W911KB-09-R-0001

PROPOSAL DOCUMENTS

2009-2011 TRANSITIONAL & MAINTENANCE DREDGING

PORT OF ANCHORAGE

ANCHORAGE, ALASKA

SOLICITATION, OFFER, AND AWARD
SUPPLIES OR SERVICES AND PRICE COSTS
CONSTRUCTION SPECIFICATIONS/STATEMENT OF WORK
INSPECTION AND ACCEPTANCE
SPECIAL CONTRACT REQUIREMENTS
CONTRACT CLAUSES
LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS
REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF OFFERORS
INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS
EVALUATION FACTORS FOR AWARD

MARCH 2009

OPEN TO LARGE AND SMALL BUSINESS

U.S. ARMY ENGINEER DISTRICT, ALASKA
CORPS OF ENGINEERS
P.O. BOX 898
ANCHORAGE, ALASKA 99506-0898

INCREASE PROFIT **SUBMIT VE CHANGE**

SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair)	1. SOLICITATION NO. W911KB-09-R-0001	2. TYPE OF SOLICITATION [ ] SEALED BID (IFB) [X] NEGOTIATED (RFP)	3. DATE ISSUED 22-Dec-2008	PAGE OF PAGES 1 OF 83

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.	6. PROJECT NO.

7. ISSUED BY CODE W911KB	8. ADDRESS OFFER TO (If Other Than Item 7) CODE
U.S. ARMY ENGINEER DISTRICT, AK CEPOA-CT (W911KB) PO BOX 6898 ELMENDORF AFB AK 99506-0898 TEL: FAX:	**See Item 7** TEL: FAX:

9. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS)
	CHRISTINE A DALE	907-753-5618

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying no., date):

NACIS: 237990 SIZE STANDARD: $20,000,000 million

PROJECT TITLE AND LOCATION: 2009 Transitional Dredging, Port of Anchorage, Anchorage, Alaska
Full and Open Competition
Description of Work: (Base Items 2009) Perform transitional dredging of an estimated 1,600,000 cubic yards of virgin materials, including removal of boulders and other unknown obstructions for the Barge facility and North Extension at the Port of Anchorage, Alaska. (Optional Items 2010) Perform transitional dredging of an estimated 550,000 cubic yards of virgin materials, including removal of boulders and other unknown obstructions for the South Extension at the Port of Anchorage, Alaska. Perform maintenance dredging of approximately 4,000,000 cubic yards of shoal materials for the existing Port, Barge facility, and North and South Extensions at the Port of Anchorage, Alaska. (Optional Items 2011) The Contractor is to furnish all labor, equipment, supplies, materials, supervision and other items and services necessary to accomplish the work. The period of work is from July 1, 2009 to November 1, 2011. Type of contract is firm-fixed-price

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11. The Contractor shall begin performance within 10 calendar days and complete it within _____ calendar days after receiving [ ] award, [X] notice to proceed. This performance period is [X] mandatory, [ ] negotiable. (See 52.211-10 .)

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.)	12B. CALENDAR DAYS
[X] YES [ ] NO	10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 5 copies to perform the work required are due at the place specified in Item 8 by _____ (hour) local time _____ (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee [ ] is, [X] is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

SOLICITATION, OFFER, AND AWARD (Continued)

(Construction, Alteration, or Repair)

OFFER ***(Must be fully completed by offeror)***

14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*	15. TELEPHONE NO. *(Include area code)*
	16. REMITTANCE ADDRESS *(Include only if different than Item 14)* **See Item 14**
CODE / FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS	SEE SCHEDULE OF PRICES

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*	20B. SIGNATURE	20C. OFFER DATE

AWARD ***(To be completed by Government)***

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)*	ITEM	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO ☐ 10 U.S.C. 2304(c) ☐ 41 U.S.C. 253(c)
26. ADMINISTERED BY	CODE	27. PAYMENT WILL BE MADE BY: CODE

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CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return _____ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.

☐ 29. AWARD *(Contractor is not required to sign this document.)* Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN *(Type or print)*		31A. NAME OF CONTRACTING OFFICER *(Type or print)* TEL: EMAIL:
30B. SIGNATURE	30C. DATE	31B. UNITED STATES OF AMERICA BY / 31C. AWARD DATE

SECTION 00 73 00.00 29
SPECIAL CONTRACT REQUIREMENTS

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SECTION 00 73 00.00 29
SPECIAL CONTRACT REQUIREMENTS

1. **(SCR-8) SUBMITTALS (ER 415-1-10, 15 April 1997):**

SEE SECTION 01 33 00: SUBMITTAL PROCEDURES Within 30 days after receipt of Notice to Proceed, the Contractor shall complete and submit to the Contracting Officer, in triplicate, submittal register ENG Form 4288 listing all submittals and dates. In addition to those items listed on ENG Form 4288, the Contractor shall furnish submittals for any deviation from the plans or specifications. The scheduled need dates must be recorded on the document for each item for control purposes. In preparing the document, adequate time (minimum of 30 days) shall be allowed for review and, only when stipulated, approval and possible resubmittal. Scheduling shall be coordinated with the approved progress schedule. The Contractor's Quality Control representative shall review the listing at least every 30 days and take appropriate action to maintain an effective system. Copies of updated or corrected listing shall be submitted to the Contracting Officer at least every 60 days in the quantity specified. Payment will not be made for any material or equipment which does not comply with contract requirements.

Section 01 33 00 includes an ENG Form 4288 listing technical items the Contractor shall submit to the Contracting Officer, as indicated in the contract requirements.

2. **(SCR-10) ANCHORAGE PHYSICAL DATA (APR 1984):**

Data and information furnished or referred to below are furnished for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

A. The indications of physical conditions on the drawings and in the specifications are the result of site investigation.

B. Weather Conditions: Weather records for Anchorage are available at the National Oceanic and Atmospheric Administration Office in Anchorage, Alaska. Each offeror should satisfy himself before submitting his offer as to hazards likely to arise from weather conditions.

C. Transportation Facilities:

1. Water: Anchorage is a port of call for scheduled and unscheduled commercial and military deep and shallow draft vessels in the Alaska trade.

2. Air: Scheduled and charter commercial airline service is available from airports at Anchorage.

3. Land: Anchorage is connected to the primary and secondary state highway system and is accessible from the lower 48 states via the Alaska Highway.

4. Railroad: The Alaska Railroad offers freight service from the 48 contiguous states and Canada via rail barge and trainship through

Whittier, and from Seward, to Anchorage and Fairbanks. In addition to the freight service, scheduled passenger service and express service between Anchorage and Fairbanks, and passenger service between Anchorage and Whittier are also available. Fairbanks (including Eielson Air Force Base and Fort Wainwright) is the northern terminus, and Seward and Whittier are the southern terminals of the Alaska Railroad.

D. Weather Data: A Climatological Summary for Anchorage is attached to the end of this section.

3. (SCR-24) SIGNAL LIGHTS:

The Contractor shall display signal lights and conduct its operations in accordance with the General Regulations of the Department of the Army and of the Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed; vessels working on wrecks, dredges, and vessels engaged in laying cables or pipe or in submarine or bank protection operations, lights to be displayed on dredge pipe lines, and day signals to be displayed by vessels of more than 65 feet in length moored or anchored in a fairway or channel, and the passing by other vessels of floating plant working in navigable channels, as set forth in Commandant U.S. Coast Guard Instruction M16672.2, Navigation Rules: International-inland (COMDTINST M16672.2) of 33 CFR 81 Appendix A (International) and 33 CFR 84 through 33 CFR 89 (Inland) as applicable.

4. (SCR-25) COMMUNICATION SECURITY:

All communications with DOD organizations are subject to COMSEC review. Contractor personnel shall be aware that telecommunications networks are continually subject to intercept by unfriendly intelligence organizations. The DOD has authorized the military departments to conduct COMSEC monitoring and recording of telephone calls originating from or terminating at DOD organizations. Therefore, civilian Contractor personnel are advised that any time they place a call to or receive a call from Alaska District offices or Resident Engineer offices located on military installations, they are subject to COMSEC procedures. The Contractor will assume the responsibility for ensuring wide and frequent dissemination of the above information to all employees dealing with official DOD information.

5. (SCR-40) KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS (May 2006):

During the performance of this contract, no substitutions shall be made for Subcontractors, outside associates, consultants or individuals specifically identified in the Contractor's accepted proposal to perform key functions in the work, unless determined necessary by the Contracting Officer and approved in writing. Proposed substitutes shall have qualifications comparable to those of the persons being replaced.

6. (SCR-45) SAFETY AND HEALTH REQUIREMENTS MANUAL, MA 385-1-1, U.S. ARMY CORPS OF ENGINEERS (MAR 06):

In accordance with Contract Clause 52.236-13, *ACCIDENT PREVENTION*, the Contractor shall comply with the latest version of Engineer Manual 385-1-1, including any interim revisions, in effect at the time of the solicitation. EM

385-1-1 and its changes are available at ttp://www.hq.usace.army.mil/hqhome/. At the HQ homepage, select HQ Offices, scroll to Safety & Occ. Health; at the Safety and Occupational Health Home page, select EM 385-1-1, then most recent dated edition & changes, English Version (controlling with changes), then Changes to EM 385-1-1.

