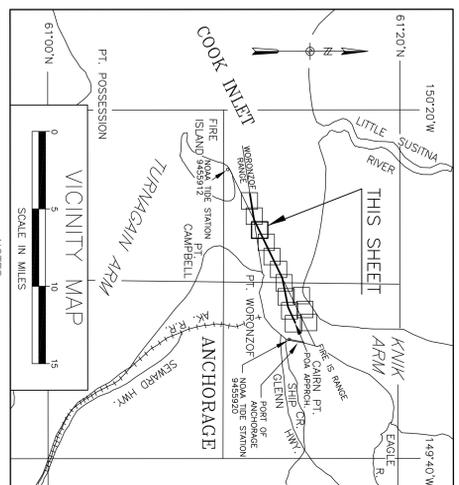


COOK INLET



USCG No.	DESCRIPTION	NORTHING	EASTING
26420	KAUK ARM SHOAL LIGHTED BUOY 7	2,531,925.83	1,624,388.10



NOTES

- HORIZONTAL CONTROL IS ALASKA STATE PLANE ZONE 4, NAD83 IN U.S. SURVEY FEET HOLDING USACE 25444288.25, E 1,659,724.74; 4465625.19, E 1,650,582.43 AND USACE SBC 3 AND 1978-85 N 25444288.25, E 1,659,724.74
- VERTICAL CONTROL IS MEAN-LOWER-LOW-WATER (MLLW = 0.0') IN U.S. SURVEY FEET BASED ON 04/21/2004 HOLDING USGS SBC 'B' 75 1964 AS 36.82' AND NOAA/VOS TIDAL DATUM '9459912 FIRE ISLAND, ALASKA', PUBLISHED 05/27/2004, HOLDING NOS SBC 'BM 13' 1974 AS 28.41'. (SEE 3. THIS SURVEY WAS CONDUCTED AUGUST 21-25, 2008. SOUNDINGS WERE COLLECTED USING A RESON SEABAT B101 MULTIBEAM ECHOSOUNDER SYSTEM WITH A 200KHZ, 150 DEGREE SWATH-WIDTH SWATH SYSTEM. SOUND VELOCITY WAS MEASURED AND APPLIED USING AN APPLIED MICROSYSTEMS SV-VZ SOUND VELOCITY PROFILES DEPLOYED DURING THE SURVEY. HULLOCK-THE-REARVIEW HEIGHT VALUES AT NOAA/VOS TIDAL BENCH MARKS AT THE PORT OF ANCHORAGE (SEE NOTE 4), SURVEY LINE WASHINGTON AND DATA COLLECTION WERE CONDUCTED USING GPS ONLY (VRS) INTEGRATED SOFTWARE. SOUNDINGS AND NEW POSITIONS WERE OBTAINED USING GPS ONLY (VRS) INTEGRATED SOFTWARE.
- THE PORT OF ANCHORAGE AS NOTED PREVIOUSLY (GENERAL INVESTIGATION REPORT) IS A REFLECTED DIFFERENCE IN THE DATUM VALUES AT THE PORT OF ANCHORAGE (NOAA/VOS 9459920) AND THE PORT OF ANCHORAGE (NOAA/VOS 9459912) IS 0.00'. THE PORT OF ANCHORAGE (NOAA/VOS 9459912) IS 0.00' FROM THE REFLECTED DIFFERENCE IN THE DATUM VALUES AT THE PORT OF ANCHORAGE (NOAA/VOS 9459920) AND THE PORT OF ANCHORAGE (NOAA/VOS 9459912) IS 0.00' FROM THE REFLECTED DIFFERENCE IN THE DATUM VALUES AT THE PORT OF ANCHORAGE (NOAA/VOS 9459920).
- THE ADJUSTMENT WAS PERFORMED USING CANIS BASE EDITOR V2.1 RASING ALL SOUNDINGS TO THE DATUM OF THE PORT OF ANCHORAGE (NOAA/VOS 9459920). THE ADJUSTMENT IS 0.0' EXTENDING TO AN ADJUSTMENT OF 4.373' AT FIRE ISLAND (SEE DIAGRAM SHEET 1).
- THIS DRAWING IS INDICATIVE OF CONDITIONS AT THE TIME OF SURVEY.

COOK INLET NAVIGATION CHANNEL COORDINATES													
CHANNEL CENTRLINE													
COR.	NORTHING	EASTING	STATION	DESCRIPTION	COR.	NORTHING	EASTING	STATION	DESCRIPTION	COR.	NORTHING	EASTING	STATION
CL1	2,628,885.501	1,613,018.09	0+00	CENTRELINE WAGONPORT RANGLINE	CL1	2,628,885.501	1,613,018.09	0+00	CENTRELINE WAGONPORT RANGLINE	CL1	2,628,885.501	1,613,018.09	0+00
CL2	2,628,885.501	1,613,018.09	0+00	CENTRELINE WAGONPORT RANGLINE	CL2	2,628,885.501	1,613,018.09	0+00	CENTRELINE WAGONPORT RANGLINE	CL2	2,628,885.501	1,613,018.09	0+00
CL3	2,630,188.271	1,640,443.44	303+00	FIRE ISLAND/TRANSITION TO FOA APPROACH	CL3	2,630,188.271	1,640,443.44	303+00	FIRE ISLAND/TRANSITION TO FOA APPROACH	CL3	2,630,188.271	1,640,443.44	303+00
CL4	2,644,712.17	1,650,169.36	403+50	FOA APPROACH	CL4	2,644,712.17	1,650,169.36	403+50	FOA APPROACH	CL4	2,644,712.17	1,650,169.36	403+50
CL5	2,644,429.31	1,659,293.53	459+50	CENTRELINE FOA APPROACH	CL5	2,644,429.31	1,659,293.53	459+50	CENTRELINE FOA APPROACH	CL5	2,644,429.31	1,659,293.53	459+50

SURVEY LIMITS											
COR.	NORTHING	EASTING	COR.	NORTHING	EASTING	COR.	NORTHING	EASTING	COR.	NORTHING	EASTING
NC1	2,627,365.51	1,612,925.56	0+00	NC6	2,638,271.03	1,640,626.80	303+00	NC11	2,627,365.51	1,612,925.56	0+00
NC2	2,628,534.04	1,619,240.43	65+00	NC7	2,642,199.38	1,649,963.38	403+50	NC12	2,628,534.04	1,619,240.43	65+00
NC3	2,629,685.52	1,640,256.07	303+00	NC8	2,644,878.56	1,655,055.31	459+50	NC13	2,629,685.52	1,640,256.07	303+00
NC4	2,628,365.48	1,613,110.61	0+00	NC9	2,641,234.95	1,650,354.84	403+50	NC14	2,628,365.48	1,613,110.61	0+00
NC5	2,627,952.38	1,619,578.73	65+00	NC10	2,643,980.06	1,655,531.75	459+50	NC15	2,627,952.38	1,619,578.73	65+00

