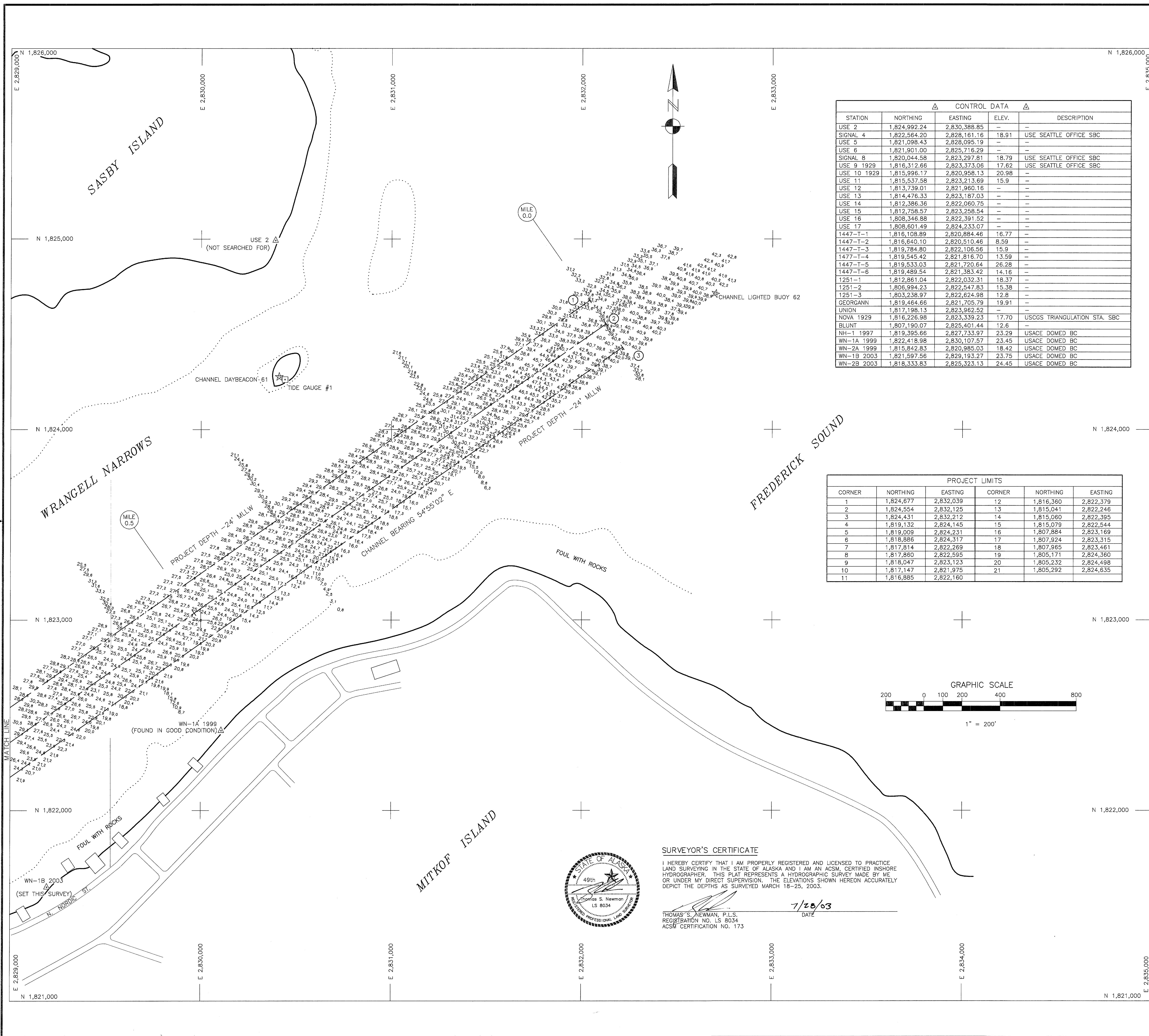
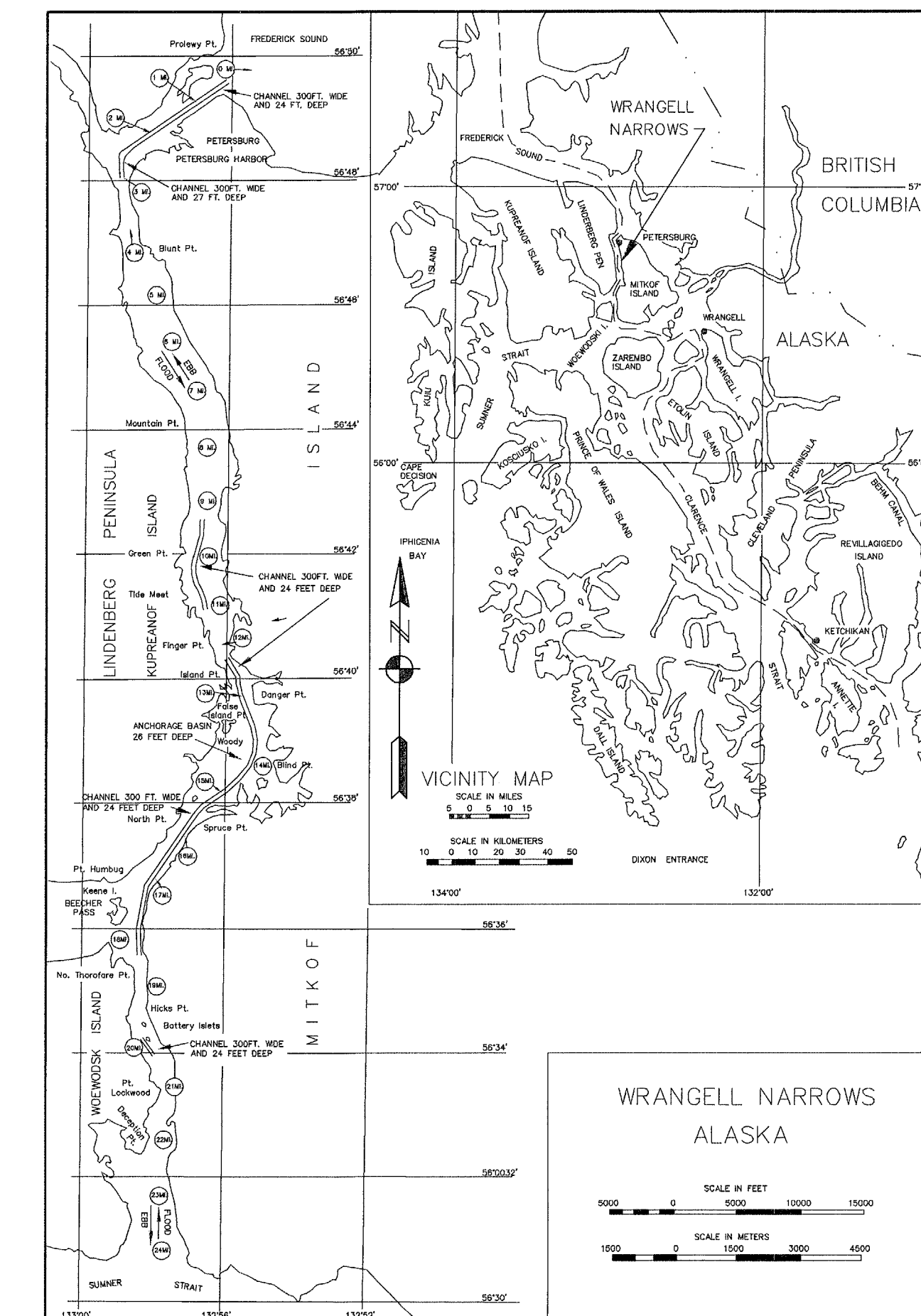




