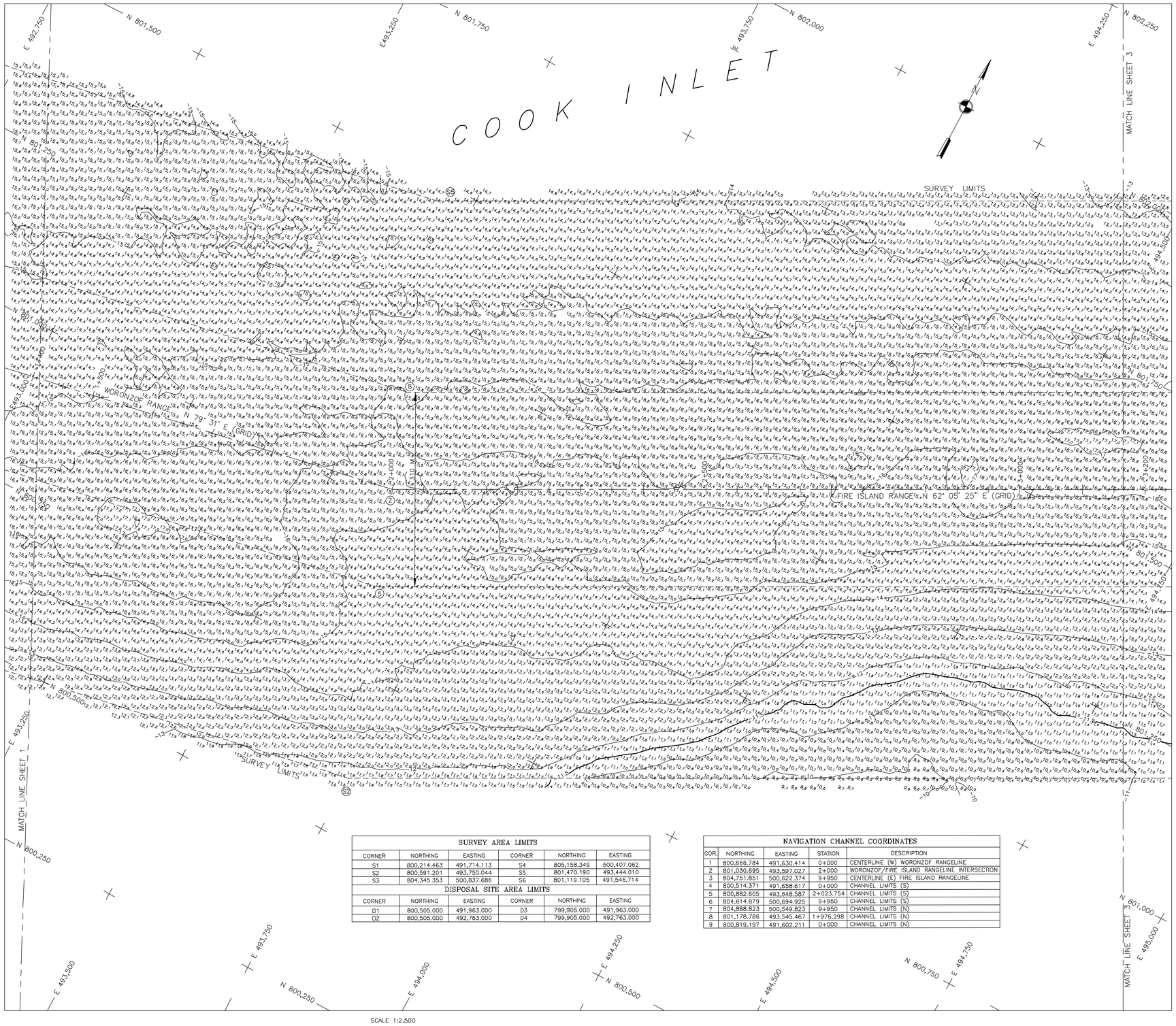
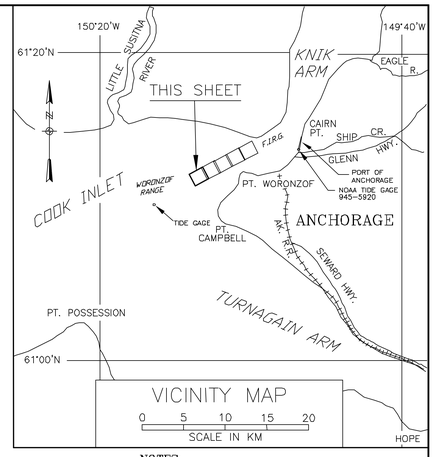
U. S. ARMY