CONTROL POINTS											
STATION	NORTHING	EASTING	ELEVATION	DESCRIPTION							
ST1	2,627,848.80	1,612,836.13	51.6	CORNER							
ST2	2,629,003.63	1,619,076.83	51.7	CORNER							
ST3	2,640,726.80	1,640,076.80	51.8	CORNER							
ST4	2,625,682.19	1,613,202.24	51.9	CORNER							
ST5	2,627,852.92	1,619,578.73	51.9	CORNER							

STATION DATA											
STATION	NORTHING	EASTING	ELEVATION	DESCRIPTION							
END 1978	2,646,622.19	1,680,922.43	41.39	USACE SBC							
END 1979	2,646,622.19	1,680,922.43	41.39	USACE SBC							
TER69-10 2008	2,644,971.59	1,660,156.45	80.40	PORT OFFICE ANT. MOUNT							
FOA-1	2,639,936.64	1,656,922.51	39.93	USACE SBC							
FO-1	2,629,995.41	1,643,787.75	-	USACE SBC							
NOA/VOS GPS 1988	2,621,198.82	1,648,753.69	-	USACE SBC							
NOA/VOS TIDAL BENCH MARKS AT THE PORT OF ANCHORAGE 9459920	2,644,429.31	1,659,293.53	40.53	USCGS BENCH MARK SBC							
B 75 1964	2,644,429.31	1,659,293.53	36.82	USCGS BENCH MARK SBC							
NOA/VOS TIDAL BENCH MARKS AT THE PORT OF ANCHORAGE 9459912	2,644,429.31	1,659,293.53	36.82	USCGS BENCH MARK SBC							
B 75 1974	2,644,429.31	1,659,293.53	28.99	USCGS BENCH MARK SBC							
NOA/VOS TIDAL BENCH MARKS AT THE PORT OF ANCHORAGE 9459912	2,644,429.31	1,659,293.53	28.99	USCGS BENCH MARK SBC							

CONTRACTOR: TERRASOUD, LTD. CONTRACT NO. W1114B-08-D-0002-0005
 CITY: PALMER STATE: ALASKA

ALASKA DISTRICT
 CORPS OF ENGINEERS
 ANCHORAGE, ALASKA

PROJECT: ANCHORAGE, ALASKA
 COOK INLET NAVIGATION CHANNEL
 PROJECT CONDITION SURVEY
 AUGUST 21-25, 2008

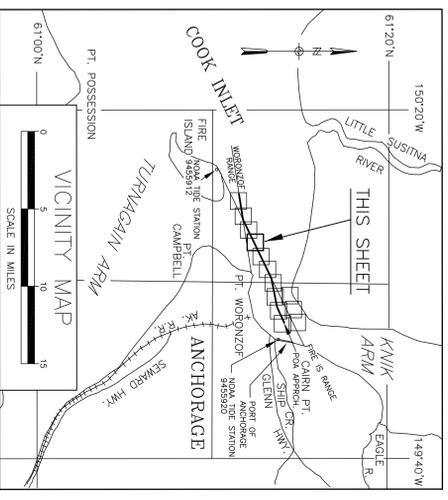
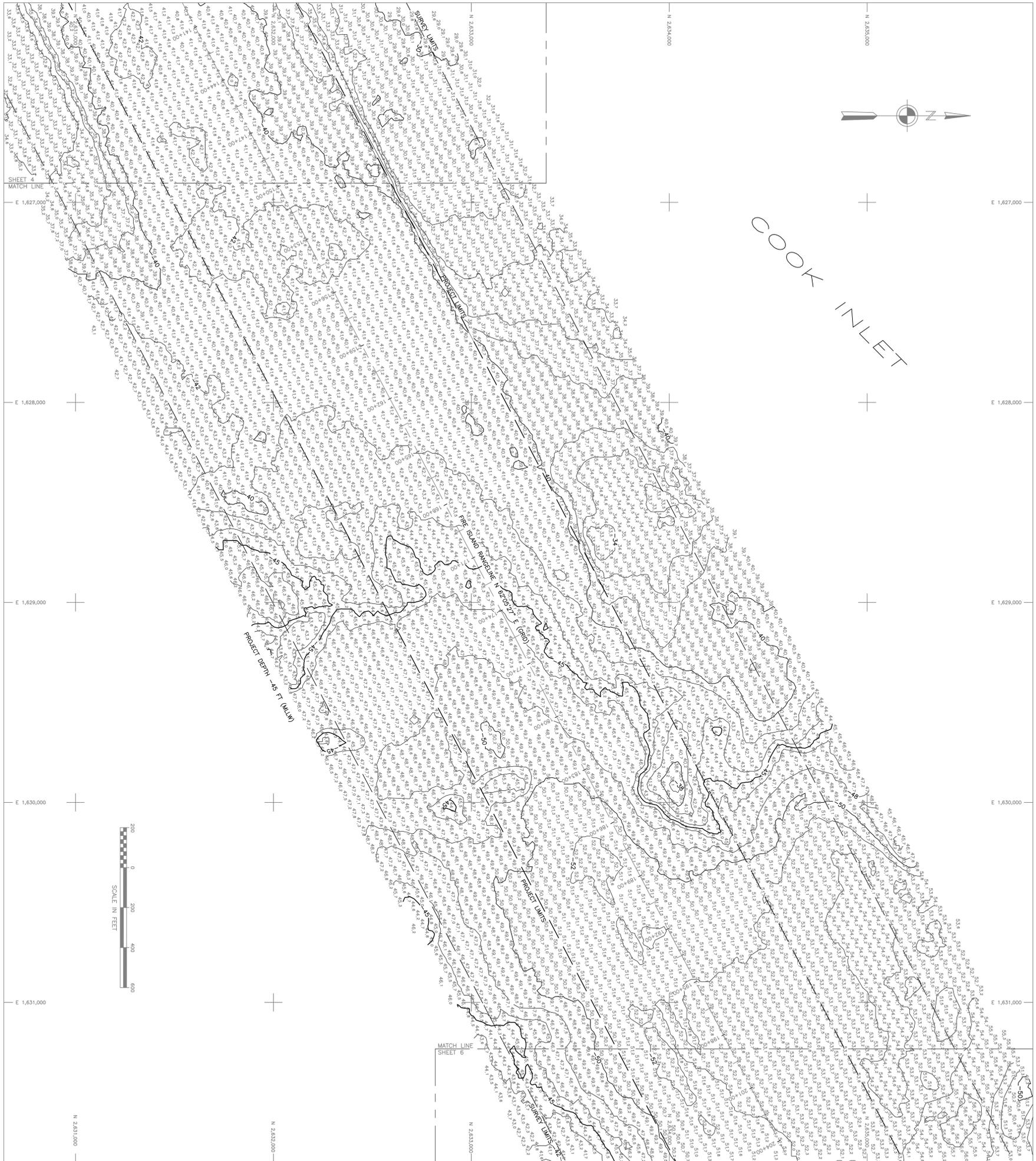
DATE: _____