CONTROL DATA				
STATION	NORTHING	EASTING	ELEV.	DESCRIPTION
USE 2	1,824,992.24	2,830,388.85	—	—
SIGNAL 4	1,822,564.20	2,828,161.16	18.91	USE SEATTLE OFFICE SBC
USE 5	1,821,098.43	2,828,095.19	—	—
USE 6	1,821,901.00	2,825,716.29	—	—
SIGNAL 8	1,820,044.58	2,823,297.81	18.79	USE SEATTLE OFFICE SBC
USE 9 1929	1,816,312.66	2,823,373.08	17.62	USE SEATTLE OFFICE SBC
USE 10 1929	1,815,996.17	2,820,958.13	20.98	—
USE 11	1,815,537.58	2,823,213.69	15.9	—
USE 12	1,813,739.01	2,821,960.16	—	—
USE 13	1,814,476.33	2,823,187.03	—	—
USE 14	1,812,386.36	2,822,060.75	—	—
USE 15	1,812,758.57	2,823,258.54	—	—
USE 16	1,808,346.88	2,822,391.52	—	—
USE 17	1,808,601.49	2,824,233.07	—	—
1447-T-1	1,816,108.89	2,820,884.46	16.77	—
1447-T-2	1,816,640.10	2,820,510.46	8.59	—
1447-T-3	1,819,784.80	2,822,106.56	15.9	—
1477-T-4	1,819,545.42	2,821,816.70	13.59	—
1447-T-5	1,819,533.03	2,821,720.64	26.28	—
1447-T-6	1,819,489.54	2,821,383.42	14.16	—
1251-1	1,812,861.04	2,822,032.31	18.37	—
1251-2	1,806,994.23	2,822,547.83	15.38	—
1251-3	1,803,238.97	2,822,624.98	12.8	—
GEORGANN	1,819,464.66	2,821,705.79	19.91	—
UNION	1,817,198.13	2,823,962.52	—	—
NOVA 1929	1,816,226.98	2,823,339.23	17.70	USCGS TRIANGULATION STA. SBC
BLUNT	1,807,190.07	2,825,401.44	12.6	—
NH-1 1997	1,819,395.66	2,827,733.97	23.29	USACE DOMED BC
WN-1A 1999	1,822,418.98	2,830,107.57	23.45	USACE DOMED BC
WN-2A 1999	1,815,842.83	2,820,985.03	18.42	USACE DOMED BC
WN-1B 2003	1,821,597.56	2,829,193.27	23.75	USACE DOMED BC
WN-2B 2003	1,818,333.83	2,825,323.13	24.45	USACE DOMED BC

PROJECT LIMITS					
CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
1	1,824,677	2,832,039	12	1,816,360	2,822,379
2	1,824,554	2,832,125	13	1,815,041	2,822,246
3	1,824,431	2,832,212	14	1,815,060	2,822,395
4	1,819,132	2,824,145	15	1,815,079	2,822,544
5	1,819,008	2,824,231	16	1,807,884	2,823,169
6	1,818,886	2,824,317	17	1,807,924	2,823,315
7	1,817,814	2,822,289	18	1,807,965	2,823,461
8	1,817,860	2,822,595	19	1,805,171	2,824,360
9	1,818,047	2,823,123	20	1,805,232	2,824,498
10	1,817,147	2,821,975	21	1,805,292	2,824,635
11	1,816,885	2,822,160			