NOTES:

1. HORIZONTAL DATUM IS THE ALASKA STATE PLANE COORDINATE SYSTEM, ZONE 4, NAD83 IN METERS, HOLDING USACE SBC "N. END 1978" AS N 806,701.201, E 506,146.537 AND USACE SBC "S. END 1978" AS N 805,983.719, E 505,885.335.
2. VERTICAL DATUM IS MEAN–LOWER–LOW–WATER (MLLW=0.00m) IN METERS, BASED ON NOAA/NOS TIDAL DATUM ON THE 1960–1978 TIDAL EPOCH AT TIDE STATION "9455920" LOCATED AT THE PORT OF ANCHORAGE (SEE NOTE 6 BELOW).
3. SOUNDINGS ARE IN METERS AND ARE MINUS UNLESS OTHERWISE INDICATED.
4. NO HORIZONTAL OR VERTICAL CONTROL WAS SET OR ESTABLISHED DURING THIS SURVEY.
5. HYDROGRAPHIC DATA ACQUISITION WAS CONDUCTED SEPTEMBER 20–28, 2005 USING AN ODDM ECHOSCAN MULTI–BEAM DEPTH SOUNDER WITH A 200kHZ, 90 DEGREE SWATH–WIDTH TRANSDUCER (30 – 3 DEGREE BEAM ARRAY). POSITIONING, VESSEL ATTITUDE AND TIDES WERE PROVIDED IN REAL–TIME USING A CODA OCTOPUS F–180–1 INERTIAL ATTITUDE AND POSITIONING SYSTEM OPERATING ON KINEMATIC GPS CORRECTIONS BROADCAST FROM A TRIMBLE 4000SSI RTK GPS BASE RECEIVER SET AT "TERRA–9 2005". SOUND VELOCITY WAS MEASURED AND APPLIED USING AN AML SV–PLUS SOUND VELOCITY METER DEPLOYED DURING THE SURVEY. REAL–TIME–KINEMATIC HEIGHT VALUES WERE CALIBRATED TO DIRECT MANUAL TIDE OBSERVATIONS HOLDING USCGS TIDAL BENCH MARK "TIDAL 16 1966" LOCATED AT NOAA / NOS TIDE STATION "9455920" AT THE PORT OF ANCHORAGE (SEE NOTE 6). SURVEY DATA WAS COLLECTED USING QPS QINSY (V7.4) INTEGRATED SOFTWARE AND WAS PROCESSED USING CARIS "HIPS" (V5.4) SOFTWARE.
6. THE ELEVATION SHOWN FOR ALUMINUM CAP "AWWU 1994" IS SPECIFIC TO THIS PROJECT AND SHOULD NOT BE USED AS A BASIS OF VERTICAL DATUM FOR AREAS OUTSIDE OF THE COOK INLET NAVIGATION CHANNEL. THE ELEVATION REPRESENTS MEAN–LOWER–LOW–WATER AT THE NAVIGATION CHANNEL AND WAS DERIVED THROUGH COMPARISONS OF ZONED TIDE DATA (BASED ON THE NOAA/NOS TIDE STATION "9455920", LOCATED AT THE PORT OF ANCHORAGE), AND FROM HISTORICAL REDUNDANT MEASUREMENTS OF CERTAIN CROSS–SECTION DATA COMPARED TO PREVIOUS USACE PROJECT CONDITION SURVEYS. THE ELEVATION OF "AWWU 1994" IS 21.458m MLLW FOR THIS PROJECT.
7. THIS DRAWING IS INDICATIVE OF CONDITIONS AT THE TIME OF SURVEY.

