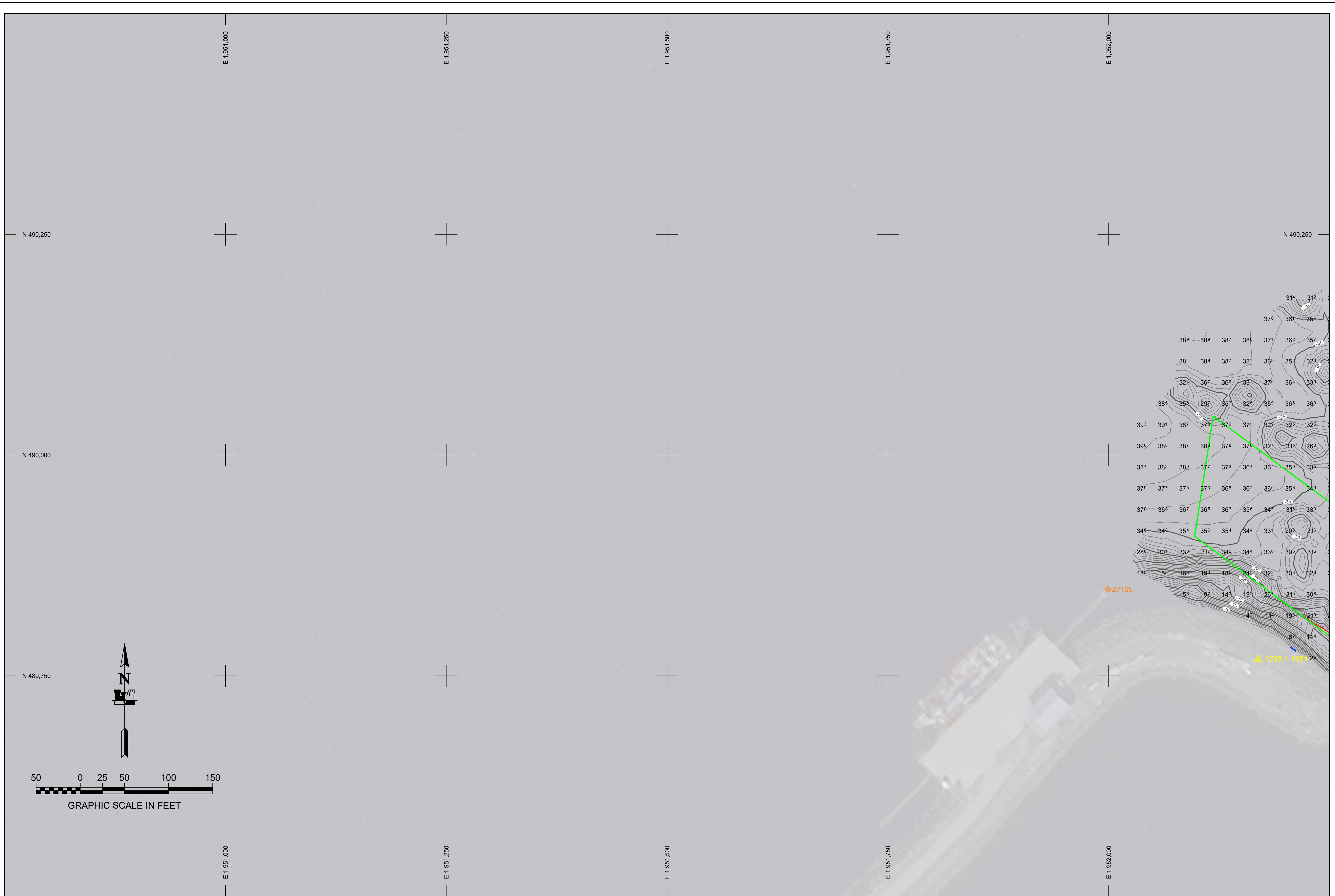
US ARMY CORPS
OF ENGINEERS®
ALASKA DISTRICT

REV.	DATE	BY	APPR.	DESCRIPTION

	SURVEYED BY: GREGORY W. GIBSON		UPC: 074949	CONTRACT NO.: W811K6-16-D-0014
	DRAWN BY: ROBERT GOUGHNOUR		PLOT DATE: 16 August 2019	TASK ORDER NO.: 19PD069
	CHECKED BY: TASJGGVNG		SIZE: ANSI D	JOB NO.: 0619
	APPROVED BY: THOMAS SLOAN, CHIEF GEOMATICS SECTION		SCALE: 1" = 50'	BY: ETC INC.
FILE: 074949-VH02.DWG			SECTION: CITY: WASILLA	STATE: ALASKA