NOTES

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- VERTICAL CONTROL IS IN US SURVEY FEET AND IS REFERENCED TO MEAN LOWER LOW WATER DATUM (MLLW=0.0) HOLDING NOAA/NOS TIDAL BENCH MARK "1439 A 1978" AS 25.82'. MLLW DATUM IS BASED ON NOAA/NOS TIDAL BENCH MARK SHEET "ALASKA 945 1439, PETERSBURG, WRANGELL NARROWS, PUBLICATION DATE: 12/02/1991."
- SOUNDINGS ARE IN US SURVEY FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
- SURVEY DATA ACQUISITION WAS CONDUCTED MARCH 18-25, 2003. HORIZONTAL CONTROL WAS SURVEYED USING A COMBINATION OF STATIC GPS TECHNIQUES AND CONVENTIONAL TRIANGULATION METHODS. VERTICAL CONTROL WAS SURVEYED USING OPTICAL INSTRUMENTS AND DIFFERENTIAL LEVELING TECHNIQUES. SOUNDINGS WERE OBTAINED USING AN "ODOM HYDROTRAC" PRECISION DEPTH SOUNDER WITH A 200KHZ, 3 DEGREE BEAM-WIDTH, SINGLE-BEAM TRANSDUCER. POSITIONING WAS PROVIDED USING A "TRIMBLE DSM-212L" GPS RECEIVER OPERATING ON RTCM CORRECTORS BROADCAST FROM "TRIMBLE 4000SSC" BASE STATION SET AT USACE DOMED BC "NH-1 1997". DEPTHS WERE CORRECTED FOR TIDE USING DATA FROM THREE SEPARATE TIDE GAUGES SET AS INDICATED ON THE PLATS. A DUAL GAUGE ADJUSTMENT WAS APPLIED TO EACH OF THE 1 MILE SEGMENTS. "ODA WATERLOG AND ENDECO" TIDE GAUGES WERE UTILIZED FOR THIS PROJECT. NAVIGATION, DATA COLLECTION AND PROCESSING WERE PERFORMED USING "HYPACK MAX" INTEGRATED SOFTWARE.
- THIS PLAT INDICATES GENERAL CONDITIONS AT THE TIME OF SURVEY.

VOLUME COMPUTATIONS		
Project Depth -24' MLLW		
MINIMUM PAY LINE (-24' MLLW)		CUBIC YARDS
Between MINIMUM PAY LINE and MAXIMUM PAY LINE (-26' MLLW)		6,018
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, H:V)		9,507
TOTAL		15,525
Project Depth -27' MLLW		
MINIMUM PAY LINE (-27' MLLW)		CUBIC YARDS
Between MINIMUM PAY LINE and MAXIMUM PAY LINE (-29' MLLW)		37,128
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, H:V)		72,064
TOTAL		109,192

NAVIGATION AIDS			
USCG No.	DESCRIPTION	NORTHING	EASTING
23135	CHANNEL LIGHTED BUOY 53	1,814,989	2,822,247
23140	PETERSBURG CREEK RANGE FRONT LIGHT	1,817,808.7	2,822,040.4
23145	PETERSBURG CREEK RANGE REAR LIGHT	1,818,821.2	2,821,909.2
23150	CHANNEL LIGHT 54	1,816,214.8	2,822,461.2
23155	CHANNEL LIGHT 56	1,817,120.8	2,822,606.3
23160	CHANNEL LIGHT 58	1,817,865.4	2,823,091.5
23165	PETERSBURG BAR RANGE FRONT LIGHT	1,817,215.0	2,821,652.3
23170	PETERSBURG BAR RANGE REAR LIGHT	1,816,345.7	2,820,415.1
23185	CHANNEL LIGHTED BUOY 59	1,820,402	2,826,074
23195	CHANNEL LIGHTED BUOY 60	1,821,311	2,827,912
23200	CHANNEL DAYBEACON 61	1,824,276.8	2,830,409.0
23205	CHANNEL LIGHTED BUOY 62	1,824,713	2,832,699

CONTRACT NO. DACW85-01-D-0001		
CONTRACTOR TERRA SURVEYS, LLC		
CITY PALMER STATE ALASKA		
ALASKA DISTRICT CORPS OF ENGINEERS ANCHORAGE, ALASKA		
SURVEYED: KDW/WKR	WRANGELL NARROWS, ALASKA MILE 0.0 TO MILE 3.0 PROJECT CONDITION SURVEY MARCH 18-25, 2003	
DRAWN: LES		
CHECKED: KDW		
SUBMITTED: 4/8		
RECOMMENDED: Andrew T. Green	APPROVED: [Signature]	DATE: 15 August 2003
SURVEY NO. 2038-03		SCALE: 1" = 200'
		SHEET 1 OF 4