CONTROL COORDINATES

STA.	NORTHING	EASTING	ELEVATION	DESCRIPTION
VAN DUSEN	798,942.998	502,541.130		NGS SBC
AWWU 1994	801,415.521	498,604.321	*	3" ALCAP (* SEE NOTE 6)
S. END 1978	805,983.719	505,885.335	12.335	USACE SBC
N. END 1978	806,701.201	506,146.537	12.616	USCGS SBC
TERRA–9 2005	806,195.329	506,019.017	24.500	USCGS SBC
TIDAL 16 1966	–	–	12.355	USCGS SBC
BM 13	798,786.275	489,247.050	8.553	USCGS SBC IN ROCK
BM 12	–	–	8.525	USCGS SBC IN ROCK
RIFE	–	–	9.000	USCGS SBC IN ROCK
NO 15 RESET 1966	–	–	11.320	USCGS SBC IN PVMT

VOLUME COMPUTATIONS

PROJECT DEPTH –11.5M MLLW– WORONZOF AND COMBINED FIRE ISLAND RANGE	CUBIC METERS
MINIMUM PAY LINE (–11.5m MLLW)	1,439
BETWEEN MINIMUM PAY LINE AND MAXIMUM PAY LINE (–12.5m MLLW)	2,285
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, H:V)	0
TOTAL	3,724

NAVIGATION AIDS

USCG No.	DESCRIPTION	NORTHING	EASTING
26410	FIRE ISLAND RANGE FRONT LIGHT	798726	489245
26415	FIRE ISLAND RANGE REAR LIGHT	798508	488833
26420	KNIK ARM SHOAL LIGHTED BUOY 5	802187	495179

SURVEY AREA LIMITS

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
S1	800,214.463	491,714.113	S4	805,158.349	500,407.062
S2	800,591.201	493,750.044	S5	801,470.190	493,444.010
S3	804,345.353	500,837.686	S6	801,119.105	491,546.714

DISPOSAL SITE AREA LIMITS

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
D1	800,505.000	491,963.000	D3	799,905.000	491,963.000
D2	800,505.000	492,763.000	D4	799,905.000	492,763.000

NAVIGATION CHANNEL COORDINATES

COR.	NORTHING	EASTING	STATION	DESCRIPTION
1	800,666.784	491,630.414	0+000	CENTERLINE (W) WORONZOF RANGELINE
2	801,030.695	493,597.027	2+000	WORONZOF/FIRE ISLAND RANGELINE INTERSECTION
3	804,751.851	500,622.374	9+950	CENTERLINE (E) FIRE ISLAND RANGELINE
4	800,514.371	491,658.617	0+000	CHANNEL LIMITS (S)
5	800,882.605	493,648.587	2+023.754	CHANNEL LIMITS (S)
6	804,614.879	500,694.925	9+950	CHANNEL LIMITS (S)
7	804,888.823	500,549.823	9+950	CHANNEL LIMITS (N)
8	801,178.786	493,545.467	1+976.298	CHANNEL LIMITS (N)
9	800,819.197	491,602.211	0+000	CHANNEL LIMITS (N)

ALL COORDINATES, DIMENSIONS, AND ELEVATIONS ARE IN METERS

CONTRACT NO. W911KB–04–D–0006–0009
CONTRACTOR TERRA SURVEYS, LLC
CITY PALMER STATE ALASKA

ALASKA DISTRICT
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SURVEYED: GCY/AMC
DRAWN: LES/AMC
CHECKED: KDW
SUBMITTED:

ANCHORAGE, ALASKA
COOK INLET NAVIGATION CHANNEL
PROJECT CONDITION SURVEY
SEPTEMBER 20–28, 2005

RECOMMENDED: PROJECT MANAGER
APPROVED: CHIEF OPERATIONS–READINESS BRANCH
DATE:

SURVEY NO. 2285–05
SCALE: 1:2500
SHEET 2 OF 6