

ORDER FOR SUPPLIES OR SERVICES

1. CONTRACT/PURCH. ORDER/ AGREEMENT NO. W911KB-04-D-0006	2. DELIVERY ORDER/ CALL NO. 0007	3. DATE OF ORDER/CALL (YYYYMMDD) 2005 Feb 22	4. REQ./ PURCH. REQUEST NO. See Schedule	5. PRIORITY
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6. ISSUED BY U.S. ARMY ENGINEER DISTRICT, AK CEPOA CT (W911KB) P. O. BOX 6898 ELMENDORF AFB AK 99506-6898	CODE W911KB	7. ADMINISTERED BY (if other than 6) SEE ITEM 6	CODE	8. DELIVERY FOB <input checked="" type="checkbox"/> DESTINATION <input type="checkbox"/> OTHER (See Schedule if other)
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9. CONTRACTOR TERRA SURVEYS NAME TOM NEWMAN AND P O BOX 1549 ADDRESS PALMER AK 99645 1549	CODE 05US9	FACILITY	10. DELIVER TO FOB POINT BY (Date) (YYYYMMDD) SEE SCHEDULE	11. MARK IF BUSINESS IS <input type="checkbox"/> SMALL <input checked="" type="checkbox"/> SMALL DISADVANTAGED <input type="checkbox"/> WOMEN-OWNED
			12. DISCOUNT TERMS	13. MAIL INVOICES TO THE ADDRESS IN BLOCK See Item 15

14. SHIP TO SEE SCHEDULE	CODE	15. PAYMENT WILL BE MADE BY U.S. ARMY ENGINEER DISTRICT, ALASKA C/O USACE FINANCE CENTER 5720 INTEGRITY DRIVE MILLINGTON TN 38054-5005	CODE W911KB	MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.
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16. TYPE OF ORDER	DELIVERY/ CALL	<input checked="" type="checkbox"/>	This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.
	PURCHASE	<input type="checkbox"/>	Reference your quote dated Furnish the following on terms specified herein. REF:

ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

NAME OF CONTRACTOR	SIGNATURE	TYPED NAME AND TITLE	DATE SIGNED (YYYYMMDD)
<input type="checkbox"/> If this box is marked, supplier must sign Acceptance and return the following number of copies:			

17. ACCOUNTING AND APPROPRIATION DATA/ LOCAL USE
See Schedule

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/ SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
SEE SCHEDULE					

* If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.	24. UNITED STATES OF AMERICA TEL: 907-753-2553 EMAIL: sandra.j.davidson@poa02.usace.army.mil BY: SANDRA J DAVIDSON	25. TOTAL \$65,713.00	26. DIFFERENCES
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27a. QUANTITY IN COLUMN 20 HAS BEEN
 INSPECTED RECEIVED ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	c. DATE (YYYYMMDD)	d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE
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e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE	28. SHIP NO.	29. DO VOUCHER NO.	30. INITIALS
f. TELEPHONE NUMBER	g. E-MAIL ADDRESS	<input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	32. PAID BY

36. I certify this account is correct and proper for payment.

a. DATE (YYYYMMDD)	b. SIGNATURE AND TITLE OF CERTIFYING OFFICER
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31. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	33. AMOUNT VERIFIED CORRECT FOR
	34. CHECK NUMBER
	35. BILL OF LADING NO.

37. RECEIVED AT	38. RECEIVED BY	39. DATE RECEIVED (YYYYMMDD)	40. TOTAL CONTAINERS	41. S/R ACCOUNT NO.	42. S/R VOUCHER NO.
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Section B - Supplies or Services and Prices

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		39,292	Lump Sum	\$1.00	\$39,292.00 NTE

SAINT PAUL HARBOR
FFP

The AE shall provide survey for the aboe project in strict accordance with the attached specifications dated 28 January 2005.

PURCHASE REQUEST NUMBER: WC1JUW-5046-9228

NET AMT	\$39,292.00
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ACRN AA Funded Amount

\$39,292.00

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		26,421	Lump Sum	\$1.00	\$26,421.00 NTE

Saint Paul Salt Lagoon Channel
FFP

The AE shall provide survey for the aboe project in strict accordance with the attached specifications dated 29 December 2004.

THE TOTAL CUMULATIVE CONTRACT AMOUNT INCLUDING THIS TASK ORDER IS \$641,852.00.

The Point of Contact for this Task Order is Christine Dale, 753-5618.