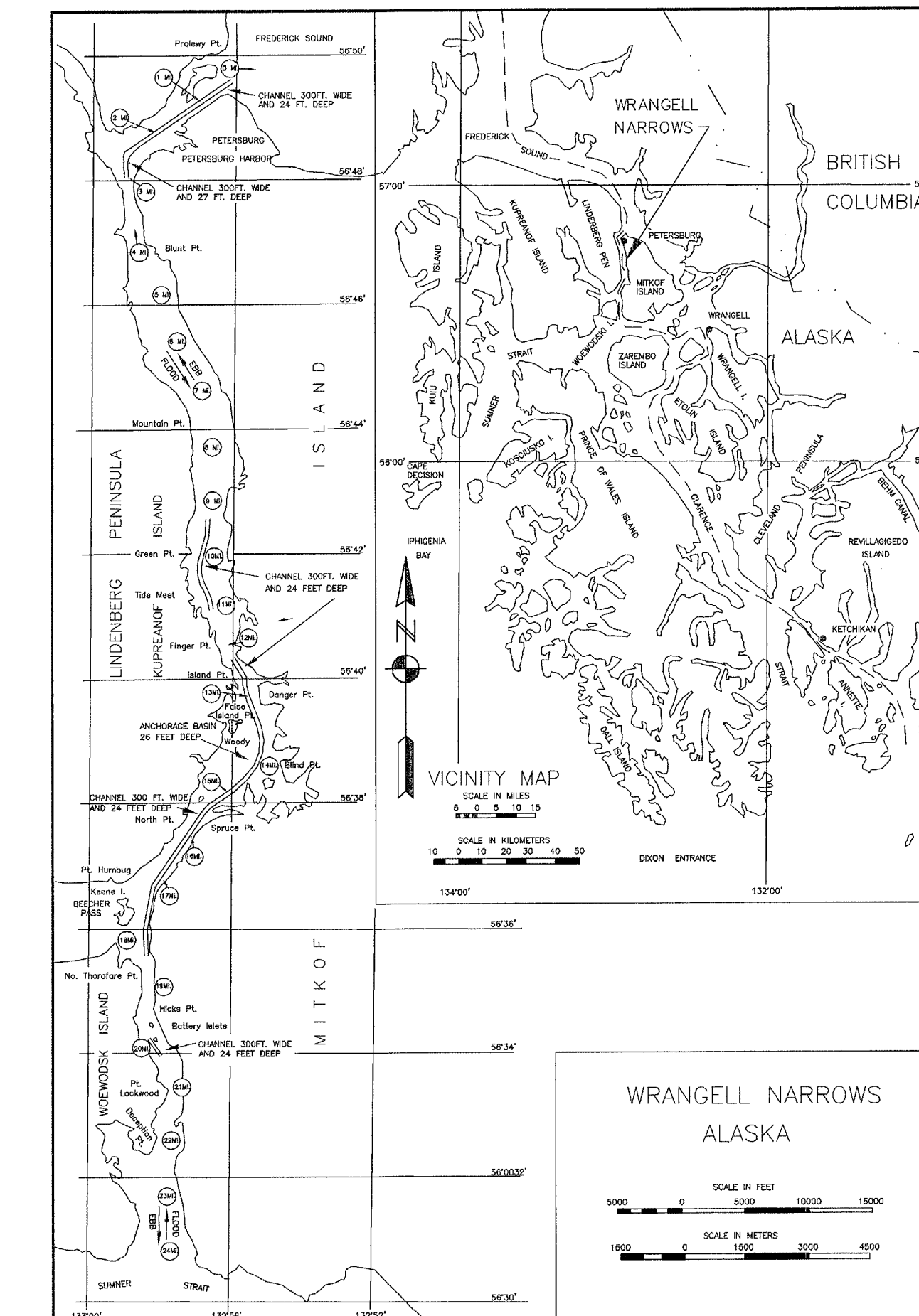
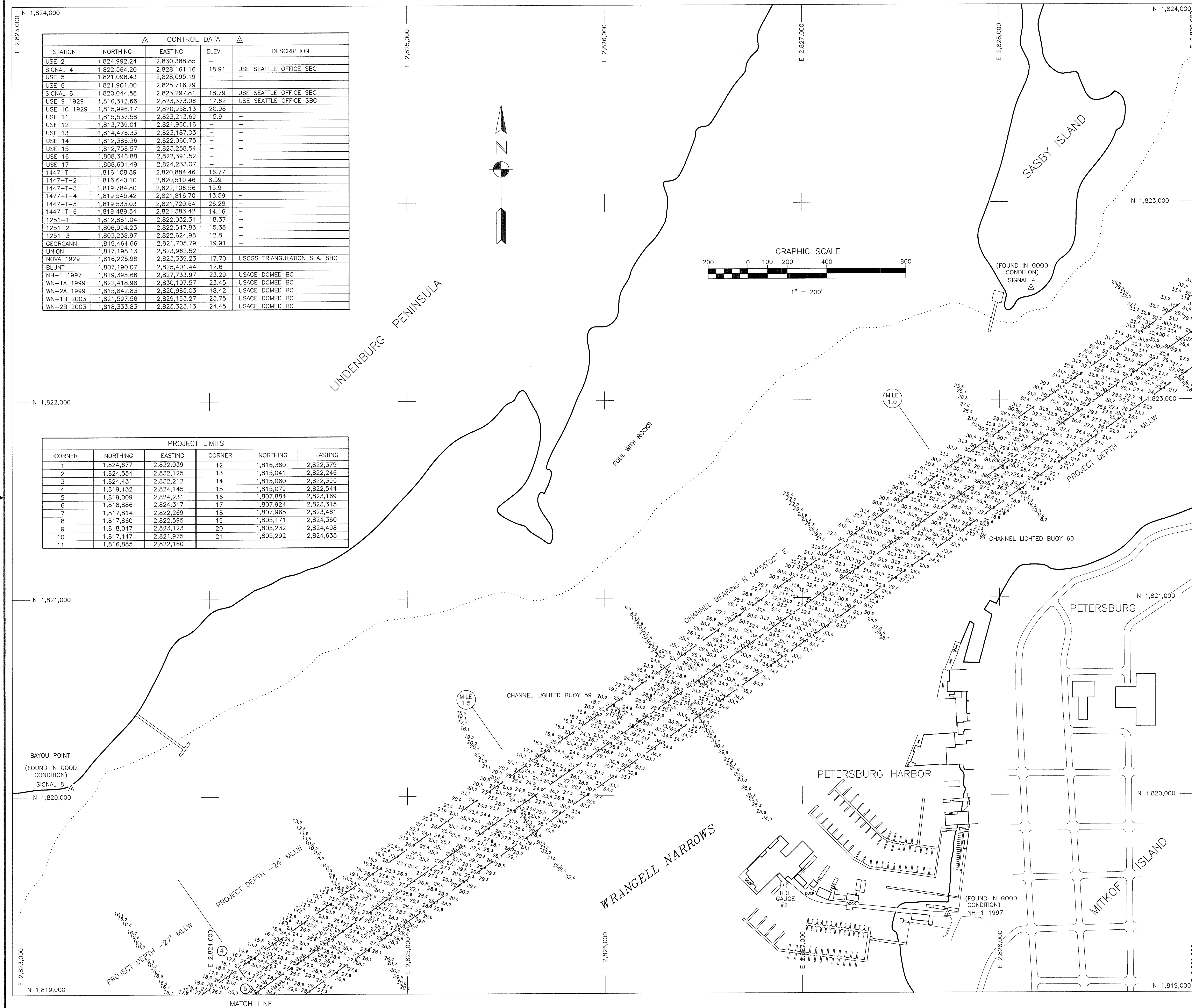


SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM PROPERLY REGISTERED AND LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF ALASKA AND I AM AN ACSM CERTIFIED INSHORE HYDROGRAPHER. THIS PLAT REPRESENTS A HYDROGRAPHIC SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION. THE ELEVATIONS SHOWN HEREON ACCURATELY DEPICT THE DEPTHS AS SURVEYED MARCH 18-25, 2003.