7. (SCR-53) GOVERNMENT-FURNISHED RFP DRAWINGS, SURVEYS AND SPECIFICATIONS (JUL 02):

This is to clarify that contract clause 252.236-7001, ***CONTRACT DRAWINGS AND SPECIFICATIONS,*** refers to any Government-furnished design or design criteria included in the Request for Proposal (RFP).

8. (SCR-54) GOVERNMENT-FURNISHED SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (JUL 2003):

This is to clarify that contract clause 252.236-21, ***SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION,*** refers to any specifications and drawings furnished in the Request for Proposal (RFP). The term "specifications" refers to the design criteria or scope of work, in addition to any attached specifications.

9. (SCR-62) QUALIFICATIONS OF THE CONTRACTOR QUALITY CONTROL SYSTEMS MANAGER (CQCSM):

(a) The CQC System Manager (CQCSM) described in Section 01 45 04.00 29 shall be assigned no other duties.

(b) In lieu of the education and experience requirements for the CQC System Manager listed in the CQC Section 01 45 04.00 29, the CQC Systems Manager may qualify provided they have a minimum of 7 years experience in construction quality control and are International Code Council (ICC) certified as a Commercial Building Inspector. For Military Family Housing projects, ICC Residential Building Inspector certification is required in lieu of the Commercial Building Inspector certification.

10. (SCR-72) REQUIREMENTS FOR CONTRACTORS PERFORMANCE EVALUATION

The Government will evaluate the contractor's performance and prepare a performance report using the Construction Contractor Appraisal Support System (CCASS), a web-based system (http://www.cpars.csd.disa.mil/). After an evaluation (interim or final) is generated by the Government, the contractor will have the ability to access, review and comment on the evaluation for a period of 30 days. If the Contractor fails to review, and or comment on the evaluation within the 30-day period, the Contracting Officer will take the appropriate steps to finalize the evaluation without the contractor's comments. It is the sole responsibility of the Contractor to purchase any necessary software to access the electronic system, including a Public Key Infrastructure (PKI) certificate. Details and information to access the system are listed below. The contractor shall provide the Contacting Officer the primary contact name and email address in order to receive the initial email and to access the system. Additional information and training material is available at http://www.cpars.csd.disa.mil/. This web site will give the contractor an understanding of the system and levels of access, the policies and regulations governing CCASS and the electronic workflow with particular attention to the Contractor comment function. Contractor users are required to obtain a PKI certificate in order to log into CCASS. PKI certificates can

be purchased from DoD's industries partners under External Certificate Authorities (ECAs). A list of ECAs vendors are available at http://www.cpars.csd.disa.mil/pki_info.htm.

11. (SCR-101) DAMAGE TO WORK:

The responsibility for damage to any part of the permanent work shall be as set forth in the clause of the contract entitled "Permits and Responsibilities". However, if, in the judgment of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood or earthquake, which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor shall make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such work an equitable adjustment pursuant to Clause, "Changes", of the contract, will be made as full compensation for the repairs of that part of the permanent work for which there are no applicable contract unit or lump sum

prices. Except, as herein provided, damage to all work (including temporary construction), utilities, materials, equipment and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense, regardless of the cause of such damage.

12. (SCR-104) CONTINUITY OF WORK:

No payment will be made for work done in any area designated by the Contracting Officer until the full depth required under the contract is secured in the whole or such area, unless prevented by ledge rock, nor will payment be made for excavation in any area not adjacent to and in prolongation of areas where full depth has been secured except by decision of the Contracting Officer. Should any such nonadjacent area be excavated to full depth during the operations carried on under the contract, payment for all work therein may be deferred until the required depth has been made in the area intervening. The Contractor may be required to suspend dredging at any time when for any reason the gages or ranges cannot be seen or properly followed.

13. (SCR-113) ENVIRONMENTAL LITIGATION:

A. If the performance of all or part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor or a subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the

"Suspension of Work" clause of this contract. The period of such suspension, delay or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

B. The term "environmental litigation", as used _herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

ATTACHMENT: CLIMATOLOGICAL SUMMARY

CLIMATOLOGICAL SUMMARY

ANCHORAGE, ALASKA

	Mean Annual	35°F	
	Highest Recorded	86°F	Jun 1953
	Lowest Recorded	-38° F	Feb 1947
	Maximum Freezing Index	3278°Days	1955-1956
	Maximum Thaw Index	3836° Days	1957
	Mean Annual	14.74"	
	Mean Annual Snowfall (inches)	70.6"	
	Maximum Monthly	5.43"	Sep 1961
	Maximum Monthly Mean	2.50"	September
	Maximum Rainfall (24-hr Period)	2.06"	Jul 1956
	Maximum Snowfall (24-hr Period)	17.7"	Dec 1955
	Maximum Monthly Snowfall	48.5"	Feb 1955
	Mean Hourly Speed	6.7 mph	
	Prevailing Direction	N	
	Maximum Velocity	109 mph	
	Direction Maximum Velocity	NNE	Feb 2004
	Clear	64	
	Partly Cloudy	65	
	Cloudy	236	
	Precipitation 0.01 inch or more	115	
	Snow, Sleet, or Hail 1.0 inch or more	22	
	Heavy Fog	26	
	Thunderstorms	1	
	Greater than or Equal to 70°F	15	
	Less than or Equal to 32°F	113	
	Less than or Equal to 32°F	100	
	Less than or Equal to 0°F	37	

--END OF SPECIAL CONTRACT REQUIREMENTS--

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SECTION 01 19 40.00 29

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SECTION 01 19 40.00 29

SPECIAL ITEMS (CIVIL WORKS)

PART 1 GENERAL

1.1 SCOPE

Items included in this section cover special features and/or requirements which are not otherwise specified or indicated.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 1110-2-1003	(Jan 2002) Engineering and Design - Hydrographic Surveying
EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

1.3 ACCIDENT PREVENTION PLAN

The Contractor shall obtain the Contracting Officer's approval of the Accident Prevention Plan required by EM 385-1-1 prior to start of any work at the project site.

1.3.1 Navigation Safety and Coordination Plan

The Contractor shall submit a Navigation Safety and Coordination Plan as part of the Accident Prevention Plan. This plan shall include but not be limited to temporary lights at night and/or marker buoys during construction, "Notice to Mariners" and coordination with local officials, and reference to applicable U.S. Coast Guard regulations for construction vessels as well as SECTION 19, Floating Plant and Marine Activities, of EM 385-1-1.

1.4 FIRE SAFETY

The Contractor shall obtain a permit from the organization having jurisdiction over the job site for any welding or open flame work.

1.5 INSPECTION

1.5.1 General Requirements

The Contractor shall install and maintain any required gauges, ranges, location marks and limit marks in proper order and position.

1.5.2 Contractor Furnished Equipment, Labor, Materials, and Transportation

The Contractor shall furnish, upon the request of the Contracting Officer, the use of such boats, boatmen, laborers, and material forming a part of the ordinary and usual equipment and crew of the dredging plant as required by the Government for inspection of the work and suitable transportation from all points on shore designated by the Contracting Officer to and from the various points of plant. Should the Contractor refuse, neglect, or delay compliance with these requirements, the specific facilities may be furnished and maintained by the Contracting Officer, and the cost thereof will be deducted from any amounts due or to become due the Contractor. The Contractor shall also furnish 2 VHF handheld radios and/or 2 cellular telephones, as determined by the Contracting Officer, with a local Anchorage number subscribed to a local Anchorage system. The contractor shall also furnish necessary computer equipment and software as specified in SECTION 35 22 24.00 29 HOPPER DREDGE SILENT INSPECTOR.

1.5.3 Noncompliance

Should the Contractor refuse, neglect, or delay compliance with these requirements, the specific facilities may be furnished and maintained by the Contracting Officer, and the cost thereof will be deducted from any amounts due or to become due the Contractor.

1.6 EXAMINATION AND ACCEPTANCE

1.6.1 Examination

As soon as practicable after completion of each phase of dredging, such work shall be thoroughly examined as specified in paragraph SURVEYS herein. Should any shoals, lumps, or other lack of depth 1 foot or more above Project Depth be disclosed by this examination, the Contractor will be required to remove same.

1.6.2 Acceptance

Acceptance of whole or part of the work and the deductions or corrections of deductions made thereon will not be reopened after having once been made, except on evidence of collusion, fraud, or obvious error. The acceptance of a completed section shall not change the time of payment of the retained percentages of the whole or any part of the work.

1.7 CAMP FACILITIES

There are no Government owned camp facilities at the job site for the Contractor's use.