SCALE: 1" = 200'

SHEET 4 OF 14



COOK INLET



NOTES

- HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 4, NAD83 IN U.S. SURVEY FEET USING USACE 25444288.25, E 1659727.47, 4466593.19, E 1660358.49 AND USACE SBC 3 AND 1978/85 N
- VERTICAL CONTROL IS MEAN-LOWER-LOW-WATER (MLW = 0.0') IN U.S. SURVEY FEET BASED ON 04/21/2004, HOLDING USACE SBC 'B' 75 1964/45 36.82' AND NOAA/VOS TIDAL DATUM '9459912 FIRE ISLAND, ALASKA', PUBLISHED 05/27/2004, HOLDING NOS SBC 'BM 13 1974/45 28.41'. (SEE SHEET 10)
- THIS SURVEY WAS CONDUCTED AUGUST 21-25, 2008. SOUNDINGS WERE COLLECTED USING A RESON SEABAT 8101 MULTIBEAM ECHOSOUNDER SYSTEM WITH A 200KHZ, 150 DEGREE SWATH-WITH SWATH-ONLY MODE. SOUND VELOCITY WAS MEASURED AND APPLIED USING AN APPLIED MICROSYSTEMS SV-42 SOUND VELOCITY PROBE. DURING THE SURVEY, HULL-TO-ROCKING HEAD MOUNTED AT NOAA/VOS THE STATION '9459907' AT THE PORT OF ANCHORAGE (SEE NOTE 4). SURVEY LINE WASHINGTON AND DATA COLLECTION WERE CONDUCTED USING GPS ONYX (VMS) INTEGRATED SOFTWARE. SOFTWARE AND DATA COLLECTION WERE CONDUCTED USING GPS ONYX (VMS) INTEGRATED SOFTWARE.
- THE PORT OF ANCHORAGE AS NOTED PREVIOUSLY, THE PORT OF ANCHORAGE WAS ADJUSTED TO REFLECT THE DIFFERENCE IN THE DATUM VALUES AT THE PORT OF ANCHORAGE (NOAA/VOS 9459920) AND THE PORT OF ANCHORAGE (NOAA/VOS 9459912) FROM THE METHOD OF SURVEY. THE COOK INLET NAVIGATION CHANNEL INTO THE PORT OF ANCHORAGE. THE ADJUSTMENT IS BASED ON THE OBSERVED RISE DIFFERENCE INDICES THE PORT OF ANCHORAGE AT 0.0' AND FIRE ISLAND AT -3.72'. THE ADJUSTMENT WAS PERFORMED USING CANS BASE EDITOR V2.1 RASING ALL SOUNDINGS THE VERTICAL DATUM. THE ADJUSTMENT AT THE PORT OF ANCHORAGE IS 0.0' EXTENDING TO AN ADJUSTMENT OF -4.72' AT FIRE ISLAND (SEE DIAGRAM SHEET 1).
- THIS DRAWING IS INDICATIVE OF CONDITIONS AT THE TIME OF SURVEY.

COOK INLET NAVIGATION CHANNEL COORDINATES

CHANNEL CENTERLINE		CORNER		STATION	
COR	STATION	DESCRIPTION	COR	NORTHING	EASTING
COR	NORTHING	EASTING	STATION	COR <td>NORTHING</td>	NORTHING
C1.1	2,627,865.51	1,613,018.09	04+00	COR	NORTHING
C1.2	2,628,534.04	1,619,240.43	65+00	N07	2,642,199.38
C1.3	2,630,188.27	1,640,443.44	103+00	POA APPROACH	1,650,534.12
C1.4	2,644,712.17	1,650,169.36	403+50	POA APPROACH	1,650,534.12
C1.5	2,644,429.31	1,655,293.53	459+50	CENTERLINE POA APPROACH	1,659,192.00

SURVEY LIMITS		CORNER		STATION	
COR	NORTHING	EASTING	COR	NORTHING	EASTING
S1.1	2,627,864.80	1,612,836.13	S1.6	2,638,248.74	1,640,905.97
S1.2	2,629,003.63	1,619,076.83	S1.7	2,642,850.64	1,649,804.06
S1.3	2,640,126.80	1,640,076.80	S1.8	2,645,312.79	1,654,824.06
S1.4	2,653,682.19	1,619,240.24	S1.9	2,640,373.89	1,650,534.12
S1.5	2,697,892.92	1,613,018.09	S1.9	2,645,312.79	1,659,192.00

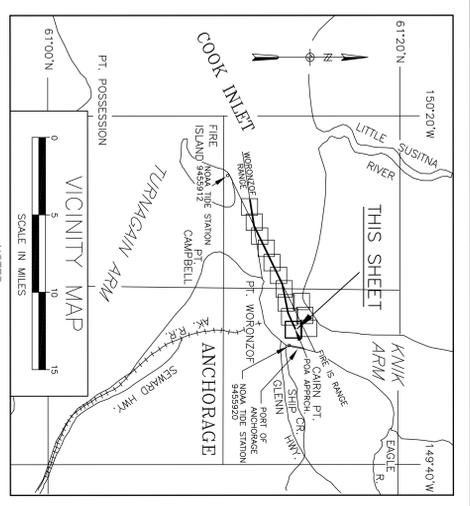
STATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
T END 1978	2,646,622.19	1,680,922.43	41.39	USACE SBC
E END 1978	2,646,622.19	1,680,922.43	41.39	USACE SBC
TER96-10 2008	2,644,971.59	1,660,156.45	80.40	PORT OFFICE ANT. MOUNT
PORT 1989	2,639,936.64	1,656,922.51	39.93	USACE SBC
FO-1	2,629,995.41	1,643,197.75	-	USACE SBC
VAN DUSEN GPS 1988	2,621,198.82	1,648,753.69	-	NOS SBC
NOAA/VOS TIDAL BENCH MARKS AT THE PORT OF ANCHORAGE 9459920				
TIDAL 16 1966	2,644,433	1,659,727	40.53	USACE BENCH MARK SBC
B 75 1964	2,644,438	1,660,095	36.82	USACE BENCH MARK SBC
BM 13 1974	2,620,650	1,604,180	29.99	USACE THE-SVA SBC
BM 13 1974	2,620,650	1,604,180	29.99	USACE THE-SVA SBC