PURCHASE REQUEST NUMBER: WC1JUW-5046-9238

NET AMT	\$26,421.00
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ACRN AB Funded Amount

\$26,421.00

FOB: Destination

Section C - Descriptions and Specifications

28 January 2005

SAINT PAUL HARBOR
CONDITION SURVEY
 CONTRACT No. W911KB-04-D-0006

SPECIFICATIONS

NONTECHNICAL CONTRACT PROVISIONS

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SPECIFICATIONS

PART I

STATEMENT OF WORK

SW-1 DESCRIPTION OF WORK.

a. Work to be done. The Contractor shall furnish all personnel, plant, equipment, transportation, and materials necessary to perform and deliver the specified surveys, including original field data, books, drawings, charts and magnetic media including both raw and adjusted data, in accordance with the attached Conditions, Provisions, and Specifications, including the Exhibits made part hereof by reference thereto.

b. Place of Delivery. Supplies furnished under this contract shall be delivered F.O.B. to:

U.S. ARMY ENGINEER DISTRICT, ALASKA
ATTN: CEPOA-CO-O (E. A. CHURCHILL)
P.O. BOX 6898
ANCHORAGE, ALASKA 99506-6898

and shall be accompanied by a letter or shipping form, in duplicate, listing the materials being transmitted, and being properly indexed, dated and signed.

c. Site of Installation. Not Applicable.

GENERAL CONDITIONS

PART II

GC-1. SCOPE OF WORK.

a. The survey to be accomplished under this contract will be used for the operation and maintenance of the boat harbor and navigation channels, including computation of dredge material, associated planning and budgetary requirements and construction of navigational charts.

b. Location of project.

- Saint Paul, Alaska.

Special attention of the Contractor is directed to the fact that the accuracy, thoroughness, and scheduled progress of his work are essential to the purpose for which intended. He must be cognizant of the difficulties involved and of the contingencies which may arise, and must make certain that his personnel, plant, equipment, transportation facilities, and supply of materials are adequate at all times to insure complete compliance with all provisions of these specifications.

c. Completion of Work. Completion of work shall include satisfactory performance of all specified surveys and delivery of complete and acceptable survey drawings and data for the project.

d. Deliveries. All costs of deliveries shall be borne by the Contractor. Each delivery shall be addressed to

U.S. ARMY ENGINEER DISTRICT, ALASKA
ATTN: CEPOA-CO-O
(E. A. CHURCHILL)
P.O. BOX 6898
Elmendorf AFB, Alaska 99506-6898

and shall be accompanied by a letter or shipping form, in duplicate, listing the materials being transmitted, and being properly numbered, dated, and signed.

GC-2. SITE INVESTIGATION AND REPRESENTATIONS. The Contractor assumes responsibility for all investigations as to the nature and location of the work, the general and local conditions, particularly those bearing upon transportation and the availability of roads and airports, the uncertainties of weather and flood stages, the topography and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the work, and all other matters upon which information is reasonably obtainable and which can in any way affect the work or the cost thereof under this contract. Any failure by the Contractor to acquaint himself with all the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Government assumes no responsibility for any understanding or representations made by any of its officers or agents during or prior to the execution of this contract, unless (1) such understanding or representations are expressly stated in the contract and (2) the contract expressly provides that the responsibility therefor is assumed by the Government. Representations made but not so expressly stated and for which liability is not expressly assumed by the Government in the contract shall be deemed only for the information of the Contractor.

GC-3. PROTECTION OF MATERIALS AND WORK. The contractor shall at all times prior to delivery take care of, protect, and preserve all materials, supplies, equipment of every description, and all work performed. All reasonable requests of the Contracting Officer to enclose or specially protect such property shall be complied with. If required, as determined by the Contracting Officer, materials, equipment, supplies, and work performed may be protected by the Government and the cost thereof may be charged to the Contractor or deducted from any payment due to him.

SPECIAL CONDITIONS

PART III

SC-1. COMMENCEMENT AND DELIVERY.

a. General. The Contractor is required to commence work under this contract in accordance with the schedule under paragraph SC-b.(1) below after receipt of the Notice to Proceed, and to work with faithfulness and diligence, and to complete and deliver work in accordance with the schedule under paragraph SC-b.(2), except that an equitable adjustment of time will be made for delays beyond his control and not due to his fault or negligence.

b. Schedule.

(1) Surveys. After receipt of the Executed Delivery Order (Notice to Proceed), the surveyor shall proceed to St. Paul Island as soon as it is immediately practicable. The contractor shall avail himself of all suitable conditions to complete the work before conditions on site are prohibitive. (Suitable conditions are defined under paragraph TP-6.) A preliminary copy in AutoCAD Dwf format and an edited point file shall be submitted within (15) working days of the completion of the field work.

(2) Completion Dates. The final survey package shall be completed and delivered on or before the **31st of March 2005.**

SC-2. INSPECTION

a. Inspection During Progress. During the progress of work, any inspection of the field survey operations, office computations, or drafting, etc., by the Contracting Officer or his representative(s) shall be solely at the option of Contracting Officer or her representative(s).

b. Contractor's Responsibility for Checking Work. It is understood that the Contractor realizes the work under this contract must be accomplished with thoroughness and skill, and that he is cognizant of the serious difficulties which could result from defective work. Therefore, it shall be his responsibility to thoroughly check each phase of the work and guarantee its accuracy.

c. Inspection of Delivered Work. Within five (5) working days after delivery of work in any installment, the Contracting Officer will inspect that work and notify the Contractor of the results of such inspection.