1.8 UTILITIES

The furnishing of water, electricity, and other utilities for work under this contract will be the Contractor's responsibility.

1.9 GOVERNMENT FIELD OFFICE

The Contractor shall provide the Contracting Officer's Representative with access to an office, with a desk, copier; access to a toilet; and an area to observe the project operations while protected from the weather; to the satisfaction of the Contracting Officer. All costs shall be borne by the Contractor and included in the contract price.

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1.10 PARTNERING

a. The Government intends to encourage the foundation of a cohesive partnership with the Contractor and its subcontractors. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives are effective and efficient contract performance, intended to achieve completion within budget, on schedule, and in accordance with plans and specifications.

b. This partnership will be bilateral in makeup, and participation will be totally voluntary. Typical partnering costs include travel and per diem for attendees to the partnering site, meeting room rental, and facilitator costs. Implementation of this initiative will be a topic of discussion at the Pre-construction Conference. Any costs associated with implementing this partnership will be agreed to by both parties and will be shared equally subject to the cost limitations of Section 01 22 00.00 10 - MEASUREMENT, PAYMENT, AND CONTRACT COST BREAKDOWN, paragraph 1.3.5. To implement this partnership initiative, it is anticipated that within 30 days after Notice to Proceed the Contractor's on-site Project Manager and the Government's on-site representative will attend a partnership development seminar followed by a team-building workshop to be attended by the Contractor's key on-site staff and Government personnel. Follow-up workshops will be held periodically throughout the duration of the contract, as agreed to by both parties.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 COORDINATION WITH OTHERS

3.1.1 Traffic

Dredging may be interrupted by vessels maneuvering or moored anywhere within the dredging limits. The Contractor shall keep advised of vessel arrivals and departures and conduct operations so that interference with vessels will not occur. The Contractor's operations shall allow access to and from the Port at all times. All dredging activities, with special emphasis placed upon those dredging activities near the face of the Port and P.O.L. terminal docks, shall be coordinated with the Port of Anchorage Operations Manager at (907) 343-6200. The Contractor shall also coordinate with the Port of Anchorage Operations Manager in the unlikely event that it becomes necessary to have vessels moved out of the way of dredging operations. Pursuant to Contract Clause OTHER CONTRACTS (FAR 52.236-008) of this contract, the Contractor may be required to work in close proximity to another contractor and share the same disposal site. In the event that multiple contractors are required to work within the project limits, work areas for each contractor will be coordinated with the Contracting Officer's Representative and the Port of Anchorage Operations Manager at the required weekly coordination meetings.

3.2 SURVEYS

Surveys shall be performed through the use of an independent certified hydrographic surveyor for the Base requirement and option years 2010 and 2011 (if awarded). The independent certified hydrographic surveyor shall perform pre-dredge, intermediate, and post-dredge surveys. Actual area(s) dredged between successive surveys shall be shown on each successive survey for

each type of dredging equipment, as appropriate. Surveys are to be performed on days when ship traffic at the dock face is minimal in order to provide maximum coverage of the project area. Coordination with the Port Operations Manager, the Contractor Officer's Representative, and any other hydrographic survey vessels operating within the Survey Limits is essential. All surveys shall have soundings taken at 100 foot intervals perpendicular to the project baseline and shall be recorded and legibly plotted across the entire survey limits as shown on the contract drawings; except that within areas A and C, additional soundings shall be taken parallel to the dock face at 25 foot intervals, sorted to show the highest (shoal biased) soundings, and shall be legibly plotted along the lines of survey. Care shall be taken to show the highest soundings, that is, those with the least depth, on the final drawings. Additional survey soundings shall be recorded and plotted where topographic anomalies or obstacles of 2 feet or greater are encountered.

A pre-dredge survey of the entire survey limits shown on the contract drawings, shall be performed prior to the start of dredging. The Contractor shall notify the Contracting Officer in writing of its intent to perform a pre-dredge survey at least 10 days in advance.

Intermediate surveys shall generally be performed every Wednesday of each week following the pre-dredge survey and going through October 31 of the base year and option year (if awarded). Intermediate may be re-scheduled, as needed, from the specified weekly sequence to accurately reflect final dredging conditions.
The Post-dredge survey for each year awarded shall be performed within 1 day following completion of final dredging to verify final dredging results for the dredging season. The Contractor shall notify the Contracting Officer in writing of its intent to perform any post-dredge survey at least 3 days in advance. If the results of any post-dredge survey indicate that the specified project depth has not been achieved for any part of the project, dredging shall resume until the condition has been corrected and the post-dredge survey shall be repeated at no additional cost to the Government. This process shall continue until the specified project depth has been achieved.

3.2.1 Equipment

The Contractor shall provide information to the Contracting Officer on electronic, horizontal positioning and recording/depth finding equipment to be used in the work, demonstrating that it will provide surveys meeting all requirements of EM 1110-2-1003 for hydrographic surveying. The information provided shall include, as a minimum, the name, model and year of manufacture of the equipment, the electronic frequencies of the horizontal positioning and depth finding equipment, and the manufacturer's stated positioning accuracy and capability. In addition, the Contractor shall provide proof that the vessel to be used is safe and suitable for operation in the waters in which the work is to be performed, and that experienced staff will be used for operation of the vessel as well as the positioning and recording/depth finding equipment

3.2.2 Quantity Computation Drawings

Quantity computations shall be performed for all surveys. Quantity computations for the pre-dredge survey shall show quantities available to project depth, required over-depth, and maximum pay-line for each area, as well as the total to each depth for all areas, calculated using the average-end-area method and given in cubic yards. For all successive

hydrographic surveys, including progress, intermediate and post-dredge, quantity computations shall show the survey-to-survey overall quantity Cut and Fill between surveys, as well as the quantities available to project depth, required over-depth, and maximum pay-line for each area, and the total to each depth for all areas. Calculations shall be performed using the average-end-area method and given in cubic yards.

In addition, each successive survey after the pre-dredge, shall show computations for material removed within the area dredged between successive surveys. Quantity removed to the maximum pay-line for each dredge equipment type shall be shown separately, and likewise any over-dredging within the dredge area for that survey interval shall be computed and recorded. A running count of quantity removed to max pay-line and over-dredged shall be maintained and reported. Calculations shall be performed using the average-end-area method and given in cubic yards.

Preliminary quantities shall be furnished to the Contracting Officer within 2 days after completion of any survey. Final quantities shall be furnished to the Contracting Officer within 10 days after completion of any survey.

3.2.3 Plan-View Drawings

3 .2 .3 . 1 Government-Furnished

The Contracting Officer will provide the Contractor with a CD-ROM disk(s) containing data in the AutoCAD .DWG format capable of producing a basic survey contract drawing, complete with area map, borders, title block, and miscellaneous information.

3.2.3.2 Contractor Submittals

3.2.3.3 Surveys

The Contractor shall provide CD(s) of all raw survey data to the Contracting Officer's Representative in the field immediately following any survey. Also following each survey, the Contractor shall reduce the survey depth soundings for all surveys to the nearest one-tenth (0.1) foot and plot them onto plan-view mylars computer-generated by the independent hydrographic surveyor from the CD(s) provided. All pertinent title block information shall be printed within the block. Dredged areas shall be shown as required under SURVEYS above. Proposed title block information shall be submitted to the Contracting Officer in advance for approval. Any information found in error on the Government-furnished drawings provided in paragraph Government-Furnished above, such as vicinity maps, notes, shorelines, floats, docks, navigational aids, control coordinates, etc., shall be eradicated and replaced with accurate data as it becomes known. Each drawing shall contain all pertinent data ink-plotted by machine legibly and accurately at above spacing. Final survey drawings shall be signed, dated and stamped by the independent hydrographic surveyor, complete and ready for Government review and signatures. Survey drawings shall also be submitted on CD(s)in AutoCAD DWG format as specified above, capable of reproducing the complete plotted survey drawings. Preliminary drawings in DWF format and point files shall be submitted electronically by email within 2 days after completion of any survey. All point file data shall be sorted, edited, tide corrected, and provided in a COGO format ready for used in AutoDESK software. An edited point file shall not exceed 1.5 megabytes in size. Final drawings and CD(s), including point files, shall be submitted within 10 days after completion of any survey.

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3.2.3.4 Daily Report of Hopper Dredge Operations

The Contractor shall provide a completed ENG Form 27A - Daily Report of Operations - Hopper Dredges, to the Contracting Officer for each day of hopper dredging. A blank ENG Form 27A is attached at the end of this section.

3.2.3.5 Field Notes

Upon completing any survey, quantity calculations, or plan-view drawings, the Contractor shall furnish the originals of all field notes, notebooks, fathometer data, sorted and corrected electronic point files, and any other records relating to the survey or to the layout of the work to the Contracting Officer. The Contractor shall retain copies of all such materials furnished to the Contracting Officer.

3.2.4 Existing Monuments

As part of the pre-dredge survey, the position, elevation, and condition of existing control points mentioned or shown on the drawings shall be verified.