THOMAS S. NEWMAN, P.L.S.
REGISTRATION NO. LS 8034
ACSM CERTIFICATION NO. 173

7/20/03
DATE



NOTES

- HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD27, IN US SURVEY FEET HOLDING NGS "SIGNAL 8" AS N 1,820,044.58, E 2,823,297.81 AND NGS "SIGNAL 4" AS N 1,822,564.20, E 2,828,161.16.
- VERTICAL CONTROL IS IN US SURVEY FEET AND IS REFERENCED TO MEAN LOWER LOW WATER DATUM (MLLW=0.0) HOLDING NOAA/NOS TIDAL BENCH MARK "1439 A 1978" AS 25.82'. MLLW DATUM IS BASED ON NOAA/NOS TIDAL BENCH MARK SHEET "ALASKA 945 1439, PETERSBURG, WRANGELL NARROWS, PUBLICATION DATE: 12/02/1991."
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- THIS PLAT INDICATES GENERAL CONDITIONS AT THE TIME OF SURVEY.

VOLUME COMPUTATIONS

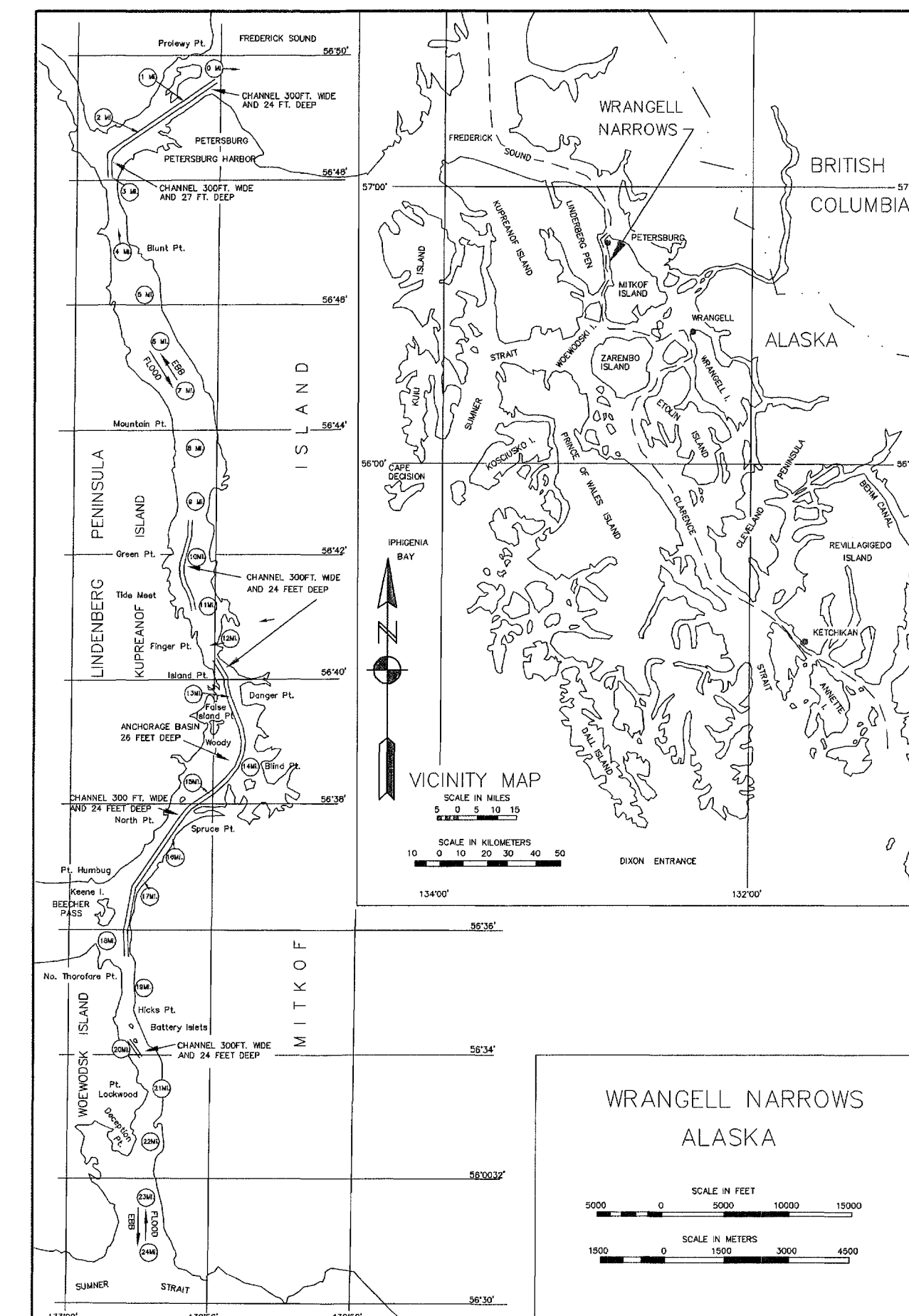
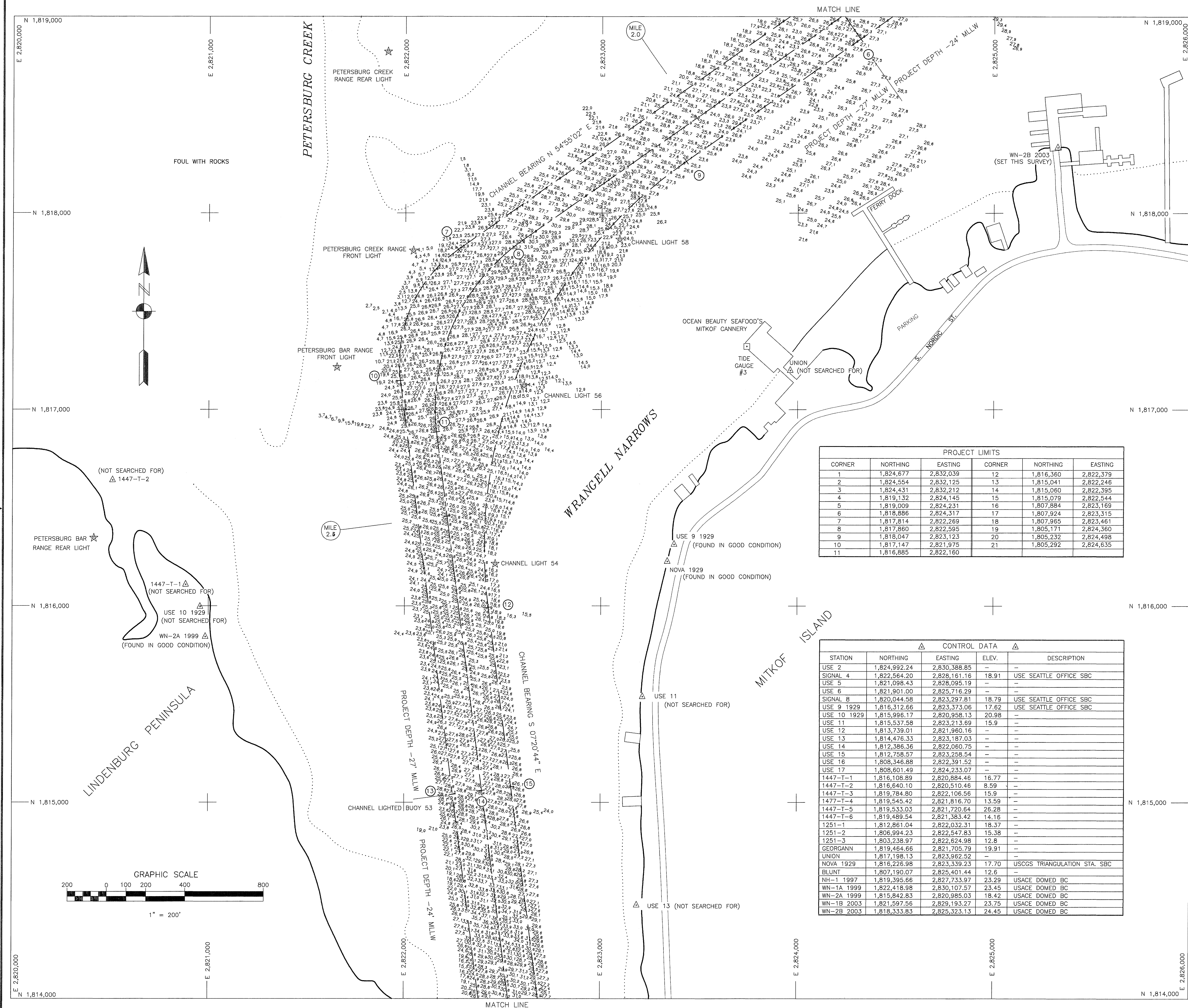
Project Depth -24' MLLW		CUBIC YARDS
MINIMUM PAY LINE (-24' MLLW)		6,018
BETWEEN MINIMUM PAY LINE AND MAXIMUM PAY LINE (-26' MLLW)		9,616
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, HV)		18,141
TOTAL		23,775
Project Depth -27' MLLW		CUBIC YARDS
MINIMUM PAY LINE (-27' MLLW)		37,128
BETWEEN MINIMUM PAY LINE AND MAXIMUM PAY LINE (-29' MLLW)		72,064
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, HV)		5,795
TOTAL		114,987