SAND POINT, ALASKA
074949 - ROBERT E GALOVIN HARBOR
PROJECT CONDITION SURVEY
MAY 17 & 18, 2019

REFERENCE
NUMBER:
5-SAN-92-07-20
SHEET 2 OF 5



**S ARMY CORPS
F ENGINEERS®
ASKA DISTRICT**

[illegible]

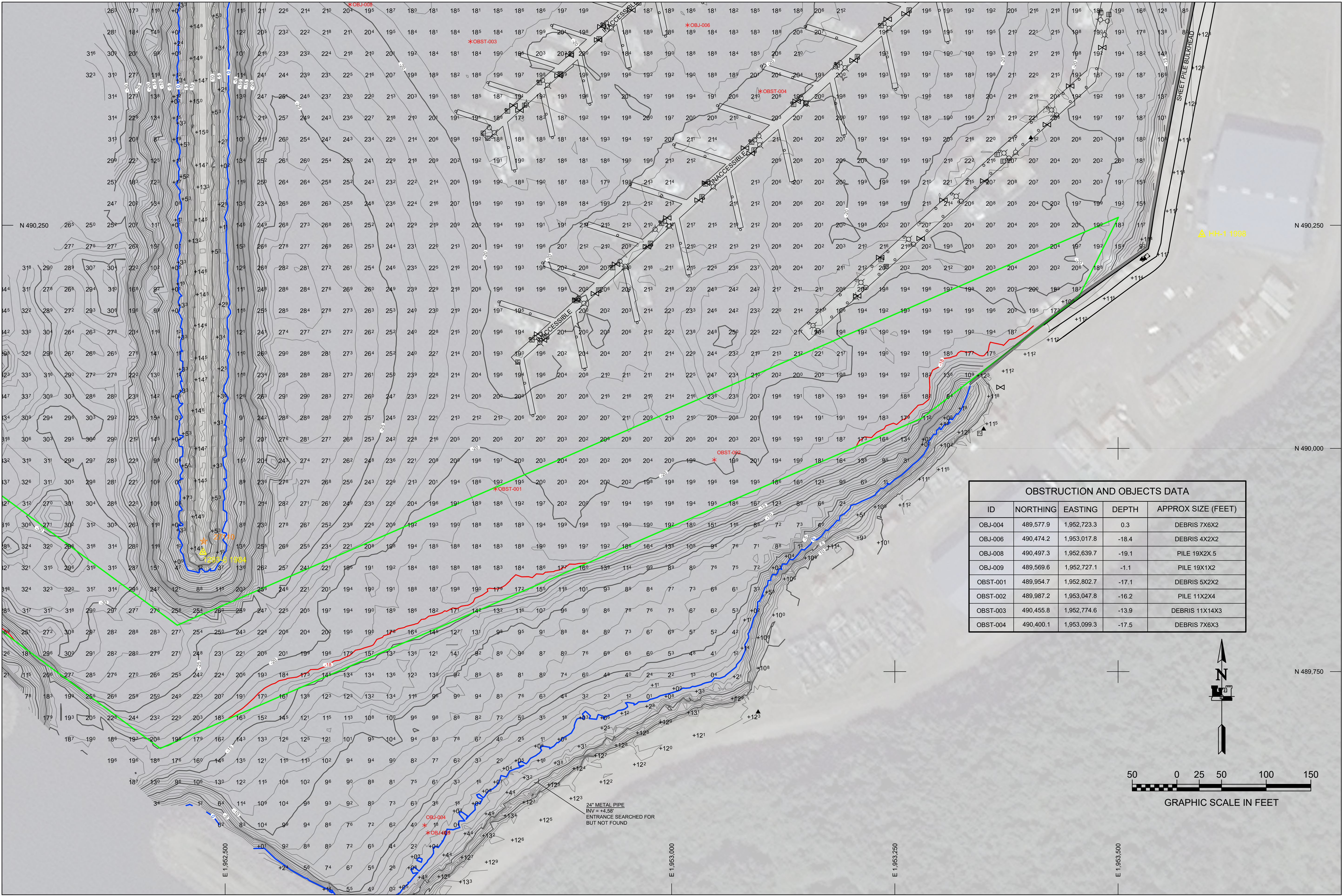
GREGORY W. GIBSON	PLOT DATE	W91TKB-18-D-0014
DRAWN BY: ROBERT GOUCHENOUR	8 August 2019	TASK ORDER NO.: 18F0009
PROJECT NO.: JBER ALASKA 9506-0688	DATE: 08/19	PROJECT NO.: 0619
PROJECT NAME: T516RG/GWG	SCALE: 1" = 50'	
ANSI D		
APPROVED BY:	CONTRACTOR:	
THOMAS SLOAN, CHIEF GEOMATICS SECTION	ETRAC INC.	
FILE: 074949-VH02.DWG	CITY: WASILLA	STATE: ALASKA