If, during the performance of the work, the Contractor removes or destroys previously set brass or aluminum survey caps, the survey caps, shall be reinstated by the Contractor at his expense.

3.2.5 Accuracy

All surveys for layout, quantities and final As-Built conditions shall conform to standard third order traverse requirements as specified in Field Manual FM 3-34.331, , Ch. 1. The following accuracies shall be attained:

a. Azimuth closure shall not exceed 5 seconds per angle in traverse.
b. Distance closure error, after azimuth adjustment, shall not exceed 1 part in 5,000 parts.
c. Traverse adjustment shall be by the Compass Rule.
d. Levels shall be to third order standards.
e. Vertical control shall be in feet and refer to Mean Lower Low Water Datum (MLLW = 0.0 feet).
f. Horizontal control shall be as stated on the individual contract drawings.

3.2.6 Certification

The independent hydrographic surveyor shall be a State of Alaska Registered Land Surveyor (RLS) or have current hydrographic certification from the American Congress for Surveying and Mapping (ACSM), valid in the State of Alaska. The surveyor shall document at least 3 years of experience in hydrographic surveying of navigable channels.

3.3 EQUIPMENT

The Contractor agrees to keep equipment on the job sufficient to meet the requirements of the work. The equipment shall be in satisfactory operating condition and capable of safely and efficiently performing the work as set forth in the specifications and shall be subject to inspection by the Contracting Officer or his representative at all times. The equipment used shall be of a design and have characteristics similar to equipment which has been used successfully for a minimum of 3 years under similar

conditions. Any clamshell bucket shall be at least 14 cubic yard capacity and a minimum weight of 50,000 pounds. It shall be the responsibility of the Contractor to prove the equipment has sufficient capacity to accomplish the work in a timely manner without damage to existing port facilities, or obstructing navigation. Prior to the start of any dredging, certifications showing the most recent load and performance test results, recent certification of inspection, and inspector's name, qualifications, and address shall be provided to the Contracting Officer for all cranes/derricks.

3.4 MOBILIZATION AND PROGRESS SCHEDULE

The Contractor shall furnish a complete mobilization and projected work progress schedule within 10 days of Notice to Proceed. The equipment listed, manpower to be utilized, and proposed work schedule shall be furnished in sufficient detail to permit determination by the Contracting Officer that the contract requirements can readily be met.

3.5 EQUIPMENT SCHEDULE

The PLANT AND EQUIPMENT SCHEDULE attached to this section shall be completed by the Contractor as hereafter described, and submitted within 10 days of receipt of the Notice to Proceed.

3.5.1 Number

For equipment, give identifying number or name.

3.5.2 Type

Under this heading give general description. Sufficient detailed information shall be furnished to properly delineate the proposed equipment and operation.

3.5.3 Capacity

Under this heading, state the estimated capacity of the plant in cubic yards per day when working materials similar to those anticipated in the work, for each location, accounting for the variable distances to disposal sites. No reduction in the stated capacity of the plant employed on the work shall be made except by written permission of the Contracting Officer. (The measure of the "capacity of the plant" shall be its actual performance on the work which these specifications apply).

3.6 PLANT AND EQUIPMENT SCHEDULE

Minimum Plant To Be Used *

No.	Type	Capacity	Crew Requirements	Age and Condition	Location

*NOTE: In preparing the above tabulation, the Contractor shall insert the following information under the appropriate heading, using a separate line for each major item and additional pages if necessary.

a. Number. For dredges, towboats, and material scows give identifying number or name.

b. Type. Under this heading give description as follows: For clamshell dredges, show bucket capacity in cubic yards, horsepower of hoist engine,

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type of power, number of swings per hour, and maximum draft, beam, and length of dredge. Show pump size and pump and cutter-head horsepower (hp) for pipeline dredges. For hopper dredges, show number of drag arms including diameter(s) and length(s), hopper capacity, pump size(s) and horsepower, maximum draft, length, beam, and type and horsepower of propulsion. Show maximum draft, length, beam, and hopper capacity of material scows. Show maximum draft, length, beam, and horsepower of towboat. Indicate number of crew required for each item of plant.

3.7 ATTACHMENTS

SAMPLE LETTER

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S A M P L E L E T T E R

Contracting Officer
Date _____
Address (as stated in Notice of Award)

SUBJECT: Warranty Provisions, Contract

GENTLEMEN:

This is to acknowledge our responsibility in connection with the warranty provisions of this contract as set forth in the contract specifications.

The following items, equipment or systems furnished or installed under this contract are hereby warranted against defective design, material and workmanship for a period as indicated:

Warranted Item, Equipment or System	Identification Serial Number, Etc.	Warranty Expires at 11:59 PM Std. Time

Upon receipt of notice from the Government of failure of any part or parts of the warranted item, equipment, or system during the warranty period, the affected part or parts will be replaced promptly with new parts. Such replacement will include furnishing and installing the new part or parts, making all necessary repairs, restoring the item, equipment, or system to the operating condition specified in this contract and making all such tests as are necessary to ensure that there are no remaining defects. Such tests will be performed in the presence of the Representative of the Using Agency indicated below.

We are responsible to _____ for the warranty provisions of this contract. Correspondence regarding the failure of any of the preceding items, equipment or systems covered by the warranty provisions of this contract should be addressed to:

_____

Telephone Number:

Very truly yours,

Signed:
Title: _____
Organization:

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MEASUREMENT AND PAYMENT

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PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 CONTRACT COST BREAKDOWN
3.2 ATTACHMENT

-- End of Section Table of Contents --

SECTION 01 22 00.00 10

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 GENERAL

Payment will be made at the contract unit or lump sum price. The price for each item shall constitute full compensation for furnishing all labor, equipment, and materials, and performing all operations necessary to construct and complete the work in accordance with the specifications and drawings. Payment shall be considered as full compensation, notwithstanding that minor features of the work to complete items may not be mentioned. Deviation in the actual quantity, either above or below the estimated quantity shown, shall not be made a basis for a claim for adjustment in the contract unit price, except as otherwise specified in the CONTRACT CLAUSES under SECTION 00700, FAR 52.211-0018 VARIATIONS IN ESTIMATED QUANTITIES, and EFAR 52.212-5001 VARIATIONS IN ESTIMATED QUANTITIES - SUBDIVIDED ITEMS. Work paid for under one item will not be paid for under any other item.

1.2 MEASUREMENT

1.2.1 Job, Each, or Day

Items measured as a "Job", "Each" (EA), or "Day" will be measured for payment as a complete item.

1.2.2 Cubic Yard (CY)

Measurement for clamshell dredging shall be accomplished by calculating the net volume of material removed from within the dredging prism as calculated by "Barge Count" below. Measurement for cutter head and hopper dredging shall be accomplished by calculating the net volume of material removed from within the dredging prism as calculated by "Hopper Dredge" and "Cutter Head" below. Over-dredging shall be calculated by computing by comparing successive hydrographic surveys and calculating the net volume of material removed as specified in Section 01 19 40.00 - SPECIAL ITEMS and by "Hopper Dredge" below. Such hydrographic surveys shall be used to supplement barge counts and hopper dredging as specified below. Partial payments for all dredging shall be adjusted to deduct any quantities removed below the maximum pay line or outside the dredging prism as shown on the contract drawings and as determined from hydrographic surveys.

1.2.3 Barge Count

Prior to commencement of any clamshell dredging, the Contractor shall furnish the dimensions, weight, and volume displacement charts for each of the barges or scows to be used on the project. Displacement charts shall be certified by a registered engineer, marine surveyor, or naval architect. The volume of material placed in hoppers or scows for transport to the disposal site will be calculated. For converting scow or barge displacement to tonnage, salt- water density will be taken as 64.0 pounds per cubic foot. Tonnage will then be converted to volume by using a sediment density factor. The density factor shall be calculated by the Contractor by

weighing a sediment sample taken from a full barge or scow. All sampling, weighing, and calculations related to the density factor shall be performed in the presence of the Contracting Officer's Representative. The sediment density factor shall be recalculated by the Contractor whenever the material changes or upon request of the Contracting Officer's Representative. All calculations are subject to approval by the Contracting Officer's Representative. All barges and dumping vessels shall have staff gauges for measuring vessel displacement, placed and mounted in positions approved by the Contracting Officer. All dumping vessels shall be loaded as evenly as possible to obtain uniform distribution of the dredged material. An adjustment in volume will be made to compensate for water trapped in a dumping vessel. If any material remains in the dumping vessel upon its return from the disposal site, displacement measurements will be taken prior to reloading, and an adjustment will be made to the next disposal measurement.

1.2.4 Hopper Dredge

Hopper dredging shall be accomplished as follows, with reference to the attachments at the end of this Section:

The Contractor shall provide the following quantity computations of all dredged materials by the average-end-area method on 25 foot spaces.

(1) For each survey interval compute the quantity available to Project Depth, the Required Depth, and Maximum Payline for each designated survey area, including the north and south side slopes.