CONTRACTOR: PALMER TERRASOUD, LTD.
 CITY: PALMER STATE: ALASKA
 CONTRACT NO.: W1114B-08-D-0002-0005

PROJECT NUMBER: 2556-08
 SURVEY NO.: 2556-08
 SCALE: 1" = 200'
 SHEET 5 OF 14

ANCHORAGE, ALASKA
 COOK INLET NAVIGATION CHANNEL
 PROJECT CONDITION SURVEY
 AUGUST 21-25, 2008

PREPARED BY: CAP/SIM/DSM
 CHECKED BY: S. LEATHAM
 DRAWN BY: KDW
 DATE: 2008



1. HORIZONTAL CONTROL IS ALASKA STATE PLANE ZONE 4, NAD83 IN U.S. SURVEY FEET HOLDING USACE 2544428.25, E 1659725.47, 494652.19, E 1660358.43 AND USACE SBC 3 END 1978 85 N

2. VERTICAL CONTROL IS MEAN-LOWER-LOW-WATER (MLLW = 0.0') IN U.S. SURVEY FEET BASED ON 04/21/2003 HOLDING USACE SBC 'B' 75 1964 45 36.82' AND NOAA/VOS TIDAL DATUM '9459912 FIRE ISLAND, ALASKA', PUBLISHED 05/21/2004, HOLDING NOS SBC 'B' 13 1974 45 28.41'. (SEE SHEET 1101 MULTIBeam ECHOSOUNDER SYSTEM WITH A ZODACZ 150 DEGREE SWATH-WIDTH OPERATING ON KINEMATIC GPS CORRECTIONS BROADCAST FROM A TRIMBLE 7400S RIK BASE STATION AT THE PORT OF ANCHORAGE. SOUND VELOCITY WAS MEASURED AND APPLIED USING AN APPLIED MICROSYSTEMS SV- VZ SOUND VELOCITY PROBER DEPLOYED DURING THE SURVEY. HULL-MOUNTED HEART WALLS AT NOAA/VOS THE STATION '9459920' AT THE PORT OF ANCHORAGE (SEE NOTE 4). SURVEY LINE NAVIGATION AND DATA COLLECTION WERE CONDUCTED USING GPS ONLY (VRS) INTEGRATED SOFTWARE. SOFTWARE AND DATA WERE PROVIDED BY A SUBSCRIPTION OF GPS SWAN AND SWAN VRS (VRS).

4. THE PORT OF ANCHORAGE AS NOTED PREVIOUSLY IS A TIDAL CHANNEL AND THE ADJUSTMENT TO REFLECT THE DIFFERENCE IN THE DATUM VALUES AT THE PORT OF ANCHORAGE (NOAA/VOS 9459920) AND THE PORT OF ANCHORAGE (NOAA/VOS 9459912) WAS PERFORMED TO PROVIDE AN ANCHORAGE MLLW BASED APPROXIMATE POSITION OF THE COOK INLET NAVIGATION CHANNEL INTO THE PORT OF ANCHORAGE. THE ADJUSTMENT IS BASED ON THE OBSERVED RIK DIFFERENCE HINDS THE PORT OF ANCHORAGE AT 0.0' AND FIRE ISLAND AT -3.72'. THE ADJUSTMENT WAS PERFORMED USING CHAS BASE EDITOR V2.1 RASING ALL SOUNDINGS THE VERTICAL DATUM. THE ADJUSTMENT AT THE PORT OF ANCHORAGE IS 0.0' EXTENDING TO AN ANCHORAGE OF 4.372' AT FIRE ISLAND (SEE DIAGRAM SHEET 1).

5. THIS DRAWING IS INDICATIVE OF CONDITIONS AT THE TIME OF SURVEY.

COOK INLET NAVIGATION CHANNEL COORDINATES

CHANNEL CENTERLINE		CORNER		STATION	
COR	STATION	DESCRIPTION	COR	NORTHING	EASTING
NC1	2.627346551	1.61292556 04+00	NC6	2.638271103	1.646626830 303+00
NC2	2.628453404	1.61924043 65+00	NC7	2.642139238	1.648983388 403+50
NC3	2.62968552	1.64025607 303+00	NC8	2.644878756	1.65505531 459+50
NC4	2.62836548	1.61311061 0+00	NC9	2.64123495	1.65035484 403+50
NC5	2.627495238	1.61957873 85+00	NC10	2.643398096	1.65553175 459+50

SURVEY LIMITS		STATION	
CORNER	NORTHING	EASTING	STATION
SI1	2.62734655	1.61292556	SI.6
SI2	2.62900363	1.61910768	SI.7
SI3	2.640172680	1.640076830	SI.8
SI4	2.625326219	1.61311061	SI.9
SI5	2.627495238	1.61957873	SI.10

CONTROL POINTS		ELEVATION	
STATION	NORTHING	EASTING	DESCRIPTION
PT END 1978	2.64662683	1.64662683	41.39 USACE SBC
PT END 2008	2.64497159	1.65013545	80.40 PORT OFFICE ANT. MOUNT
PORT 1989	2.63933664	1.65692251	39.93 USACE SBC
FO-1	2.62939541	1.64378775	-
YAN DUSEN GPS 1988	2.62719882	1.648753169	-
YAN DUSEN GPS 1992	2.62939541	1.64378775	-
NOAA/VOS TIDAL BENCH MARKS AT THE PORT OF ANCHORAGE 9459920			
TIDAL 16 1966	2.6442933	1.659727	40.53 USACE BENCH MARK SBC
B 75 1964	2.6442938	1.650095	36.82 USACE BENCH MARK SBC
BAL 13 1974	2.6206520	1.604180	29.99 USACE THE-SVA SBC
TRIF 1980	2.6201520	1.604180	29.99 USACE THE-SVA SBC