SC-3. GOVERNMENT FURNISHED PROPERTY. At the time of issue of the Notice to Proceed, the Government will furnish to the Contractor the data and materials as follows:

a. Drawings. One paper copy of the project area with the survey limits depicted.

b. Specifications. One (1) set of Specifications.

c. Magnetic Drawing Files. One or more AutoCAD drawing files will be provided to the contractor, in the version requested, clearly depicting the area to be surveyed.

TECHNICAL PROVISIONS

PART IV

TP-1. PERSONNEL\EQUIPMENT\SUPPLIES.

a. Personnel and Qualifications. The Contractor shall have a minimum of the following: One (1) land surveyor licensed by the State of Alaska, one (1) current American Congress for Surveying and Mapping (ACSM) certified Hydrographic Surveyor with at least five (5) years of surveying experience that includes three (3) years of hydrographic surveying experience, and three (3) staff surveyors.

b. Equipment. The Contractor must provide documentation to the Contracting Officer, indicating that modern electronic horizontal positioning and depth finding equipment will be used on the work to be performed. Typical information that will be required, as a minimum, includes the name, model year of manufacture, and the manufacturer's stated accuracy and capability for usage of the equipment.

c. Supplies. The Contractor shall provide all transportation, machinery, supplies, tools and parts necessary to complete the requirements of this contract.

TP-2. ACCURACY. All surveys including both Topographic and Hydrographic shall conform to standard third order traverse requirements as specified in EM 1110-1-1005, Topographic Surveying, 31 Aug 94. Specifically, the following accuracies must be attained:

- a. Azimuth closure must not exceed 5 seconds per angle in traverse.
- b. Distance closure error, after azimuth adjustment, must not exceed 1 part in 5,000 parts.
- c. Traverse adjustment shall be by the Compass Rule.
- d. Levels shall be to 3rd order standards.
- e. Vertical Control shall be Mean Lower Low Water (MLLW=0.0') datum.
- f. Horizontal Control shall be Alaska State Plane coordinate system, in the applicable zone.

TP-3. TOPOGRAPHY. Topography shall be obtained of ground features and structures (other than breakwaters as stated in TP-3a) immediately adjoining and within the survey limits that are not shown on the Government provided drawings or have been modified after the drawing was constructed. Such features and structures shall be included on the final drawings. All topography elevations shall be reduced to the nearest one tenth (0.1) of a foot.

a. Breakwaters. Both breakwaters, the main and detached, shall be profiled on 50 ft. stations down the BW centerline and cross-sections shall be obtained at each 100 ft. station and at all major breaks. Cross-sections shall be obtained down the breakwater side slopes to approximately the +5.0 MLLW elevation. Data shall be collected on the side slopes so as to overlap with the hydrographic soundings. Damaged areas found will require additional cross-sections and will be identified in the field notes and on the final drawings. Ice and snow on breakwater rocks may preclude the surveyor from collecting topo using conventional means. (See Suitable Conditions, Section TP-7.) An approved Impulse Laser device may be used to collect data on the breakwater slopes.

b. Navigational Aids. All navigational aids, fixed and floating, that would fall on the final drawings shall be located and described. Accuracy of 1 ft. in 2,000 ft. for fixed aids and 1 ft. in 500 ft. for floating aids is

satisfactory. The position coordinates for fixed aids will be at the light globe or range mark and for floating aids will be the adjusted mean position of the buoy anchor. When the location of the buoy anchor is not feasible then the adjusted coordinates between the buoy Flood tide position and the buoy Ebb tide position is satisfactory. The map position of each navigational aid shall be located on the final drawings by its USGS name and designated symbol. The adjusted coordinates of all navigational aids shall be recorded in the drawing Note column.

TP-4. HYDROGRAPHIC SOUNDINGS.

a. Soundings. Soundings shall be conducted on a 25 ft. grid in boat harbors including the entrance channels and on a 50 ft. grid in all navigation channels, unless directed otherwise. Soundings shall be obtained at breakwater toes, up the breakwater and/or basin slopes to the +5.0 MLLW elevation contour or extend 50 feet beyond project limits. Soundings obtained in navigation channels shall extend a minimum of 50 feet beyond the channel limits or to the +10.0 MLLW elevation. Soundings obtained in the harbor entrance channel shall extend seaward at least 10 feet in depth lower than the authorized project depth. All soundings shall be reduced to the nearest one tenth (0.1) of a foot elevation and all soundings above 0.0' MLLW elevation shall be preceded with a plus sign, e.g., +2.0 . One final **COGO point file** shall be provided that is sorted, tide corrected, and reduced in size so that it is under (1) megabyte, while providing maximum coverage along the lines of survey. This work shall conform to the Corps of Engineers' standards as set forth in EM 1110-2-1003, dated 1 Jan 02, to assure the accuracy of the surveys.