NAVIGATION AIDS

USCG No.	DESCRIPTION	NORTHING	EASTING
23135	CHANNEL LIGHTED BUOY 53	1,814,989	2,822,247
23140	PETERSBURG CREEK RANGE FRONT LIGHT	1,817,808.7	2,822,040.4
23145	PETERSBURG CREEK RANGE REAR LIGHT	1,818,821.2	2,821,909.2
23150	CHANNEL LIGHT 54	1,816,214.8	2,822,461.2
23155	CHANNEL LIGHT 56	1,817,120.8	2,822,606.3
23160	CHANNEL LIGHT 58	1,817,865.4	2,823,091.5
23165	PETERSBURG BAR RANGE FRONT LIGHT	1,817,215.0	2,821,652.3
23170	PETERSBURG BAR RANGE REAR LIGHT	1,816,345.7	2,820,415.1
23185	CHANNEL LIGHTED BUOY 59	1,820,402	2,826,074
23195	CHANNEL LIGHTED BUOY 60	1,821,311	2,827,912
23200	CHANNEL DAYBEACON 61	1,824,276.8	2,830,409.0
23205	CHANNEL LIGHTED BUOY 62	1,824,713	2,832,699

CONTRACT NO. DACW85-01-D-0001

CONTRACTOR TERRA SURVEYS, LLC
CITY PALMER STATE ALASKAALASKA DISTRICT
CORPS OF ENGINEERS
ANCHORAGE, ALASKASURVEYED: KDW/WKR
DRAWN: LES
CHECKED: KDW
SUBMITTED: 15 August 2003
RECOMMENDED: Andrew H. Buse
APPROVED: [Signature]
DATE: 15 August 2003
PROJECT MANAGER: [Signature]WRANGELL NARROWS, ALASKA
MILE 0.0 TO MILE 3.0
PROJECT CONDITION SURVEY
MARCH 18-25, 2003SURVEY NO. 2038-03
SCALE: 1" = 200'
SHEET 2 OF 4



NOTES

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- THIS PLAT INDICATES GENERAL CONDITIONS AT THE TIME OF SURVEY.