(2) Find the actual Cut and Fill quantities by doing a survey to survey computation for each survey interval.

(3) Compute the quantity removed by the Hopper Dredge by confining computations to the area covered by the Hopper for each survey interval.

(4) Compute the over dredging for the hopper by comparing the difference of Fill quantity to the Maximum Payline for each survey in their respective intervals. The area for over-dredging is defined by item (3) above.

(5) Shoaling is computed by taking the Maximum Pay Quantity available on the previous survey, subtracting the Maximum Pay Quantity available on the current survey. That quantity is then subtracted from the difference in the raw quantity removed by the Hopper dredge for that interval. This number is the total shoaled amount. The total shoaled amount is multiplied by the ratio of the area covered by the hopper over the area designated for dredging for each interval. The contour for the Maximum Pay depth is used to define the outer limit for both the hopper dredge area and the designated dredge area. A sample computation is attached.

All quantity computations and electronic versions of each survey shall be furnished to the Contracting Officer within four (4) days after the completion of any survey. The preliminary electronic point files (COGO format), used for quantity computations, shall be submitted with the electronic copies of each survey.

1.3 PAYMENT

1.3.1 Items 0001, Bid, Performance, and Payment Bond Cost

Payment will be made at the contract lump sum price and shall constitute full compensation for Bid, Performance, and Payment Bond Cost in accordance with SECTION 00700, FAR 52.228-0001 - BID GUARRANTEE, FAR 52.228-0002 - ADDITIONAL BOND SECURITY, and FAR 52.228-0015 - PERFORMANCE AND PAYMENT BONDS - CONSTRUCTION.

1.3.2 Mobilization and Demobilization

Items 0002AA, 0002AB, and 0002AC, Mobilization and Demobilization

Payment will include transportation of plant, equipment, supplies, and appurtenances to and from the project; assembly of plant; and removal of same after completion of the project. Payment will be made in accordance with SECTION 00700, DFAR 252.236-7004 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION.

1.3.3 Dredging and Disposal

Items 0003AA thru 0003AF, Optional 0003AG thru 0003AJ (if awarded), 0004AA thru 0004AF, Optional 0004AG thru 0004AJ (if awarded), 0005AA thru 0005AF, Optional 0005AG thru 0005AJ (if awarded), Optional 0006AA thru 0006AD (if awarded), Optional 0007AA thru 0007AD (if awarded), and Optional 0008AA thru 0008AD (if awarded), Dredging and Disposal

Payment will be made at the contract unit price and shall constitute full compensation for performing all dredging and disposal. Payment will be in accordance with above paragraphs GENERAL and MEASUREMENT. In no case will payment be made for material removed from below the maximum pay-line or outside the dredging prism as shown.

1.3.4 Item 0009 Hydrographic Surveys

Payment will be made at the contract unit price for each survey and shall constitute full compensation for performing the surveys as specified in SECTION 01 19 40.00 29 - SPECIAL ITEMS. If the Contractor is required to re-perform a post-dredge survey because re-dredging was required, no additional payment will be made. Under no circumstance will any payment be made for any survey until all requirements of SECTION 01 19 40.00 29, paragraphs 1.6 through 1.6.2, paragraphs 3.2.7 through 3.2.7.2.1, and paragraph 3.2.7.2.3.

1.3.5 Item Optional 0010 (if awarded), Partnering Session

Payment will include a maximum of fifty percent (50%) of the total lump sum price for conducting a partnering session or $20,000.00, whichever is less.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 CONTRACT COST BREAKDOWN

The Contractor shall furnish within 30 days after the date of Notice to Proceed, and prior to the submission of its first partial payment estimate,

a breakdown of its lump-sum pay item or items which will be reviewed by the Contracting Officer as to propriety of distribution of the total cost to the various accounts. Any unbalanced items as between early and late payment items or other discrepancies will be revised by the Contracting Officer to agree with a reasonable cost of the work included in the various items. This contract cost breakdown will then be utilized as the basis for progress payments to the Contractor.

3.2 ATTACHMENT

Survey Interval	Qty Avail 1st Survey A	Qty Avail 2nd Survey B	Change in Qty Avail C = A-B	Raw Qty Remove to -38 D	Shoal Qty for Interval E=D-C	Ratio of Dredge Area F	Q t y Adjusted for Shoal G=E *F
11-13 Jul	87,500	85,000	2,500	10,000	7,500	69%	5,175
13-16 Jul	85,000	89,152	-4,152	7,500	11,652	75%	8,739
16-18 Jul	89,152	89,000	152	5,000	4,848	85%	4,121
18-20 Jul	89,000	79,000	10,000	10,000	0	90%	0
20-23 Jul	79,000	70,000	9,000	7,000	-2,000	94%	0
			Total	39,500			18,035
			Summary	39,000	Raw Qty Removed		
			+	18,035	Shoal Adj ustmen		
			-	5,000	Over Dredge		
				52,535	Q t Total Payable Qty		

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SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUBMITTAL IDENTIFICATION (SD)

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

Certificates of insurance.
Surety bonds.
List of proposed subcontractors.
List of proposed products.
Construction Progress Schedule.
Submittal Register.
Schedule of values.
Health and safety plan.
Work plan.
Quality control plan.
Environmental protection plan.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports

Daily checklists

Final acceptance test and operational test procedure

SD-07 Certificates

Statements signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further the quality of orderly progression of a portion of the work by

documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.2.1 Government Approved

Government approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.2.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.3 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no re-submittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.4 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.5 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

1.6 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal

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shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.7 SUBMITTAL REGISTER

At the end of this section is a submittal register list showing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. The Contractor shall maintain a submittal register for the project in accordance with SECTION 01 45 04.00 10 CONTRACTOR QUALITY CONTROL.The Government will provide the initial submittal register in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall track all submittals.

1.8 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

1.9 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms are included in the QCS software that the Contractor is required to use for this contract. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.10 SUBMITTAL PROCEDURES

Submittals shall be made as follows:

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1.10.1 Procedures

a. Government approved and information only submittals shall be listed on separate 4025's.

b. Sample for testing shall be delivered with SECTION 01 45 04.00 10 CONTRACTOR QUALITY CONTROL. All other submittals shall be delivered to the contracting officer.

1.10.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.11 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.12 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Four copies of the submittal will be retained by the Contracting Officer and one copy of the submittal will be returned to the Contractor.

1.13 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.14 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements is to be similar to the following:

CONTRACTOR

(Firm Name)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheets(s)

SIGNATURE:

TITLE: __

DATE:

1.15 ATTACHMENT

Submittal Register
Eng Form 4025-R

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

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HEALTH, SAFETY, AND EMERGENCY RESPONSE PROCEDURES FOR CONTAMINATED SITES

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HEALTH, SAFETY, AND EMERGENCY RESPONSE PROCEDURES FOR CONTAMINATED SITES

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2003) Safety -- Safety and Health Requirements

1.2 SUBMITTALS

Government approval is required for submittals with a 11G11 designation; submittals not having a 11G11 designation are for information only or as otherwise designated. When used, a designation following the 11G11 designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP); G

Activity Hazard Analysis; G

Crane Critical Lift Plan; G

Crane Work Plan; G

Proof of qualifications for Crane Operators; G

Crane Operators

SD-06 Test Reports

Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, 11Reports.11

Accident Reports

Monthly Exposure Reports

Crane Reports

Regulatory Citations and Violations

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SD-07 Certificates

Third Party Certification of Barge-Mounted Mobile Cranes Certificate of Compliance (Crane)

Submit one copy of each permit attached to each Daily Quality Control Report.

1.3 DEFINITIONS

a. Associate Safety Professional (ASP). An individual who is currently certified as an ASP by the Board of Certified Safety Professionals.

b. Certified Construction Health & Safety Technician (CHST). An individual who is currently certified as a CHST by the Board of Certified Safety Professionals.

c. Certified Industrial Hygienist (CIH). An individual who is currently certified as a CIH by the American Board of Industrial Hygiene.

d. Certified Safety Professional (CSP). An individual who is currently certified as a CSP by the Board of Certified Safety Professionals.

e. Certified Safety Trained Supervisor (STS). An individual who is currently certified as an STS by the Board of Certified Safety Professionals.

f. Competent Person for Fall Protection. A person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as their application and use with related equipment, and has the authority to take prompt corrective measures to eliminate the hazards of falling.

g. High Visibility Accident. Any mishap which may generate publicity and/or high visibility.

h. Low-slope roof. A roof having a slope less than or equal to 4 in 12 (vertical to horizontal).

i. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.

j. Multi-Employer Work Site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors.

k. Operating Envelope. The area surrounding any crane. Inside this "envelope" is the crane, the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).

l. Qualified Person for Fall Protection. A person with a recognized degree or professional certificate, extensive knowledge, training and experience in the field of fall protection who is capable of performing design, analysis, and evaluation of fall protection systems and equipment.

m. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:

(1) Death, regardless of the time between the injury and death, or the length of the illness;

(2) Days away from work;

(3) Restricted work;

(4) Transfer to another job;

(5) Medical treatment beyond first aid;

(6) Loss of consciousness; or

(7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.

n. Site Safety and Health Officer (SSHO). The superintendent or other qualified or competent person who is responsible for the on-site safety and health required for the project. The Contractor quality control (QC) person can be the SSHO on this project.

o. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.

p. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).