b. Bar Check. (Alternative 1.) The Contractor shall perform bar checks immediately before and after each sounding operation and record such measurements on the fathometer chart or other electronic media. Bar checks shall be taken at (5) foot intervals with a minimum of (3) depths recorded per bar check. A bar check at or near the bottom is considered critical to confirming actual bottom elevations. Such readings shall be used to adjust, correct, or check the depths as recorded by the fathometer.

c. Tide Readings. Tide readings recorded for sounding operations shall be real time, continuous, and recorded at each 0.1 tenth of a foot elevation change by a Crew member or a Government approved electronic tide recording system. The real time kinematic (RTK) operating mode GPS may be used in conjunction with actual tide readings to locate the position of the survey vessel vertically (and horizontally) while surveying operations are conducted.

d. Velocity Meter Readings. (Alternative 2.) An approved, calibrated water velocity measuring device shall be used to record the speed of sound through the water column before and after the sounding operation. This information will be recorded graphically and will be used in lieu of the bar check when a multi-beam transducer system is employed to gather data.

e. Squat and Settlement Calibration Test. Assuming that the GPS antenna height and the transducer elevation have been resolved to a fixed surface, so that the transducer-antenna elevation is known, no squat test will need to be performed while collecting data in the RTK DGPS mode. If however, the RTK mode is not employed, a vessel squat test shall be performed to determine the relationship between the boat speed and the transducer's elevation.

TP-5. MATERIAL COMPUTATIONS. The Contractor shall provide quantity computations of all earthen materials found in each project according to the following criteria: (1) above the specified project depth and within the project limits excluding side slopes, (2) material found between project depth and one foot below project depth, and (3) material found on side slopes. The three materials ((1), (2) and (3)) identified above shall be computed and recorded as three separate items in the volume computation table on the final drawings. (See TP-10 for volume computations model depicting the three materials.) Material quantities shall be determined by the **Average End Area Method** or other approved method and shall be stated in Cubic Yards. A plan view drawing showing the alignment and where the sections were taken is required if the Average End Area method is used. All cross sections shall be clearly plotted at an appropriate scale.

TP-6. GEODETIC AND VERTICAL CONTROL MONUMENTS. All monuments searched for shall be documented depending on circumstance as found, not found, or verified as disturbed or destroyed or found in good condition. Both coordinate and vertical data shall be expressed to the nearest one hundredth of a foot.

a. Temporary Vertical Control. All Temporary Vertical Control points, marks, Tide Gauge(s), or Water Surface readings at each project shall be level looped to primary Vertical Control Monuments according to accuracy requirements defined in TP-2.

TP-7. SUITABLE CONDITIONS.

a. Hydrographic soundings. Suitable conditions for this delivery order are defined as when the water surface within the survey project has seas or chop not greater than a **one foot** vertical distance measured from the wave peak to the wave trough. Floating ice may be encountered in the project area, but should not prevent the acquisition of survey data. The vessel operator must be relied upon for the safety of the vessel and those onboard.

b. Topographic data. Suitable conditions for the collection of topographic data exist when the breakwater rocks or structures surveyed are free from ice or snow. When conditions permit the surveyor to obtain solid footing, then and only then, is he permitted to collect data on the slopes of the breakwaters by physically occupying the rocks on the slopes. The surveyor shall indicate areas that are not accessible for data collection on the drawings or the notes.

TP-8. DRAWINGS.

a. Survey Drawings.

(1) The Contractor shall submit one (1) set of full size survey drawings of the project on mylar of four or five mil thickness and on magnetic media (CD) in .DWG and .DWF formats in the AutoCAD drafting system.

(2) The survey drawings shall include both the hydrographic and topographic data. Contour lines shall be shown at each 5 foot increment below and above 0.0 MLLW elevation. A **bold contour** line shall be shown at the project depth elevation, and at the MLLW line. Contour lines shall be smoothed to appear natural and omitted if data is obscured.

(3) The "Notes" section of the drawing shall contain, in addition to the horizontal control, vertical control, and units referenced to MLLW, a numbered item describing the survey equipment used to accomplish the work.

(4) A computation table shall be included on the drawing showing the total volumes calculated for side slopes, to project depth, and to max payline. (See sections TP-5 & TP-11.)