VOLUME COMPUTATIONS

Project Depth -24' MLLW		CUBIC YARDS
MINIMUM PAY LINE (-24' MLLW)		6,018
BETWEEN MINIMUM PAY LINE AND MAXIMUM PAY LINE (-26' MLLW)		9,616
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, H:V)		2,507
TOTAL		18,141
Project Depth -27' MLLW		CUBIC YARDS
MINIMUM PAY LINE (-27' MLLW)		37,128
BETWEEN MINIMUM PAY LINE AND MAXIMUM PAY LINE (-29' MLLW)		72,064
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, H:V)		5,795
TOTAL		114,988

NAVIGATION AIDS

USCG No.	DESCRIPTION	NORTHING	EASTING
23135	PETERSBURG LIGHTED BUOY 53	1,814,989	2,822,247
23140	PETERSBURG CREEK RANGE FRONT LIGHT	1,817,808.7	2,822,040.4
23145	PETERSBURG CREEK RANGE REAR LIGHT	1,818,821.2	2,821,909.2
23150	CHANNEL LIGHT 54	1,816,214.8	2,822,461.2
23155	CHANNEL LIGHT 56	1,817,120.8	2,822,606.3
23160	CHANNEL LIGHT 58	1,817,865.4	2,823,091.5
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23170	PETERSBURG BAR RANGE REAR LIGHT	1,816,345.7	2,820,415.1
23185	CHANNEL LIGHTED BUOY 59	1,820,402	2,826,074
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23205	CHANNEL LIGHTED BUOY 62	1,824,713	2,832,699

