



- NOTES**
- HORIZONTAL CONTROL IS ALASKA STATE PLANE ZONE 1, IN FEET, NORTH AMERICAN DATUM OF 1983, HOLDING USAGE SBC "DP-1, 1976" AS N 1,286,917.71, E 3,107,731.75 AND USACE BC "TB-1, 1998" AS N 1,286,078.25, E 3,107,064.50.
  - VERTICAL CONTROL IS IN FEET, BASED ON MEAN LOWER LOW WATER (MLLW = 0.0'), HOLDING NOS TIDAL BENCH MARK "BM 39, 1974" AT 32.46' AND USACE'S "NO. 30, 1922" AT 26.53', FROM NOS TIDAL BENCHMARK LIST "ALASKA 945 0460", DATED 10/30/1984.
  - THE HORIZONTAL AND VERTICAL CONTROL WERE SURVEYED JUNE 5-7, 2001 USING CONVENTIONAL TRAVERSE METHODS AND DIFFERENTIAL LEVELS. TOPOGRAPHY WAS SURVEYED USING CONVENTIONAL TECHNIQUES ON THE SAME DATES.
  - SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
  - THE EXISTING PROJECT PROVIDES FOR AN 11.35 ACRE HARBOR, DREDGED TO A DEPTH OF -10' MLLW AND PROTECTED BY A 940', CONCRETE CAPPED, STONE BREAKWATER.
  - BATHYMETRY WAS COLLECTED APRIL 14, 2001. SOUNDINGS WERE COLLECTED USING A "RESON 8124 SEABAT" MULTIBEAM SOUNDER (120' SWATH, 80 BEAM FLAT ARRAY TRANSDUCER). SOUND VELOCITY WAS PROFILED AND COLLECTED USING AN "APPLIED MICROSYSTEMS - SVP PLUS" PROFILER. POSITIONING AND VESSEL ATTITUDE WERE MEASURED USING A "SEATEX - SEAPATH 200 RTM" SYSTEM COUPLED WITH A "SEATEX - MRU-5" MOTION REFERENCE UNIT. RTK CORRECTIONS WERE BROADCAST FROM A LOCAL BASE STATION SET AT "TB1-1998". DATA WAS COLLECTED AND FIELD PROCESSED USING "RESON 6042" INTEGRATED SOFTWARE. WATER LEVEL WAS MEASURED USING A "VYNER LP1 TELEMETRY TIDE GAUGE" COUPLED WITH AN "ENDECO TYPE 1029" WATER LEVEL RECORDER. FINAL DATA PROCESSING WAS PERFORMED USING "GARIS HIPS" HDGS SOFTWARE AND TERRA SURVEYS, LLC PROPRIETARY SOFTWARE.
  - SURVEY CONTROL, PROJECT LIMITS AND NAVIGATIONAL AIDS COORDINATES WERE CONVERTED FROM NAD 27 IN US FEET TO NAD 83 IN US FEET USING CORPSONS VERSION 5.11.08.
  - THIS SURVEY INDICATES GENERAL CONDITIONS AT THE TIME OF SURVEY.

**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 PLAN REPRESENTS A HYDROGRAPHIC SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION. THE ELEVATIONS SHOWN HEREON ACCURATELY DEPICT THE DEPTHS AS SURVEYED APRIL 14, 2001.

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

DATE: 8/14/01

**CONTROL DATA**

STATION	NORTHING	EASTING	ELEV.	DESCRIPTION
DP-1, 1976	1,286,057.25	3,107,299.01	21.30	USACE SBC
DP-2, 1976	1,287,204.51	3,107,368.50	20.98	USACE SBC
DP-3, 1976	1,286,917.71	3,107,731.75	21.80	USACE SBC
DP-4, 1976	1,286,139.78	3,107,896.68	22.26	USACE
TB-1, 1998	1,286,078.25	3,107,064.50	21.88	FND 3 1/4" DOMED BC
TB-3, 2001	1,286,145.62	3,107,890.43	22.70	SET 3 1/4" DOMED BC
TB-4, 2001	1,287,136.38	3,107,461.90	21.75	SET 3 1/4" DOMED BC
NO 30 1922	---	---	26.53	FND USCGS BENCH MARK
BM 39 1974	---	---	32.46	FND NOS BENCH MARK

**PROJECT LIMITS**

CORNER	NORTHING	EASTING	CORNER	NORTHING	EASTING
1	1,286,082	3,107,154	7	1,286,337	3,107,940
2	1,286,835	3,107,315	8	1,286,228	3,107,914
3	1,287,007	3,107,209	9	1,286,118	3,107,441
4	1,287,153	3,107,331	10	1,286,157	3,107,273
5	1,286,810	3,107,755	11	1,286,139	3,107,243
6	1,286,358	3,107,853	12	1,286,063	3,107,216

**NAVIGATION AIDS**

DESCRIPTION	USCG NO.	NORTHING	EASTING
THOMAS BASIN ENTRANCE LIGHT 2 FL. RED	22165	1,286,053	3,107,298
CITY DOCK LIGHT (NEW AID)	GREEN	1,286,022	3,107,112

**VOLUME COMPUTATIONS**

Project Depth -10' MLLW

MINIMUM PAY LINE (-10' MLLW)	3,397	(cubic yards)
BETWEEN MINIMUM PAY LINE AND MAXIMUM PAY LINE (-11' MLLW)	914	(cubic yards)
SIDESLOPES (3:1)	5,568	(cubic yards)
<b>TOTAL</b>	<b>9,879</b>	<b>(cubic yards)</b>

CONTRACT NO. DACW85-98-D-0004

CONTRACTOR: TERRA SURVEYS, LLC  
CITY: PALMER STATE: ALASKA

ALASKA DISTRICT  
CORPS OF ENGINEERS  
ANCHORAGE, ALASKA

**KETCHIKAN, ALASKA  
THOMAS BASIN  
PROJECT CONDITION SURVEY  
APRIL 14, 2001**

SURVEYED: KDW/DJB  
DRAWN: DJB  
CHECKED: TSN  
SUBMITTED: [Signature]

RECOMMENDED: [Signature] APPROVED: [Signature] DATE: 30 August 01

SURVEY NO. 1909-01 SCALE: 1" = 50'  
SHEET 1 OF 1