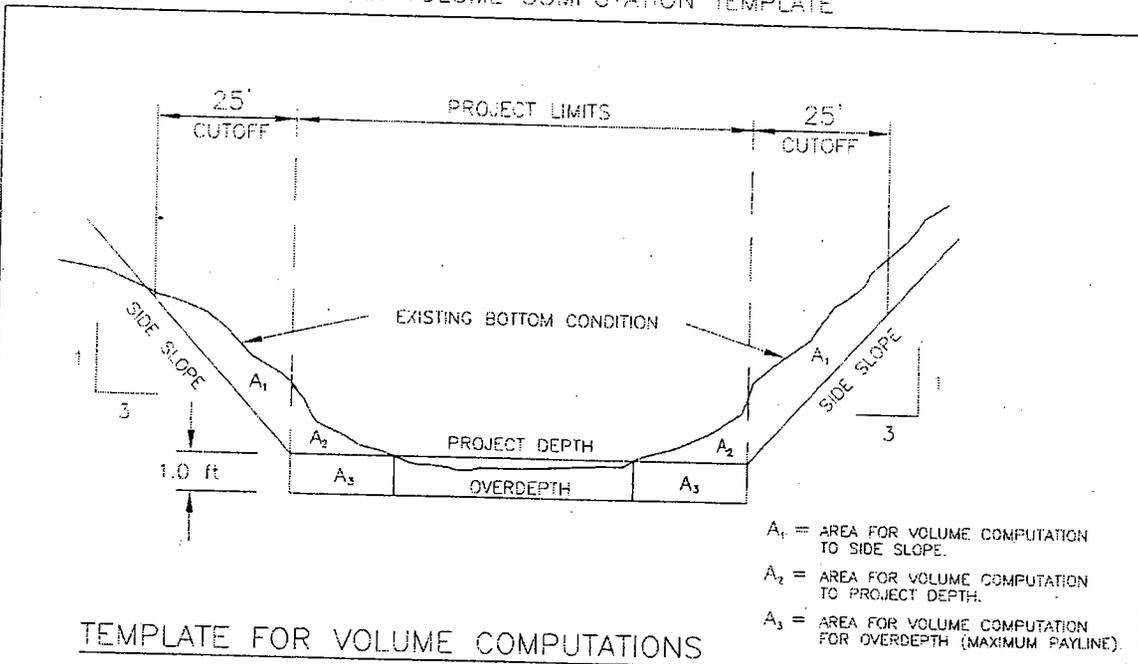
(5) A preliminary paper copy of the survey shall be submitted to the Contracting Officer for markup and will be ready for pickup within five working days.

(6) Each drawing shall contain all pertinent data, ink plotted, both legibly and accurately at reasonable spacing by machine. Each drawing shall be reviewed and corrected by the Contractor for items such as incomplete descriptions or symbols, sounding and contour errors, overwrites, improper font size, line width, map and data direction and other items that must be corrected to improve the drawing quality, accuracy and appearance. The final drawings submitted shall be signed, dated and stamped by the Contractor.

b. Blue-line Copies. The Contractor shall provide one (1) full size blue-line or blackline of each mylar drawing submitted.

TP-9. PROJECT SUMMARY. The Contractor shall provide a summary report of each Federal harbor or channel surveyed. Each report shall include the name of the Harbormaster, (if applicable), maximum and minimum vessel count including time of year for each (if available), condition of the harbor or channel, reported shoalings, navigation hazards, and vessel groundings. Also report new construction, including name of owners or company, that may be encroaching into Government dredging or project limits. Provide a photograph of any existing Corps of Engineers harbor signage.

TP-10. VOLUME COMPUTATION TEMPLATE



TEMPLATE FOR VOLUME COMPUTATIONS

HORIZONTAL SCALE:
VERTICAL SCALE:

Typical table of volume computations for Project Condition Surveys.

VOLUME COMPUTATIONS	
VOLUME AVAILABLE TO PROJECT DEPTH	_____ CU. YDS. ¹
VOLUME AVAILABLE BETWEEN PROJECT DEPTH AND ALLOWABLE OVERDEPTH	_____ CU. YDS. ²
VOLUME AVAILABLE ALONG THE SIDE SLOPES	_____ CU. YDS. ³
TOTAL	_____ CU. YDS.

FOOTNOTES:

- ¹Volume to Project Depth does not include side slopes.
- ²Volume to maximum payline is included only where material is above project depth.
- ³Quantity is computed on a 3:1 (h:v) slope not more than 25 outside the project limits.