1.4 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this contract, work performed shall comply with USACE EM 385-1-1, and all applicable federal, state, and local laws, ordinances, criteria, rules and regulations. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

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1.5 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employee uses illegal drugs or consumes alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine, or saliva specimens and test the injured and involved employees for the influence of drugs and alcohol. A copy of the test shall be made available to the Contracting Officer upon request.

1.6 SITE QUALIFICATIONS, DUTIES AND MEETINGS

1.6.1 Personnel Qualifications

1.6.1.1 Site Safety and Health Officer (SSHO)

Level 3:
A minimum of 5 years safety work on similar projects.
30-hour OSHA construction safety class or equivalent within the last 5 years.
An average of at least 24 hours of formal safety training each year for the past 5 years.
Competent person training as needed.

1.6.1.2 Crane Operators

Crane operators shall meet the requirements in USACE EM 385-1-1, Section 16 and Appendix G. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacitates of 50,000 pounds or greater, crane operators shall be designated as qualified by a source that qualifies crane operators (i.e., union, a government agency, or and organization that tests and qualifies crane operators). Proof of current qualification shall be provided.

1.6.2 Personnel Duties

1.6.2.1 Site Safety and Health Officer (SSHO)/Superintendent

a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractor's daily quality control report.

b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and sub-contractors.

c. Maintain applicable safety reference material on the job site.

d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.

e. Implement and enforce accepted APPS and AHAs.

f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of

unresolved safety and health deficiencies shall be posted on the safety bulletin board.

g. Ensure sub-contractor compliance with safety and health requirements. Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

1.6.2.2 SSHO Duties

a. Perform safety and occupational health management, surveillance, inspections, and safety enforcement for the project.

b. Perform as the safety and occupational health 11competent person11 as defined by USACE EM 385-1-1.

c. Be on-site whenever work or testing is being performed.

d. Conduct and document safety inspections.

1.6.3 Meetings

1. 6 .3 . 1 Preconstruct ion Conference

a. The Contractor will be informed, in writing, of the date of the preconstruction conference. The purpose of the preconstruction conference is for the Contractor and the Contracting Officer's representatives to become acquainted and explain the functions and operating procedures of their respective organizations and to reach mutual understanding relative to the administration of the overall project's Accident Prevention Plan (APP) before the initiation of work.

b. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analysis (AHAs) and special plans, program and procedures associated with it).

c. The Contractor shall discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be established to preclude project delays.

d. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP.

1.6.3.2 Weekly Safety Meetings

Conduct weekly safety meetings at the project site for all employees. The Contracting Officer will be informed of the meeting in advance and be allowed attendance. Minutes showing contract title, signatures of attendees and a list of topics discussed shall be attached to the Contractors' daily quality control report.

1.6.3.3 Work Phase Meetings

The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection. The analysis should be used during daily inspections to ensure the implementation and effectiveness of safety and health controls.

1.7 TRAINING

1.7.1 New Employee Indoctrination

New employees (prime and sub-contractor) will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

1.7.2 Periodic Training

Provide Safety and Health Training in accordance with USACE EM 385-1-1 and the accepted APP. Ensure all required training has been accomplished for all onsite employees.

1.7.3 Training on Activity Hazard Analysis (AHA)

Prior to beginning a new phase, training will be provided to all affected employees to include a review of the AHA to be implemented.

1.8 ACCIDENT PREVENTION PLAN (APP)

The Contractor shall use a qualified person to prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Preparation of Accident Prevention Plan". Where a paragraph or subparagraph element is not applicable to the work to be performed indicate "Not Applicable" next to the heading. Specific requirements for some of the APP elements are described below at paragraph 1.8.1. The APP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP shall be included in the applicable APP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the person and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer

and any designated CSP and/or CIH.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. The Contracting Officer reviews and comments on the Contractor's submitted APP and accepts it when it meets the requirements of the contract provisions.

Once accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, changes to the accepted APP shall be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and quality control manager. Should any unforeseen hazard become evident during the performance of work, the project superintendent shall inform the Contracting Officer, both verbally and in writing, for resolution as soon as possible. In the interim, all necessary action shall be taken by the Contractor to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment. Copies of the accepted plan will be maintained at the Resident Engineer's office and at the job site. The APP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP shall be incorporated in the plan as they are discovered.

1.8.1 EM 385-1-1 Contents

In addition to the requirements outlined in Appendix A of USACE EM 385-1-1, the following is required:

a. Names and qualifications (resumes including education, training, experience and certifications) of all site safety and health personnel designated to perform work on this project to include the designated site safety and health officer and other competent and qualified personnel to be used such as CSPs, CIHs, STSs, CHSTs. The duties of each position shall be specified.

b. Qualifications of competent and of qualified persons. As a minimum, competent persons shall be designated and qualifications submitted for each of the following major areas: excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; personal protective equipment and clothing to include selection, use and maintenance.

c. Health Hazard Control Program. The Contractor shall designate a competent and qualified person to establish and oversee a Health Hazard Control Program in accordance with USACE EM 385-1-1, Section 6. The program shall ensure that employees, on-site Government representatives, and others, are not adversely exposed to chemical, physical and biological agents and that necessary controls and protective actions are instituted to ensure health.

d. Crane Critical Lift Plan. Prepare and sign weight handling critical lift plans for lifts over 75 percent of the capacity of the crane or hoist (or lifts over 50 percent of the capacity of a barge mounted mobile crane's hoists) at any radius of lift; lifts involving

more than one crane or hoist; lifts of personnel; and lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks. The plan shall be submitted 15 calendar days prior to on-site work and include the requirements of USACE EM 385-1-1, paragraph 16.C.18. and the following:

(1) For lifts of personnel, the plan shall demonstrate compliance with the requirements of 29 CFR 1926.550(g).

(2) For barge mounted mobile cranes, barge stability calculations identifying barge list and trim based on anticipated loading; and load charts based on calculated list and trim. The amount of list and trim shall be within the crane manufacturer's requirements.

e. Alcohol and Drug Abuse Plan

(1) Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, [11] Drug Free Work Force.[11]

(2) Description of the on-site prevention program.

f. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place and during different phases of construction. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m (6 feet). A qualified person for fall protection shall prepare and sign the plan. The plan shall include fall protection and prevention systems, equipment and methods employed for every phase of work, responsibilities, assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Fall Protection and Prevention Plan shall be revised every six months for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. The accepted Fall Protection and Prevention Plan shall be kept and maintained at the job site for the duration of the project. The Fall Protection and Prevention Plan shall be included in the Accident Prevention Plan (APP).

g. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.

g. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.

h. Crane Work Plan. The Contractor shall provide a crane work plan to the Contracting Officer for acceptance. The crane work plan shall include the specific model of each crane and a drawing identifying their locations (exact), the dimensions, wheel sizes, number of wheels, wheel spacing, tire pressure(s), number of axles, axle spacing, minimum

wheel load to be exerted during operations and maximum outrigger load to be exerted during operations. The Contractor shall allow at least 10 working days for acceptance/non-acceptance of the crane work plan. No crane operations shall begin prior to written acceptance of the crane work plan by the Government. Resident Engineer shall be the government approving authority.

1.9 ACTIVITY HAZARD ANALYSIS (AHA)

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1. Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHA as amendments to the APP. An AHA will be developed by the Contractor for every operation involving a type of work presenting hazards not experienced in previous project operations or where a new work crew or subcontractor is to perform work. The analysis must identify and evaluate hazards and outline the proposed methods and techniques for the safe completion of each phase of work. At a minimum, define activity being performed, sequence of work, specific safety and health hazards anticipated, control measures (to include personal protective equipment) to eliminate or reduce each hazard to acceptable levels, equipment to be used, inspection requirements, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall protection methods used. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include requirements for safeguarding excavations. An activity requiring an AHA shall not proceed until the AHA has been accepted by the Contracting Officer's representative and a meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activity, including on-site Government representatives. The Contractor shall document meeting attendance at the preparatory, initial, and follow-up phases of quality control inspection. The AHA shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

Activity hazard analyses shall be updated as necessary to provide an effective response to changing work conditions and activities. The on-site superintendent, site safety and health officer and competent persons used to develop the AHAs, including updates, shall sign and date the AHAs before they are implemented.

The activity hazard analyses shall be developed using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require an AHA. The AHAs will be developed by the contractor, supplier or subcontractor and provided to the prime contractor for submittal to the Contracting Officer.