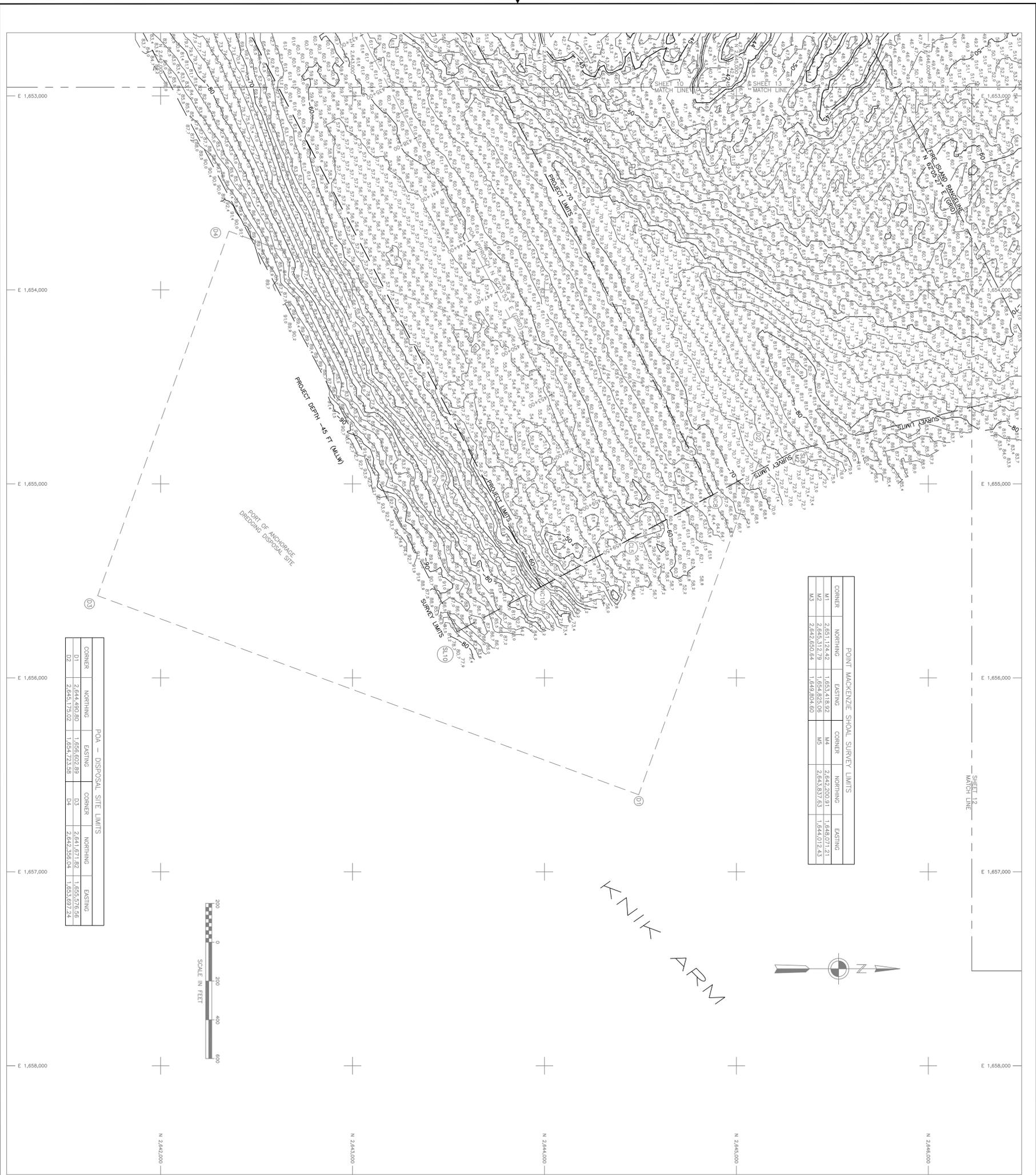


POA - DISPOSAL SITE LIMITS

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
01	2.64449080	1.65660289	03	2.64167182	1.65527656
02	2.62617502	1.65412358	04	2.62653804	1.65389726

POINT MACKENZIE SHOAL SURVEY LIMITS

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
M1	2.65112442	1.65341882	M4	2.64220081	1.64807121
M2	2.64531279	1.65482506	M5	2.64538763	1.64401243
M3	2.64265084	1.64938480			



CONTRACTOR: TERRASO, LTD. CONTRACT NO. W1114B-08-D-0002-0005
 CITY: PALMER STATE: ALASKA

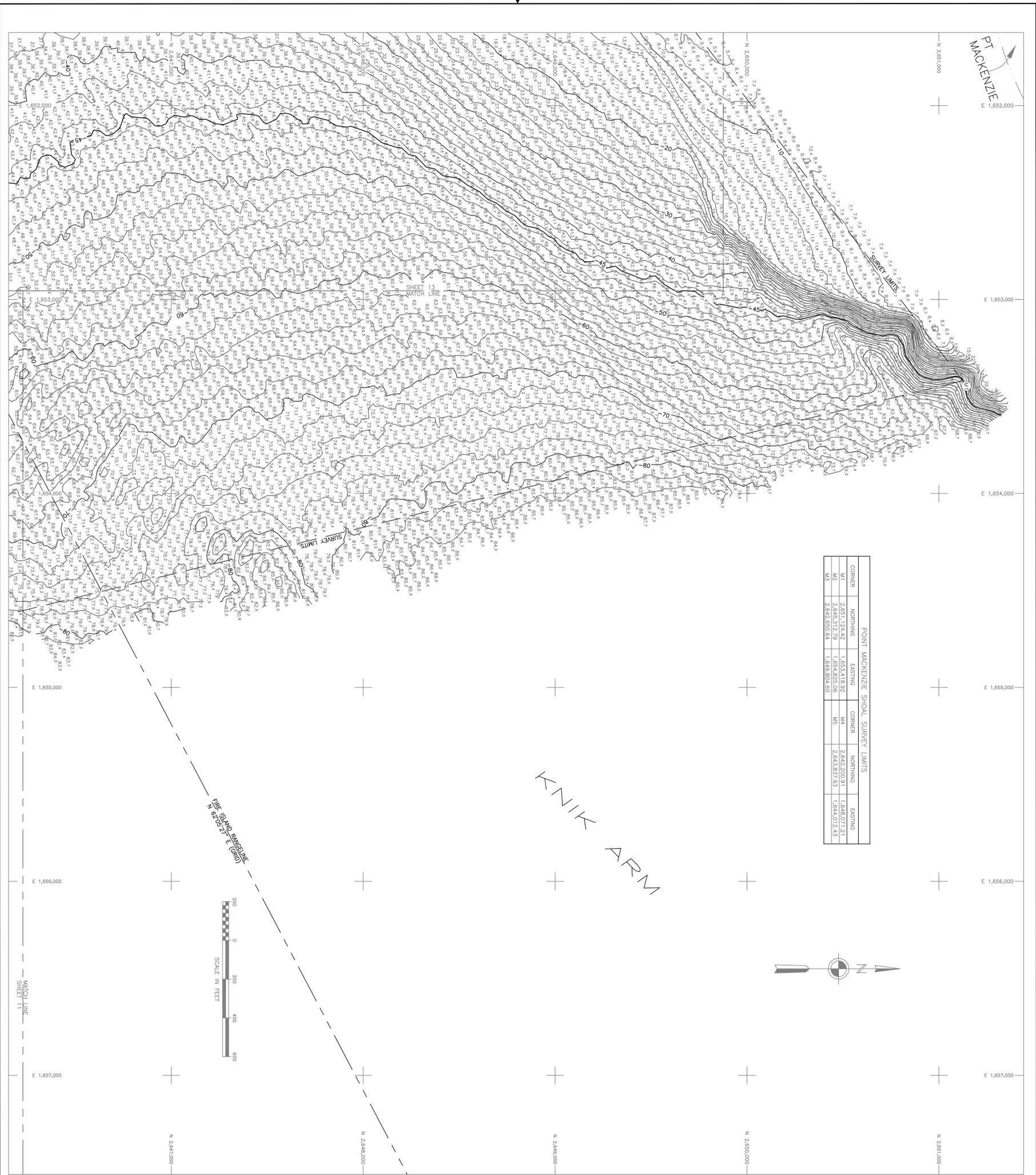
ALASKA DISTRICT
 CORPS OF ENGINEERS
 ANCHORAGE, ALASKA

SURVEYED: CAP/SJM/DSW
 DRAWN: S. LEATHAM
 CHECKED: KDW
 SUBMITTED:

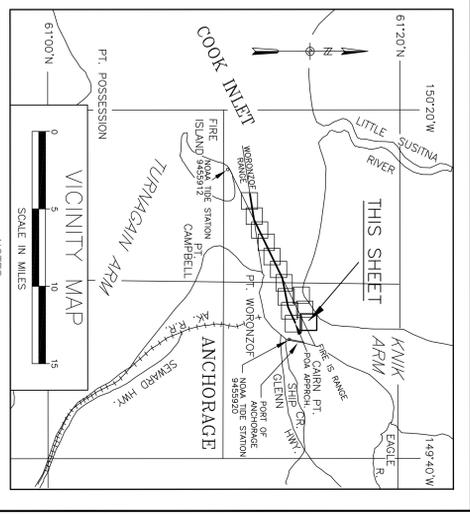
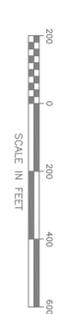
ANCHORAGE, ALASKA
 COOK INLET NAVIGATION CHANNEL
 PROJECT CONDITION SURVEY
 AUGUST 21-25, 2008

RECOMMENDED: APPROVED: DATE:

PROJECT NUMBER: 2556-08
 SCALE: 1" = 200'
 SURVEY NO.: 2556-08
 SHEET 11 OF 14



POINT MACKENZIE SHOAL SURVEY LIMITS			
CORNER	NORTHING	EASTING	CORNER
M1	2,651,124.42	1,653,418.92	M4
M2	2,645,312.79	1,654,623.06	M5
M3	2,642,650.64	1,649,804.60	



NOTES

- HORIZONTAL CONTROL IS ALASKA STATE PLANE ZONE 4, NAD83 IN U.S. SURVEY FEET USING USACE 2,644,298.25, E 1,659,725.47, 4,646,652.19, E 1,660,358.43 AND USACE SBC 3 END 1978, 85 N
- VERTICAL CONTROL IS MEAN-LOWER-LOW-WATER (MLLW = 0.0') IN U.S. SURVEY FEET BASED ON 04/21/2003 HOLDING USACE SBC 'B' 75 1964' AS 36.82' AND NOAA/VOS TIDAL DATUM '9459912 FIRE ISLAND, ALASKA', PUBLISHED 05/21/2004, HOLDING NOS SBC 'B' 13 1974' AS 28.41'. (SEE SHEET 11 FOR TIDAL DATUM INFORMATION.)
- THIS SURVEY WAS CONDUCTED AUGUST 21-25, 2008. SOUNDINGS WERE COLLECTED USING A RESON SEABAT 8101 MULTIBEAM ECHOSOUNDER SYSTEM WITH A ZODAC 150 DEGREE SWATH-WITH OPERATING ON ENRANGE GPS CORRECTIONS BROADCAST FROM A TRIMBLE 7400S RIB BASE STATION. SOUND VELOCITY WAS MEASURED AND APPLIED USING AN APPLIED MICROSYSTEMS SV- VZ SOUND VELOCITY PROBE DEPLOYED DURING THE SURVEY. POLAR-TIME-RANGING HEADS WERE PROVIDED IN REAL-TIME USING A CODA OCTOPUS F-180 SERIAL ATTITUDE AND POSITIONING SYSTEM. SOUND VELOCITY WAS MEASURED AND APPLIED USING AN APPLIED MICROSYSTEMS SV- VZ SOUND VELOCITY PROBE DEPLOYED DURING THE SURVEY. POLAR-TIME-RANGING HEADS WERE PROVIDED IN REAL-TIME USING A CODA OCTOPUS F-180 SERIAL ATTITUDE AND POSITIONING SYSTEM. NAVIGATION AND DATA COLLECTION WERE CONDUCTED USING GPS (VRS) INTEGRATED SOFTWARE. SOFTWARE LOGS AND DATA COLLECTION WERE CONDUCTED USING GPS (VRS) INTEGRATED SOFTWARE. THE PORT OF ANCHORAGE AS NOTED PROVISIONAL TIDAL DATUMS (NOAA/VOS 9459920) AND THE DIFFERENCE IN THE DATUM VALUES AT THE PORT OF ANCHORAGE (NOAA/VOS 9459920) AND THE PORT OF ANCHORAGE (NOAA/VOS 9459912) WAS 0.00 FEET. THE TIDAL DATUMS WERE ADJUSTED TO THE COMMON INLET NAVIGATION CHANNEL INTO THE PORT OF ANCHORAGE. THE ADJUSTMENT IS BASED ON THE OBSERVED RISE DIFFERENCE POINTS AT THE PORT OF ANCHORAGE AT 0.0' AND FIRE ISLAND AT -3.72'. THE ADJUSTMENT WAS PERFORMED USING CHAS BASE EDITOR V2.1 RASING ALL SOUNDINGS THE TIDAL DATUM. THE ADJUSTMENT AT THE PORT OF ANCHORAGE IS 0.0' EXTENDING TO AN ADJUSTMENT OF +3.72' AT FIRE ISLAND (SEE DIAGRAM SHEET 1).
- THIS DRAWING IS INDICATIVE OF CONDITIONS AT THE TIME OF SURVEY.