29 December 2004

ST. PAUL HARBOR
SALT LAGOON CHANNEL
HYDROGRAPHIC/TOPOGRAPHIC SURVEY
CONTRACT No. W911KB-04-D-0007

SPECIFICATIONS

NONTECHNICAL CONTRACT PROVISIONS

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SPECIFICATIONS

PART I

STATEMENT OF WORK

SW-1 DESCRIPTION OF WORK.

a. Work to be done. The Contractor shall furnish all personnel, plant, equipment, transportation, and materials necessary to perform and deliver the specified surveys, including original field data, books, drawings, charts and magnetic media including both raw and adjusted data, in accordance with the attached Conditions, Provisions, and Specifications, including the Exhibits made part hereof by reference thereto.

b. Place of Delivery. Supplies furnished under this contract shall be delivered F.O.B. to:

U.S. ARMY ENGINEER DISTRICT, ALASKA
ATTN: CEPOA-CO-O (E. A. CHURCHILL)
P.O. BOX 6898
ANCHORAGE, ALASKA 99506-6898

and shall be accompanied by a letter or shipping form, in duplicate, listing the materials being transmitted, and being properly indexed, dated and signed.

c. Site of Installation. Not Applicable.

GENERAL CONDITIONS

PART II

GC-1. SCOPE OF WORK.

a. The survey to be accomplished under this contract will be used as a basis for evaluation of a partially dredged channel (summer of 2004) and possible redesign of the channel alignment for the remainder of the dredging to be completed summer of 2005. The channel is located between the existing St. Paul Harbor and the Salt Lagoon. The purpose of the proposed channel is to enhance tidal flushing in the Salt Lagoon for water quality improvement (an environmental mitigation measure associated with the harbor improvements project). The channel was dredged from Station 23+75 to 39+84.39 SLC during the summer of 2004. However, the remainder of the channel was not completed (Station 10+00 to 23+75).

b. Location of project.

- St. Paul Island, Alaska.

Special attention of the Contractor is directed to the fact that the accuracy, thoroughness, and scheduled progress of his work are essential to the purpose for which intended. He must be cognizant of the difficulties involved and of the contingencies which may arise, and must make certain that his personnel, plant, equipment, transportation facilities, and supply of materials are adequate at all times to insure complete compliance with all provisions of these specifications. The Contractor shall coordinate with the Harbormaster at St. Paul for restrictions, permissions, and safety considerations for working in and/or near the harbor at St. Paul. The harbor is actively used during the winter and spring months in support of crab and other fisheries. The Contractor shall also coordinate with the National Marine Fisheries Service (NMFS) and US Fish and Wildlife Service (USFWS) offices located on the Island for guidance and considerations for working in and/or near northern fur seal and other wildlife habitat. St. Paul Island is an important fur seal haul-out area, during typically the summer months. If seals are present in the harbor, appropriate measures shall be taken so as not to harass or interfere with them. The Contractor should also be aware that much of the surrounding land is owned by the Tanadgusix Corporation (TDX) and is not available for access or use without permission from the owner. Land based access to the site shall be limited to that shown on the drawings.

c. Completion of Work. Completion of work shall include satisfactory performance of all specified surveys and delivery of complete and acceptable survey drawings and data for each project.

d. Deliveries. All costs of deliveries shall be borne by the Contractor. Each delivery shall be addressed to U.S. ARMY ENGINEER DISTRICT, ALASKA, P.O. BOX 6898, Anchorage, Alaska 99506-6898, ATTN: CEPOA-CO-O (E. A. CHURCHILL), and shall be accompanied by a letter or shipping form, in duplicate, listing the materials being transmitted, and being properly numbered, dated, and signed.

GC-2. SITE INVESTIGATION AND REPRESENTATIONS. The Contractor assumes responsibility for all investigations as to the nature and location of the work, the general and local conditions, particularly those bearing upon transportation and the availability of roads and airports, the uncertainties of weather and flood stages, the topography and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the work, and all other matters upon which information is reasonably obtainable and which can in any way affect the work or the cost thereof under this contract. Any failure by the Contractor to acquaint himself with all the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Government assumes no responsibility for any understanding or representations made by any of its officers or agents during or prior to the execution of this contract, unless (1) such understanding or representations are expressly stated in the contract and (2) the contract expressly provides that the responsibility therefore is assumed by the Government. Representations made but not so expressly stated and for which liability is not expressly assumed by the Government in the contract shall be deemed only for the information of the Contractor.

GC-3. PROTECTION OF MATERIALS AND WORK. The contractor shall at all times prior to delivery take care of, protect, and preserve all materials, supplies, equipment of every description, and all work performed. All reasonable requests of the Contracting Officer to enclose or specially protect such property shall be complied with. If required, as determined by the Contracting Officer, materials, equipment, supplies, and work performed may be protected by the Government and the cost thereof may be charged to the Contractor or deducted from any payment due to him.

SPECIAL CONDITIONS

PART III

SC-1. COMMENCEMENT AND DELIVERY.

a. General. The Contractor is required to commence work under this contract in accordance with the schedule under paragraph SC-b.(1) below after receipt of the Notice to Proceed, and to work with faithfulness and diligence, and to complete and deliver work in accordance with the schedule under paragraph SC-b.(2), except that an equitable adjustment of time will be made for delays beyond his control and not due to his fault or negligence.

b. Schedule.