1.10 DISPLAY OF SAFETY INFORMATION

Within 1 calendar day after commencement of work, erect a safety bulletin board at the job site. The following information shall be displayed on the safety bulletin board in clear view of the on-site construction personnel,

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maintained current, and protected against the elements and unauthorized removal:

a. Map denoting the route to the nearest emergency care facility.

b. Emergency phone numbers.

c. Copy of the most up-to-date APP.

d. Current AHA(s).

e. OSHA 300A Form.

f. OSHA Safety and Health Protection-On-The-Job Poster.

g. Hot work permit.

1.11 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.

1.12 EMERGENCY MEDICAL TREATMENT

Contractors shall arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment.

1.13 REPORTS

1.13.1 Accident Reports

a. For recordable injuries and illnesses, and property damage accidents resulting in at least $2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the USACE Accident Report Form 3394 and provide the report to the Contracting Officer within 1 calendar day of the accident. The Contracting Officer will provide copies of any required or special forms.

b. For any weight handling equipment accident (including rigging gear accidents) the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report (Crane and Rigging Gear) form and provide the report to the Contracting Officer within 30 calendar days of the accident. Crane operations shall not proceed until cause is determined and corrective actions have been implemented to the satisfaction of the contracting officer. The Contracting Officer will provide a blank copy of the accident report form.

1.13.2 Accident Notification

Notify the Contracting Officer as soon as practical, but not later than four hours, after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than $2,000, or any weight handling equipment accident. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of

property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted.

1.13.3 Monthly Exposure Reports

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

1.13.4 Regulatory Citations and Violations

Contact the Contracting Officer immediately of any OSHA or other regulatory agency inspection or visit, and provide the Contracting Officer with a copy of each citation, report, and contractor response. Correct violations and citations promptly and provide written corrective actions to the Contracting Officer.

1.13.5 Crane Reports

Submit crane inspection reports required in accordance with USACE EM 385-1-1, Appendix H and as specified herein with Daily Reports of Inspections.

1.13.6 Certificate of Compliance

The Contractor shall provide a Certificate of Compliance for each crane entering an activity under this contract (see Contracting Officer for a blank certificate). Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the Contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926 and USACE EM 385-1-1 section 16 and Appendix H. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. The Contractor shall also certify that all of its crane operators working on the DOD activity have been trained in the proper use of all safety devices (e.g., anti-two block devices). These certifications shall be posted on the crane.

1.13.7 Third Party Certification of Barge-Mounted Mobile Cranes

Barge-mounted mobile cranes shall be certified in accordance with 29 CFR 1919 by an OSHA accredited person.

1.14 HOT WORK

All [11]Hot Work[11] shall conform to Port of Anchorage requirements. The Contractor will provide at least two (2) twenty (20) pound 4A:20 BC rated extinguishers for normal 11Hot Work11. All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any [11]Hot Work[11] done at this activity. The Fire Watch shall be trained in accordance with NFPA 51B and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit.

a. Oil painting materials (paint, brushes, empty paint cans, etc.), and all flammable liquids shall be removed from the facility at quitting time. All painting materials and flammable liquids shall be stored outside in a suitable metal locker or box and will require re-submittal with non-hazardous materials.

b. Accumulation of trays, paper, shavings, sawdust, boxes and other packing materials shall be removed from the facility at the close of each workday and such material disposed of in the proper containers located away from the facility.

c. The storage of combustible supplies shall be a safe distance from structures.

d. Area outside the facility undergoing work shall be cleaned of trash, paper, or other discarded combustibles at the close of each workday.

e. All portable electric devices (saws, sanders, compressors, extension chord, lights, etc.) shall be disconnected at the close of each workday. When possible, the main electric switch in the facility shall be deactivated.

f. When starting work in the facility, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency City Fire Department phone number.

PART 2 PRODUCTS

2.1 FALL PROTECTION ANCHORAGE

Fall protection anchorage, conforming to ANSI Z359.1, installed under the supervision of a qualified person in fall protection, shall be left in place for continued customer use and so identified by signage stating the capacity of the anchorage (strength and number of persons who may be tied-off to it at any one time).

PART 3 EXECUTION

3.1 CONSTRUCTION AND/OR OTHER WORK

The Contractor shall comply with USACE EM 385-1-1, NFPA 241, the APP, the AHA, Federal and/or State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard shall prevail.

3.1.1 Hazardous Material Use

Each hazardous material must receive approval prior to being brought onto the job site prior to any other use in connection with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material. Any work or storage involving hazardous chemicals or materials must be done in a manner that will not expose Government or Contractor employees to any unsafe or unhealthful conditions. Adequate protective measures must be taken to prevent Government or Contractor employees from being exposed to any hazardous condition that could result from the work or storage. The Prime Contractor shall keep a complete inventory of hazardous materials brought onto the work-site. Approval by

the Contracting Officer of protective measures and storage area is required prior to the start of the work.

3.1.2 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with USACE EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocynates and lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials.

3.1.3 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If material not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages at least 15 days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the Contracting Officer and the City Utilities Department to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

3.3 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and escape procedures.

3.3.1 Training

The Contractor shall institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, the Contractor shall provide training for each employee who might be exposed to fall hazards. A competent person for fall protection shall provide the training. Training requirements shall be in accordance with USACE EM 385-1-1, section 1.A.16.

3.3.2 Fall Protection Equipment

The Contractor shall enforce use of the fall protection equipment designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is on a surface 1.8 m (6 feet) or more above lower levels. Fall protection systems such as guardrails, personnel fall arrest system, safety nets, etc., are required when working within 1.8m (6 feet) of any leading edge. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, paragraphs 05.I. and 05.H. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with 29 CFR 1926.500, Subpart M, USACE EM 385-1-1.

3.3.2.1 Personal Fall Arrest Equipment

Personal fall arrest equipment, systems, subsystems, and components shall meet ANSI Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m (6 feet). The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken into consideration when attaching a person to a fall arrest system.

3.3.3 Fall Protection for Roofing Work

Fall protection controls shall be implemented based on the type of roof being demolished and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

a. Low Sloped Roofs:

(1) For work within 1.8 m (6 feet) of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, or safety nets.

(2) For work greater than 1.8 m (6 feet) from an edge, warning lines shall be erected and installed in accordance with 29 CFR 1926.500 and USACE EM 385-1-1.

3.3.4 Safety Nets

If safety nets are used as the selected fall protection system on the project, they shall be provided at unguarded work places, leading edge work or when working over water, machinery, dangerous operations or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, fall arrest systems or restraint/positioning systems are impractical. Safety nets shall be tested immediately after installation with a drop test of 181.4 kg (400 pounds) dropped from the same elevation a person might fall, and every six months thereafter.

3.3.5 Existing Anchorage

Existing anchorages, to be used for attachment of personal fall arrest equipment, shall be certified (or re-certified) by a qualified person for fall protection in accordance with ANSI Z359.1. Exiting horizontal lifeline anchorages shall be certified (or re-certified) by a registered professional engineer with experience in designing horizontal lifeline systems.

3.3.6 Horizontal Lifelines

Horizontal lifelines shall be designed, installed, certified and used under the supervision of a qualified person for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500).

3.3.7 Guardrail Systems

Guardrails shall consist of top and mid-rails, post and toe boards. The top edge height of standard railing must be 42 inches plus or minus 3 inches above the walking/working level. When mid-rails are used, they must be installed at a height midway between the top edge of the guardrail system and the walking/working level. Posts shall be placed no more than 8 feet apart (29 CFR 1926 and EM 385-1-1).

3.3.8 Rescue and Evacuation Procedures

When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. A Rescue and Evacuation Plan shall be prepared by the contractor and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. The Rescue and Evacuation Plan shall be included in the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

3.4 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Access to scaffold platforms greater than 6 m (20 feet) in height shall be accessed by use of a scaffold stair system. Vertical ladders commonly provided by scaffold system manufacturers shall not be used for accessing scaffold platforms greater than 6 m (20 feet) in height. The use of an adequate gate is required. Contractor shall ensure that employees are qualified to perform scaffold erection and

dismantling. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base. Work platforms shall be placed on mud sills. Scaffold or work platform erectors shall have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

3.4.1 Stilts

The use of stilts for gaining additional height in construction, renovation, repair or maintenance work is prohibited.

3.5 EQUIPMENT

3.5.1 Material Handling Equipment

a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.

c. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

3.5.2 Weight Handling Equipment

a. Cranes must be equipped with:

(1) Load indicating devices (LIDs) and a boom angle or radius indicator or load moment indicating devices (LMIs).

(2) Anti-two block prevention devices.

(3) Boom hoist hydraulic relief valve, disconnect, or shutoff (stops hoist when boom reaches a predetermined huge angle).

(4) Boom length indicator (for telescoping booms).

(5) Device to prevent uncontrolled lowering of a telescoping hydraulic boom.

(6) Device to prevent uncontrolled retraction of a telescoping hydraulic boom.

(7) Wind indicating device.

(8) Drum rotation indicator.