074949 - ROBERT E GALOVIN HARBOR
SAND POINT, ALASKA
PROJECT CONDITION SURVEY
MAY 17 & 18, 2019

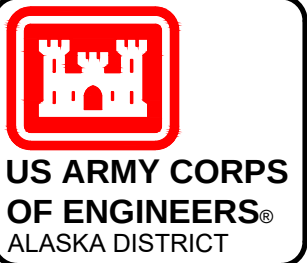
REFERENCE
NUMBER:

SAN-92-07-20

SHEET 3 OF 5



OBSTRUCTION AND OBJECTS DATA				
ID	NORTHING	EASTING	DEPTH	APPROX SIZE (FEET)
OBJ-004	489,577.9	1,952,723.3	0.3	DEBRIS 7X6X2
OBJ-006	490,474.2	1,953,017.8	-18.4	DEBRIS 4X2X2
OBJ-008	490,497.3	1,952,639.7	-19.1	PILE 19X2X.5
OBJ-009	489,569.6	1,952,727.1	-1.1	PILE 19X1X2
OBST-001	489,954.7	1,952,802.7	-17.1	DEBRIS 5X2X2
OBST-002	489,987.2	1,953,047.8	-16.2	PILE 11X2X4
OBST-003	490,455.8	1,952,774.6	-13.9	DEBRIS 11X14X3
OBST-004	490,400.1	1,953,099.3	-17.5	DEBRIS 7X6X3



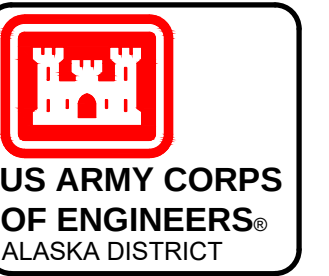
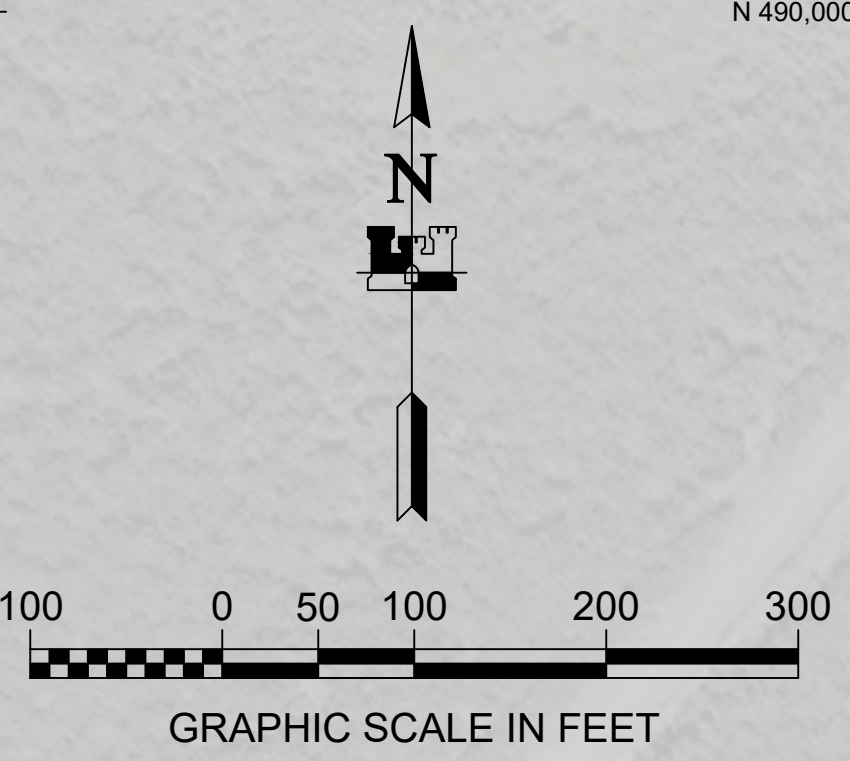
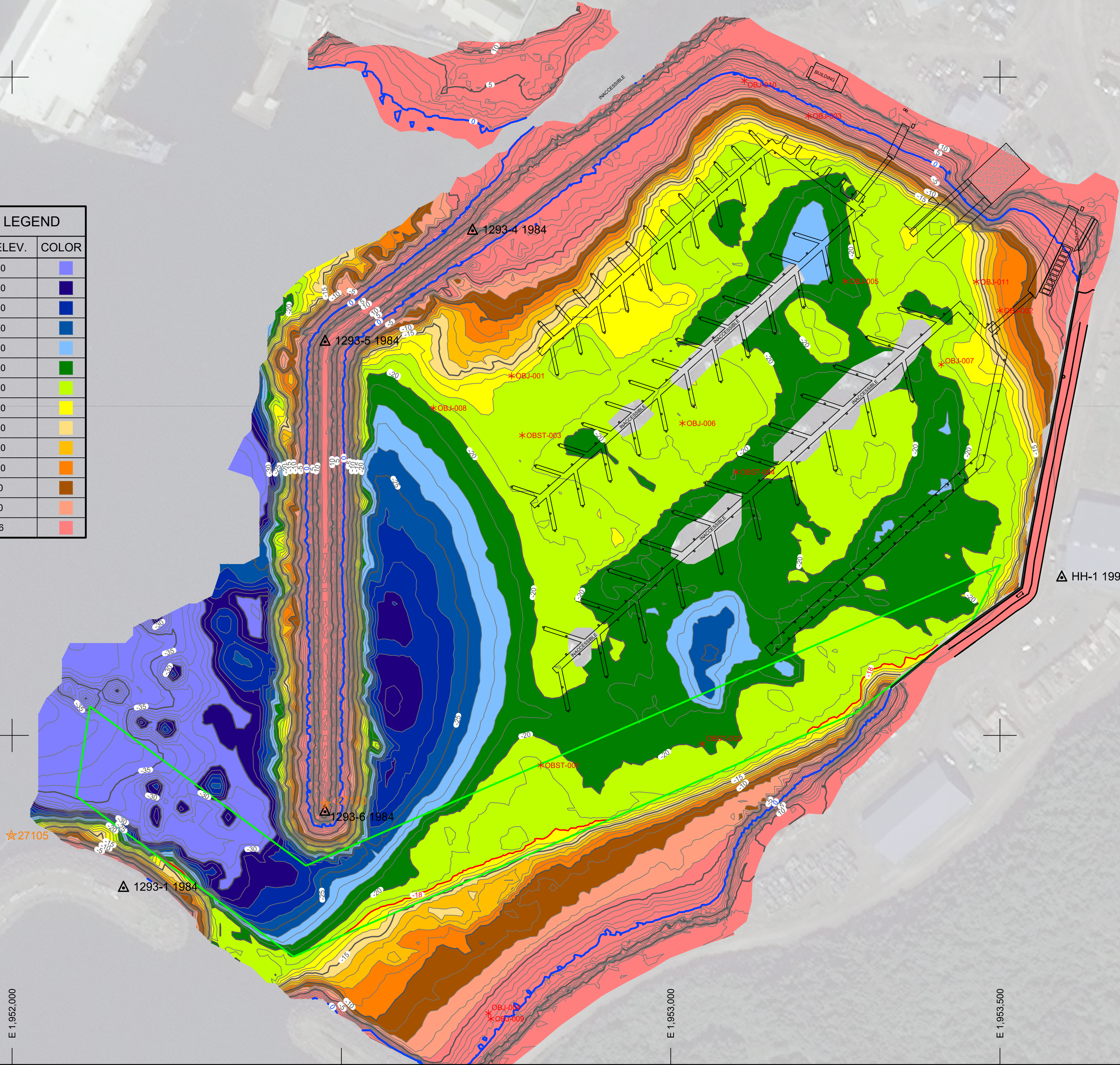
REV.	DATE	BY	APPR.	DESCRIPTION