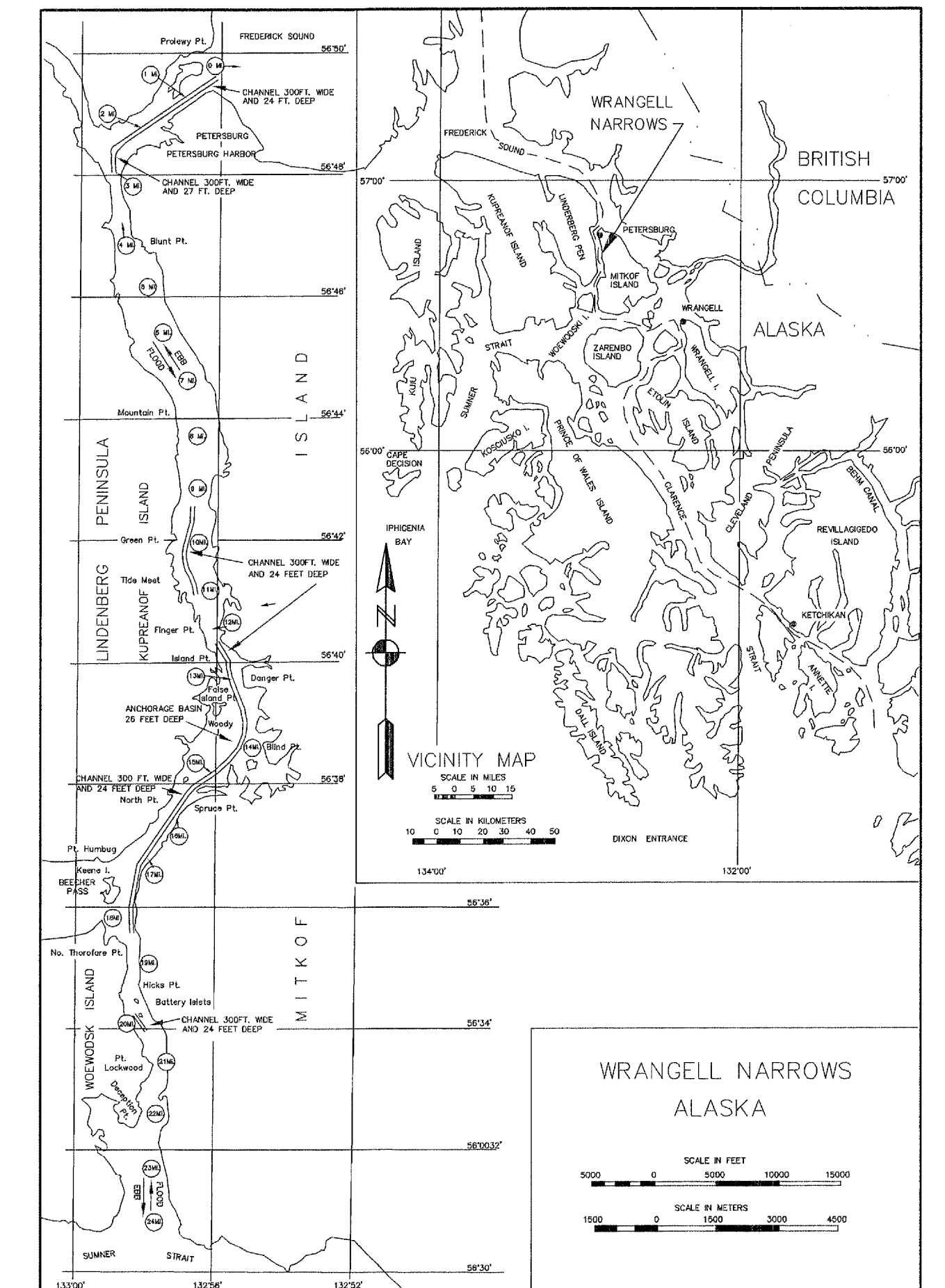
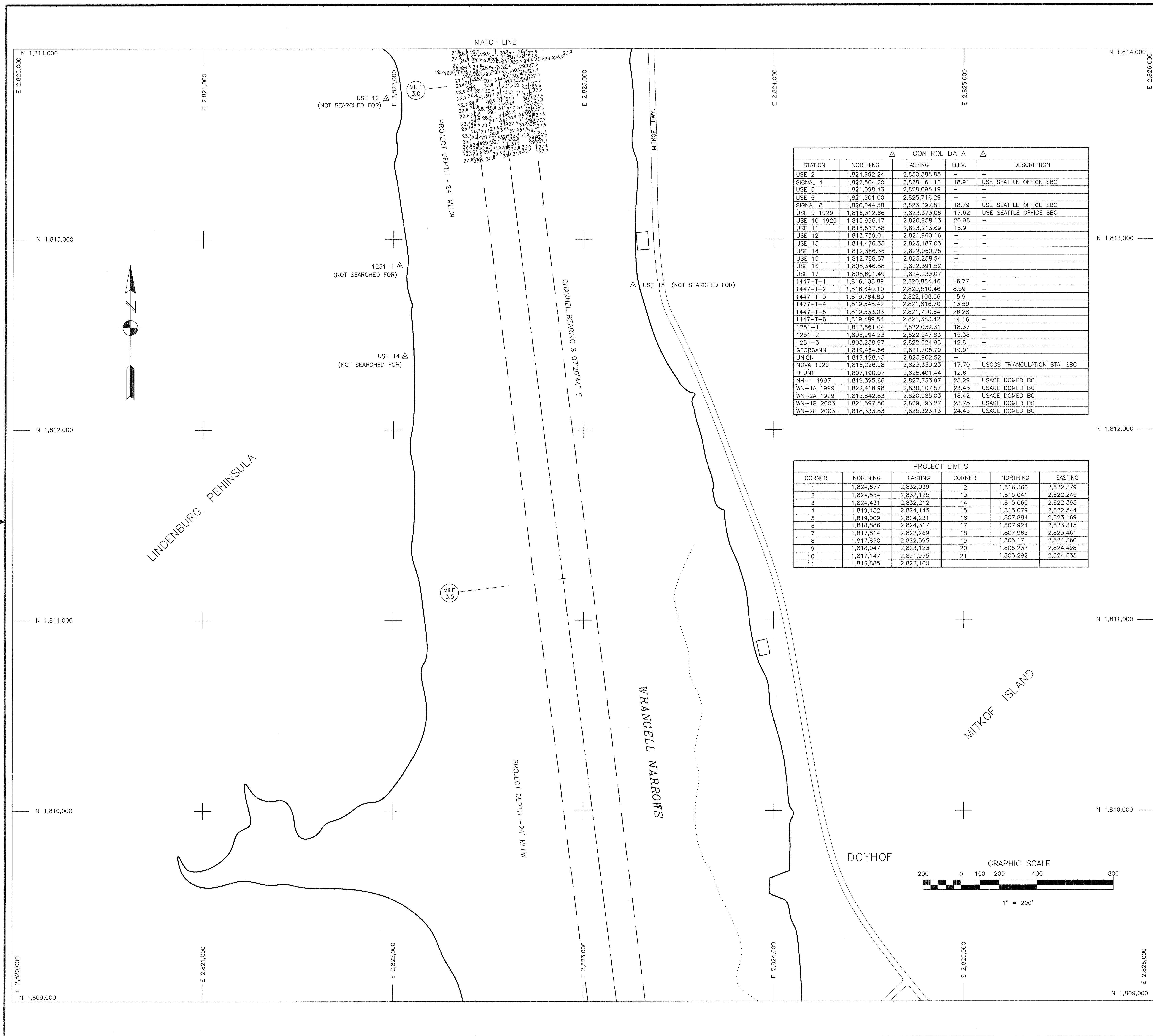
CONTRACT NO. DACW85-01-D-0001

CONTRACTOR TERRA SURVEYS, LLC
CITY PALMER

STATE ALASKA

ALASKA DISTRICT
CORPS OF ENGINEERS
ANCHORAGE, ALASKA

SURVEYED:	KDW/WKR	WRANGELL NARROWS, ALASKA MILE 0.0 TO MILE 3.0 PROJECT CONDITION SURVEY MARCH 18-25, 2003	DATE: 15 August 2003
DRAWN:	LES		
CHECKED:	KDW		
SUBMITTED:	APPROVED:		
RECOMMENDED:	DATE:		
SURVEY NO.	2038-03	SCALE:	1" = 200'
SHEET 3 OF 4			



NOTES

- HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD27, IN US SURVEY FEET HOLDING NGS "SIGNAL 8" AS N 1,820,044.58, E 2,823,297.81 AND NGS "SIGNAL 4" AS N 1,822,564.20, E 2,828,161.16.
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- THIS PLAT INDICATES GENERAL CONDITIONS AT THE TIME OF SURVEY.

VOLUME COMPUTATIONS

Project Depth -24' MLLW		CUBIC YARDS
MINIMUM PAY LINE (-24' MLLW)		6,018
BETWEEN MINIMUM PAY LINE and MAXIMUM PAY LINE (-26' MLLW)		9,616
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, H:V)		2,507
TOTAL		18,141
Project Depth -27' MLLW		CUBIC YARDS
MINIMUM PAY LINE (-27' MLLW)		37,128
BETWEEN MINIMUM PAY LINE and MAXIMUM PAY LINE (-29' MLLW)		72,064
VOLUME AVAILABLE ALONG SIDESLOPES (3:1, H:V)		5,795
TOTAL		114,988

NAVIGATION AIDS

USCG No.	DESCRIPTION	NORTHING	EASTING
23135	CHANNEL LIGHTED BUOY 53	1,814,989	2,822,247
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