COOK INLET NAVIGATION CHANNEL COORDINATES

CHANNEL CENTRIANE			
COR	NORTHING	EASTING	STATION
CL1	2,628,885.501	1,613,018.09	0+00
CL2	2,628,885.501	1,613,018.09	0+00
CL3	2,630,188.271	1,640,443.44	100+00
CL4	2,644,712.17	1,650,169.36	403+50
CL5	2,644,429.311	1,655,293.53	459+50

SURVEY LIMITS

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING	STATION
SI1	2,627,248.90	1,612,836.13	SI6	2,638,248.74	1,640,905.97	
SI2	2,629,003.63	1,619,076.83	SI7	2,642,604.64	1,649,804.60	
SI3	2,640,726.80	1,640,076.80	SI8	2,645,312.79	1,654,823.06	
SI4	2,625,682.19	1,619,022.25	SI9	2,640,726.89	1,650,524.12	
SI5	2,627,952.38	1,619,578.73	SI10	2,643,980.06	1,655,354.84	

CONTROL COORDINATES

STATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
TT END 1978	2,646,622.19	1,660,922.43	41.39	USACE SBC
TT END 1978	2,646,622.19	1,660,922.43	41.39	USACE SBC
TERESA-10 2008	2,644,971.59	1,660,156.45	80.40	PORT OFFICE ANT. MOUNT
PORT 1989	2,639,935.64	1,656,922.51	39.93	USACE SBC
FO-1	2,629,995.41	1,643,787.75	-	USACE SBC
YAN DUSEN GPS 1988	2,621,198.82	1,648,753.69	-	USACE SBC
YAN DUSEN GPS 1988	2,621,198.82	1,648,753.69	-	USACE SBC
NOAA/VOS TIDAL BENCH MARKS AT THE PORT OF ANCHORAGE 9459920				
TIDAL 16 1966	2,644,429.31	1,659,727	40.53	USACE BENCH MARK SBC
B 75 1964	2,644,429.31	1,659,727	36.82	USACE BENCH MARK SBC
NOAA/VOS TIDAL BENCH MARKS AT FIRE ISLAND 9459912				
BH1 13 1974	2,620,650	1,604,180	29.99	USACE TIDAL BENCH MARK SBC
BIFE 1980	2,620,650	1,604,180	29.99	USACE TIDAL BENCH MARK SBC

CONTRACTOR PALMER
CITY PALMER
STATE ALASKA

CONTRACT NO. W911NB-08-D-0002-0005

ALASKA DISTRICT
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

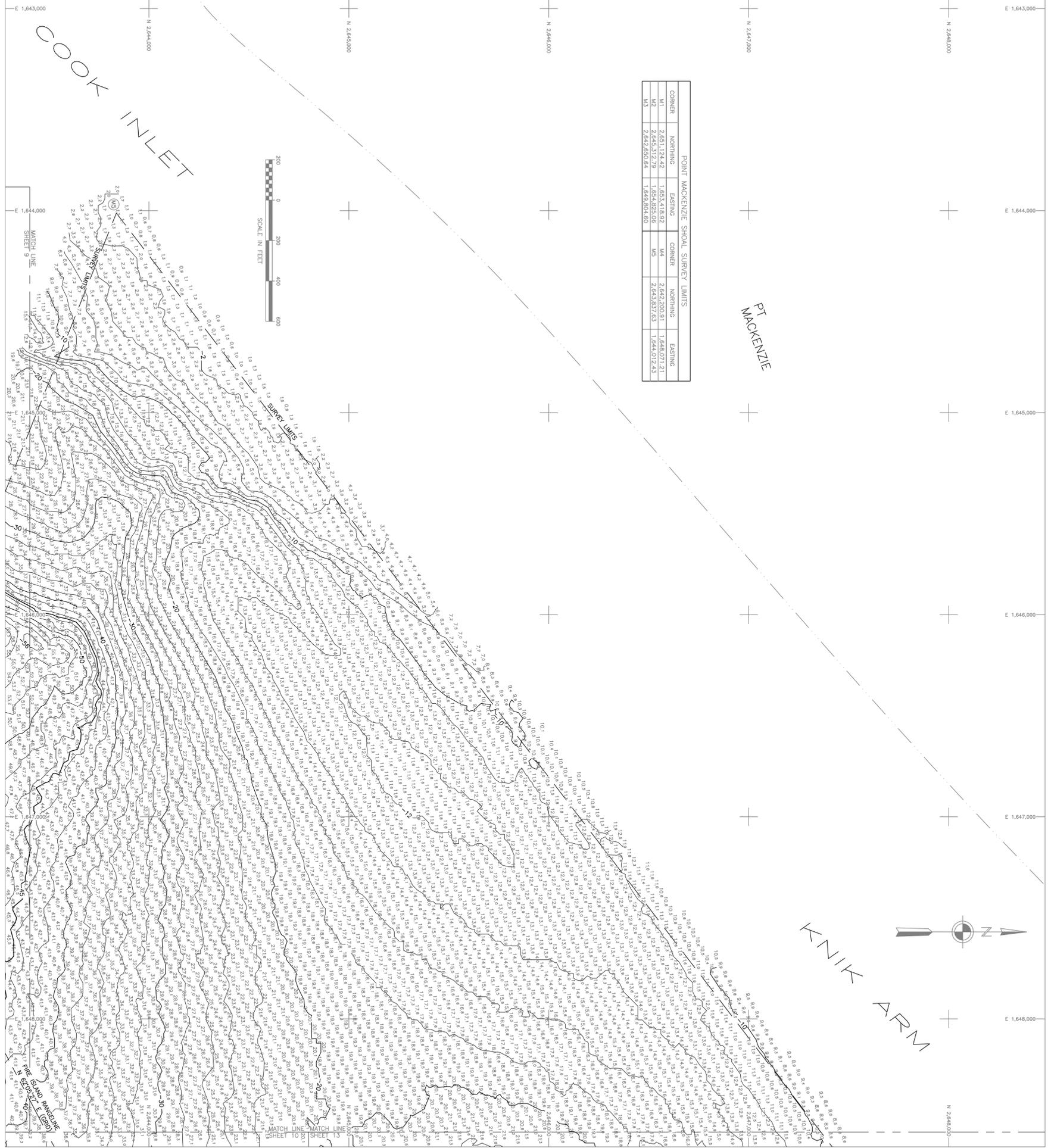
SURVEYED: CJP/SJW/DSW
CHECKED: BRANKIN S. LEATHAM
KOW
SUBMITTED:

ANCHORAGE, ALASKA
COOK INLET NAVIGATION CHANNEL
PROJECT CONDITION SURVEY
AUGUST 21-25, 2008

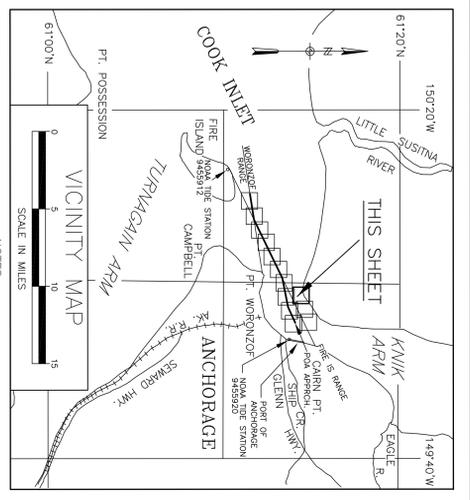
APPROVED:

RECOMMENDED:

SURVEY NO. 2556-08
SCALE 1" = 200'
SHEET 12 OF 14



CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
M1	2,651,124.42	1,653,418.92	M4	2,642,200.91	1,648,071.21
M2	2,645,312.79	1,654,825.06	M5	2,643,837.63	1,644,072.43
M3	2,642,650.84	1,649,804.80			



- NOTES
- HORIZONTAL CONTROL IS ALASKA STATE PLANE ZONE 4, NAD83 IN U.S. SURVEY FEET HOLDING USACE 2544428.25, E 1,659,727.47, UTM 18Q UTM COORDINATES AND USACE SBC 3 AND 1978-85 N 2544428.25, E 1,659,727.47.
 - VERTICAL CONTROL IS MEAN-LOWER-LOW-WATER (MLLW = 0.0') IN U.S. SURVEY FEET BASED ON 04/21/2003 HOLDING USACE SBC 3, 7/5 1964, 45 36.82' AND NOAA/VOS TIDAL DATUM 70459912 FIRE ISLAND, ALASKA, PUBLISHED 05/21/2004, HOLDING NOS SBC FM 13 1974, AS 28.41'. (SEE THIS SHEET FOR MLLW CONVERSIONS.)
 - THIS SURVEY WAS CONDUCTED AUGUST 21-25, 2008. SOUNDINGS WERE COLLECTED USING A RESON SEABAT 8101 MULTIBeam ECHOSOUNDER SYSTEM WITH A ZOOKZ 150 DEGREE SWATH-WIDTH SONAR. SOUND VELOCITY WAS MEASURED AND APPLIED USING AN APPLIED MICROSYSTEMS SH-VZ SOUND VELOCITY PROFILE DEPLOYED DURING THE SURVEY. HULL-TO-KEEL HEIGHT MARKERS AT NOAA/VOS TIDAL BENCH MARKS AT THE PORT OF ANCHORAGE (SEE NOTE 5), SURVEY LINE WASHINGTON AND DATA COLLECTION WERE CONDUCTED USING GPS ONLY (VANO) INTEGRATED SOFTWARE. SOFTWARE WAS PROVIDED UNDER A CONVERSION OF GPS ONLY AND DATA (VANO).
 - THE PORT OF ANCHORAGE AS NOTED PREVIOUSLY (VANO) WAS ADJUSTED TO REFLECT THE DIFFERENCE IN THE DATUM VALUES AT THE PORT OF ANCHORAGE (NOAA/VOS 3495920) AND THE PORT OF WASHINGTON (NOAA/VOS 3495920) FROM THE METHOD OF USING THE COOK INLET WASHINGTON CHANNEL INTO THE PORT OF ANCHORAGE. THE ADJUSTMENT IS BASED ON THE OBSERVED RISK DIFFERENCE INDICATES THE PORT OF ANCHORAGE AT 0.0' AND FIRE ISLAND AT -3.72'. THE ADJUSTMENT WAS PERFORMED USING CANS BASE EDITOR V2.1 RASING ALL SOUNDINGS TO THE OBSERVED RISK DIFFERENCE AT THE PORT OF ANCHORAGE IS 0.0' EXTENDING TO AN ADJUSTMENT OF 4.712' AT FIRE ISLAND (SEE DIAGRAM SHEET 1).
 - AND NOAA/VOS TIDAL BENCH MARKS AT THE PORT OF ANCHORAGE (SEE NOTE 5).
 - THIS DRAWING IS INDICATIVE OF CONDITIONS AT THE TIME OF SURVEY.

CORNER	NORTHING	EASTING	STATION	DESCRIPTION
C1	2,622,885.50	1,613,018.09	10400	CENTRELINE WASHINGTON CHANNEL INTERSECTION
C2	2,639,188.27	1,642,443.44	103+00	FIRE ISLAND/TRANSITION TO FOA APPROACH
C3	2,644,429.31	1,655,283.53	458+50	CENTRELINE FOA APPROACH

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING	STATION
N1	2,627,248.80	1,612,292.56	0+00	N2	2,638,211.03	1,640,626.80
N2	2,628,534.04	1,619,240.43	65+00	N7	2,642,189.28	1,640,983.88
N3	2,639,685.52	1,640,256.07	303+00	N8	2,644,878.56	1,655,055.31
N4	2,626,365.48	1,613,110.61	0+00	N9	2,641,234.95	1,650,354.84
N5	2,627,952.38	1,619,978.73	85+00	N10	2,643,980.06	1,655,531.75

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
S1	2,627,248.80	1,612,292.56	S6	2,638,211.03	1,640,626.80
S2	2,629,003.63	1,619,076.83	S7	2,642,189.28	1,640,983.88
S3	2,640,126.80	1,640,076.80	S8	2,645,312.79	1,654,825.06
S4	2,625,682.19	1,613,018.09	S9	2,640,372.69	1,650,354.12
S5	2,626,922.25	1,613,022.25	S10	2,643,837.63	1,644,072.43

STATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
END 1978	2,646,622.19	1,680,922.13	41.39	USACE SBC
END 2008	2,644,429.31	1,655,283.53	80.40	PORT OFFICE ANT. MOUNT
FOOT 1989	2,639,356.64	1,656,922.51	39.93	USACE SBC
FO-1	2,629,954.41	1,643,787.75	-	USACE SBC
VAN DUSEN GPS 1982	2,621,198.82	1,648,753.69	-	USACE SBC
NOAA/VOS TIDAL BENCH MARKS AT THE PORT OF ANCHORAGE 3495920				
B 75 1964	2,644,429.31	1,659,727.47	40.82	USACE BENCH MARK SBC
B 75 1964	2,644,429.31	1,650,095.36	36.82	USACE BENCH MARK SBC
B 13 1974	2,620,650.00	1,604,180.00	29.99	USACE TIDAL BENCH MARK SBC
B 13 1974	2,620,650.00	1,604,180.00	29.99	USACE TIDAL BENCH MARK SBC

CONTRACT NO. **W911NB-08-D-0002-0005**
 CONTRACTOR **TERROSOND, LTD.**
 CITY **PALMER** STATE **ALASKA**

ALASKA DISTRICT
 CORPS OF ENGINEERS
 ANCHORAGE, ALASKA

PROJECT: **ANCHORAGE, ALASKA**
COOK INLET NAVIGATION CHANNEL
PROJECT CONDITION SURVEY
AUGUST 21-25, 2008

STARTED: **CJP/SJM/SM**
 CHECKED: **BRENN S. LEHMAN**
 DESIGNED: **KOW**
 SUBMITTED:
 RECOMMENDED:
 SURVEY NO. **2556-08**
 SCALE **1" = 200'**
 SHEET **14** OF **14**