	SURVEYED BY: GREGORY W. GIBSON		CONTRACT NO.: W811KB-16-D-0014	
	DRAWN BY: ROBERT GOUGHNOUR		TASK ORDER NO.: 19F0069	
	CHECKED BY: TASHIGG		JOB NO.: 0619	
	APPROVED BY: TASHIGG		SCALE: 1" = 50'	
FILE: 074649-VH02.DWG		CHIEF GEOMATICS SECTION		STATE: ALASKA
		CITY: WASILLA		

SAND POINT, ALASKA
074949 - ROBERT E GALOVIN HARBOR
PROJECT CONDITION SURVEY
MAY 17 & 18, 2019

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

ELEVATION COLOR LEGEND			
#	MIN. ELEV.	MAX. ELEV.	COLOR
1	-39.4	-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	16.6	



REV.	DATE	BY	APPR.	DESCRIPTION

	U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT 204 3RD STREET BER, ALASKA 99506-0988	SURVEYED BY: GREGORY W. GIBSON	UPC: 074949	CONTRACT NO.: W811K6-16-D-0014
		DRAWN BY: ROBERT GOUGHNOUR	PLOT DATE: 16 August 2019	TASK ORDER NO.: 19PD069
		CHECKED BY: TASJBGWG	SIZE: ANSI D	JOB NO.: 0619
		APPROVED BY: TASJBGWG	SCALE: 1" = 100'	CONTRACTOR: ETAC INC.
		FILE: 074949-VH02.DWG		CHIEF GEOMATICS SECTION

SAND POINT, ALASKA
074949 - ROBERT E GALOVIN HARBOR
PROJECT CONDITION SURVEY
MAY 17 & 18, 2019

REFERENCE
NUMBER:
5-SAN-92-07-20
SHEET 5 OF 5