(2) Surveys. After receipt of the Executed Delivery Order (Notice to Proceed), the surveyor shall proceed to St. Paul Island as soon as it is immediately practicable. The contractor shall avail himself of all suitable conditions to complete the work before conditions on site are prohibitive. (Suitable conditions are defined under paragraph TP-6.) A preliminary copy in AutoCAD Dwf format and an edited point file shall be submitted within (15) working days of the completion of the field work.

(2) Completion Dates. The final survey package shall be completed and delivered on or before the **30th of April 2005.**

SC-2. INSPECTION

a. Inspection During Progress. During the progress of work, any inspection of the field survey operations, office computations, or drafting, etc., by the Contracting Officer or his representative(s) shall be solely at the option of Contracting Officer or her representative(s).

b. Contractor's Responsibility for Checking Work. It is understood that the Contractor realizes the work under this contract must be accomplished with thoroughness and skill, and that he is cognizant of the serious difficulties that could result from defective work. Therefore, it shall be his responsibility to thoroughly check each phase of the work and guarantee its accuracy.

c. Inspection of Delivered Work. Within five (5) working days after delivery of work in any installment, the Contracting Officer will inspect that work and notify the Contractor of the results of such inspection.

SC-3. GOVERNMENT FURNISHED PROPERTY. At the time of issue of the Notice to Proceed, the Government will furnish to the Contractor the data and materials as follows:

b. Drawings. One paper copy of the project area with the survey limits depicted.

b. Specifications. One (1) set of Specifications.

c. Magnetic Drawing Files. One or more AutoCAD drawing files will be provided to the contractor, in the version requested, clearly depicting the area to be surveyed.

d. Photographs.

TECHNICAL PROVISIONS

PART IV

TP-1. PERSONNEL\EQUIPMENT\SUPPLIES.

a. Personnel and Qualifications. The Contractor shall have a minimum of the following: One (1) land surveyor licensed by the State of Alaska, one (1) current American Congress for Surveying and Mapping (ACSM) certified Hydrographic Surveyor with at least five (5) years of surveying experience that includes three (3) years of hydrographic surveying experience, and three (3) staff surveyors.

b. Equipment. The Contractor must provide documentation to the Contracting Officer, indicating that modern electronic horizontal positioning and depth finding equipment will be used on the work to be performed. Typical information that will be required, as a minimum, includes the name, model year of manufacture, and the manufacturer's stated accuracy and capability for usage of the equipment. (See Section TP-5 for Survey Vessel Modification.)

c. Supplies. The Contractor shall provide all transportation, machinery, supplies, tools and parts necessary to complete the requirements of this contract.

TP-2. ACCURACY. All surveys including both Topographic and Hydrographic shall conform to standard third order traverse requirements as specified in Technical Manual TM 5-441, Feb. 70. Specifically, the following accuracies must be attained:

- a. Azimuth closure must not exceed 5 seconds per angle in traverse.
- b. Distance closure error, after azimuth adjustment, must not exceed 1 part in 5,000 parts.
- c. Traverse adjustment shall be by the Compass Rule.
- d. Levels shall be to 3rd order standards.
- e. Vertical Control shall be Mean Lower Low Water (MLLW=0.0') datum.
- f. Horizontal Control shall be Alaska State Plane coordinate system, in the applicable zone.

TP-3. TOPOGRAPHY. Topography shall be obtained of ground features and structures immediately adjoining and within the survey limits that are not shown on the Government provided drawings or have been modified after the drawing was constructed. Such features and structures shall be included on the final drawings. All topography elevations shall be reduced to the nearest one tenth (0.1) of a foot.

Salt Lagoon Channel (existing dredged channel and proposed remainder along centerline alignment). The existing dredged Salt Lagoon Channel and remainder of the proposed channel along its centerline alignment shall be profiled on 25 ft. stations perpendicular to the centerline and cross-sections shall be obtained at each 25 ft. station and at all major breaks. Damaged areas found will require additional cross-sections and will be identified in the field notes and on the final drawings. The topography and cross-sections shall include the existing sand flats in the existing channel area from high tide line to high tide line (bank to bank) and an area into the lagoon itself as shown on the drawings. This shall include the area within the "construction boundary" shown. The entire area shall be surveyed when water surface elevations due to tides and atmospheric conditions allow the most favorable

conditions for the appropriate methods for survey data collection selected by the Contractor. The entire area is very shallow at low tides and much of it may be accessible with land based survey methods. The area may also be accessible by boat at high tides, however access for marine based equipment may be very limited. The Contractor is warned that even at high tides, sufficient water depths for marine based operations may be very limited or available for only short periods of time. The area is generally not subject to severe wave action but tidal currents can be significant and the water surface elevation varies significantly with tide, atmospheric, and wave conditions.

TP-4. HYDROGRAPHIC SOUNDINGS – CROSS-SECTIONS.

a. Soundings. Soundings shall be conducted on a minimum of 25-foot spacing and shall overlap with the topographic data where applicable. Soundings shall be taken perpendicular to the main flow line of the channel. All soundings shall be reduced to the nearest one tenth (0.1) of a foot elevation and all soundings above 0.0 MLLW elevation shall be preceded with a plus sign, e.g., (+2.0). An edited and tide-corrected COGO point file, under 2 megabytes in size, shall be submitted with the deliverables. Cross-sections shall be obtained in the locations shown.

b. Bar Check. (Alternative 1.) The Contractor shall perform bar checks immediately before and after each sounding operation and record such measurements on the fathometer chart or other electronic media. Bar checks shall be taken at (5) foot intervals with a minimum of (3) depths recorded per bar check. A bar check at or near the bottom is considered critical to confirming actual bottom elevations. Such readings shall be used to adjust, correct, or check the depths as recorded by the fathometer.

c. Tide Readings. Tide readings recorded for sounding operations shall be real time, continuous, and recorded at each 0.1 tenth of a foot elevation change by a Crew member or a Government approved electronic tide recording system. The real time kinematic (RTK) operating mode GPS may be used in conjunction with actual tide readings to locate the position of the survey vessel vertically (and horizontally) while surveying operations are conducted.

d. Velocity Meter Readings. (Alternative 2.) An approved, calibrated water velocity measuring device shall be used to record the speed of sound through the water column before and after the sounding operation. This information will be recorded graphically and will be used in lieu of the bar check.

e. Squat and Settlement Calibration Test. Assuming that the GPS antenna height and the transducer elevation have been resolved to a fixed surface, so that the transducer-antenna elevation is known, no squat test will need to be performed while collecting data in the RTK DGPS mode. If however, the RTK mode is not employed, a vessel squat test shall be performed to determine the relationship between the boat speed and the transducer's elevation.

TP-5. GEODETIC AND VERTICAL CONTROL MONUMENTS. All monuments searched for shall be documented depending on circumstance as found, not found, or verified as disturbed or destroyed or found in good condition. Both coordinate and vertical data shall be expressed to the nearest one hundredth of a foot.

a. Temporary Vertical Control. All Temporary Vertical Control points, marks, Tide Gauge(s), or Water Surface readings at each project shall be level looped to primary Vertical Control Monuments according to accuracy requirements defined in TP-2.

TP-6. SUITABLE CONDITIONS. Suitable conditions for this delivery order are defined as when the water surface within the survey project has seas or chop not greater than a **two foot** vertical distance measured from the wave peak to the wave trough. Floating ice may be

encountered in the project area, but should not prevent the acquisition of survey data. The vessel operator must be relied upon for the safety of the vessel and those onboard.

TP-7. DRAWINGS.

b. Survey Drawings.

(1) The Contractor shall submit one (1) set of paper drawings as a preliminary after completion of the survey, or electronic copy in DWF format maybe supplied via email or by FTP. Full size final drawings on mylar of four or five mil thickness shall be submitted after the government's approval. Electronic versions of the drawings in AutoCAD, versions 2000 through 2004, (.DWG) and (.DWF) formats shall also be submitted with the final copies.

(3) The "Notes" section of the drawing shall contain, in addition to the horizontal control, vertical control, and units referenced to MLLW, a numbered item describing the survey equipment used to accomplish the work.

(3) Each drawing shall contain all pertinent data, ink plotted, both legibly and accurately at reasonable spacing by machine. Each drawing shall be reviewed and corrected by the Contractor for items such as incomplete descriptions or symbols, sounding and contour errors, overwrites, improper font size, line width, map and data direction and other items that must be corrected to improve the drawing quality, accuracy and appearance. The final drawings submitted shall be signed, dated and stamped by the Contractor.

b. Blueline Copies. The Contractor shall provide one (1) full size blueline or blackline copy of each mylar drawing submitted.

TP-8. PROJECT SUMMARY. The Contractor shall provide a summary report of the current survey to include the physical conditions encountered, problems and difficulties, and unique circumstances as well as discussing any damaged areas or apparent aberrations. Any significant information pertinent to the survey and the conditions encountered not found in the field book or the drawings themselves shall be included.

Section G - Contract Administration Data

ACCOUNTING AND APPROPRIATION DATA

AA: 96X31230000 082431 3230B50HC9076502 NA 96951
COST 000000000000
CODE:
AMOUNT: \$39,292.00

AB: 96X31220000 082431 3230KKD3LB010429 NA 96951
COST 000000000000
CODE:
AMOUNT: \$26,421.00