(9) Barge mounted mobile cranes shall be equipped with a load indicating device, a wind indicating device and a marine type list and trim indicator readable in one-half degree increments.

b. The Contractor shall notify the Contracting Officer 15 days in advance of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated. Contractor's operator shall remain with the crane during the spot check.

c. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturer's recommended procedures.

d. The Contractor shall comply with ASME B30.5 for mobile cranes, ASME B30.22 for articulating boom cranes, and ASME B30.8 for floating cranes and floating derricks.

e. The presence of Government personnel does not relieve the Contractor of an obligation to comply with all applicable safety regulations. The Government will investigate all complaints of unsafe or unhealthful working conditions received in writing from Contractor employees, federal civilian employees, or military officers.

f. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.

g. Under no circumstances shall a Contractor make a lift at or above 90% of the cranes rated capacity in any configuration.

h. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1 section 11 and ASME B30.5 or ASME B30.22 as applicable.

i. Crane suspended personnel work platforms (baskets) shall not be used unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Personnel shall not be lifted with a line hoist or friction crane.

j. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or crane cabs. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.

k. All employees shall be kept clear of loads about to be lifted and of suspended loads.

l. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.

m. The Contractor shall use cribbing when performing lifts on

outriggers.

n. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

o. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.

p. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto the crane cab in a location allowing easy reading by the operator while seated in the control station.

q. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Contracting Officer personnel.

r. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.

s. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.

3.5.3 Equipment and Mechanized Equipment

a. Equipment shall be operated by designated qualified operators. Proof of qualifications shall be kept on the project site for review.

b. Manufacture specifications or owner's manual for the equipment shall be on-site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Such additional safety precautions or requirements shall be incorporated into the AHAs.

c. Equipment and mechanized equipment shall be inspected in accordance with manufacturer's recommendations for safe operation by a competent person prior to being placed into use.

d. Daily checks or tests shall be conducted and documented on equipment and mechanized equipment by designated competent persons.

3.6 EXCAVATIONS

The competent person for excavations performed as a result of contract work shall be on-site when excavation work is being performed, and shall inspect, and document the excavations daily prior to entry by workers. The competent person must evaluate all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly. The competent person shall perform soil classification in accordance with 29 CFR 1926.

3.6.1 Utility Locations

Prior to digging, the appropriate digging permit must be obtained. All underground utilities in the work area must be positively identified by a private utility locating service in addition to any city locating service

and coordinated with the city utility department. Any markings made during the utility investigation must be maintained throughout the contract.

3.6.2 Utility Location Verification

The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. Digging within 0.61 m (2 feet) of a known utility must not be performed by means of mechanical equipment; hand digging shall be used. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 30.5 m (100 feet) if parallel within 1.5 m 5 feet) of the excavation.

3.6.3 Utilities with Concrete Slabs

Utilities located within concrete slabs or pier decks, and the like are extremely difficult to identify. The location must be coordinated with city utility department in addition to a private locating service. Outages on system utilities shall be used in circumstances where concrete chipping, saw cutting, or core drilling is required and utilities are unable to be completely identified.

3.6.4 Shoring Systems

Trench and shoring systems must be identified in the accepted safety plan and AHA. Manufacture tabulated data and specifications or registered engineer tabulated data for shoring or benching systems shall be readily available on-site for review. Job-made shoring or shielding shall have the registered professional engineer stamp, specifications, and tabulated data. Extreme care must be used when excavating near direct burial electric underground cables.

3.6.5 Trenching Machinery

Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file at the project site.

3.7 ELECTRICAL

3.7.1 Conduct of Electrical Work

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized

electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. In addition, provide electrical arc flash protection for personnel as required. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA.

3.7.2 Portable Extension Cords

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered and protected from damage. All damaged extension cords shall be immediately removed from service. Portable extension cords shall meet the requirements of NFPA 70.

3.8 CRYSTALLINE SILICA

Grinding, abrasive blasting, and foundry operations of construction materials containing crystalline silica shall comply with OSHA regulations, such as 29 CFR 1910.94, and USACE EM 385-1-1, Appendix C. The Contractor shall develop and implement effective exposure control and elimination procedures to include dust control systems, engineering controls, and establishment of work area boundaries, as well as medical surveillance, training, air monitoring, and personal protective equipment.

3.9 HOUSEKEEPING

3.9.1 Clean-Up

All debris in work areas shall be cleaned up daily or more frequently if necessary. Construction debris may be temporarily located in an approved location; however, garbage accumulation must be removed each day.

3.9.2 Falling Object Protection

All areas must be barricaded to safeguard employees. When working overhead, barricade the area below to prevent entry by unauthorized employees. Construction warning tape and signs shall be posted so they are clearly visible from all possible access points. When employees are working overhead all tools and equipment shall be secured so that they will not fall. When using guardrail as falling object protection, all openings shall be small enough to prevent passage of potential falling objects.

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SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization, (e.g. ASTM B 564 Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number.

ASTM INTERNATIONAL (ASTM)
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959
Ph: 610-832-9500
Fax: 610-832-9555
E-mail: service@astm.org
Internet: http://www.astm.org

U.S. ARMY CORPS OF ENGINEERS (USACE)
Order CRD-C DOCUMENTS from:
U.S. Army Engineer Waterways Experiment Station
ATTN: Technical Report Distribution Section, Services Branch, TIC
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Vicksburg, MS 39180-6199
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Fax: 601-634-2388
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Internet: http://www.wes.army.mil/SL/MTC/handbook.htm

Order Other Documents from:
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E-mail: pubs-army@usace.army.mil
Internet: http://www.usace.army.mil/publications

or http://www.hnd.usace.army.mil/techinfo/engpubs.htm

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
8601 Adelphi Road
College Park, MD 20740-6001
Ph: 866-272-6272
Fax: 301-837-0483
Internet: http://www.archives.gov

Order documents from:
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732 North Capitol Street, NW
Washington, DC 20401
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Fax: 202-512-2104
E-mail: contactcenter@gpo.gov
Internet: http://www.gpoaccess.gov

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USACE QUALITY CONTROL SYSTEM (QCS)

PART 1 GENERAL

1.1 Contract Administration

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor must use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

Administration
Finances
Quality Control
Submittal Monitoring
Scheduling
Import/Export of Data

1.1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record will also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.1.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01 32 01.00 10 PROJECT SCHEDULE, Section 01 33 00 SUBMITTAL PROCEDURES, and Section 01 45 01 USACE QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith will be included in the contract pricing for the work.

1.2 QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor will be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide QCS on CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government

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RMS Website as they become available.

1.3 SYSTEM REQUIREMENTS

The following is the minimum system configuration that the Contractor must have to run QCS:

QCS and QAS System

Hardware

IBM-compatible PC with 1000 MHz Pentium or higher processor

256+ MB RAM for workstation / 512+ MB RAM for server

1 GB hard drive disk space for sole use by the QCS system

3-1/2 inch high-density floppy drive

Compact Disk (CD) Reader 8x speed or higher

SVGA or higher resolution monitor (1024x768, 256 colors)

Mouse or other pointing device

Windows compatible printer. (Laser printer must have 4 MB+ of RAM)

Connection to the Internet, minimum 56k BPS

Software

MS Windows 2000 or higher

QAS-Word Processing software: MS Word 2000 or newer

Latest version of: Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher

Electronic mail (E-mail) MAPI compatible

Virus protection software that is regularly upgraded with all issued manufacturer's updates

1.4 RELATED INFORMATION

1.4.1 QCS User Guide

After contract award, download instructions for the installation and use of QCS from the Government RMS Internet Website. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.4.2 Contractor Quality Control(CQC) Training

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

1.5 CONTRACT DATABASE

Prior to the pre-construction conference, the Government will provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by using the Government's SFTP repository built into QCS import/export function. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.6 DATABASE MAINTENANCE

Establish, maintain, and update data in the QCS database throughout the duration of the contract at the Contractor's site office. Submit data updates to the Government (e.g., daily reports, submittals, RFI's, schedule updates, payment requests, etc.) using the Government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, e-mail or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA CD-ROM). The QCS database typically includes current data on the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

Contain within the database the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, deliver Contractor administrative data in electronic format.

1.6.1.2 Subcontractor Information

Contain within the database the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Assign each subcontractor/trade a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, deliver subcontractor administrative data in electronic format.

1. 6 . 1 .3 Correspondence

Identify all Contractor correspondence to the Government with a serial number. Prefix correspondence initiated by the Contractor's site office with "S". Prefix letters initiated by the Contractor's home (main) office with "H". Letters must be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

1.6.1.4 Equipment

Contain within the Contractor's QCS database a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.6.1.5 Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet,

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QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.6.1.6 Request For Information (RFI)

Exchange all Requests For Information (RFI) using the Built-in RFI generator and tracker in QCS.

1.6.2 Finances

1.6.2.1 Pay Activity Data

Include within the QCS database a list of pay activities that the Contractor must develop in conjunction with the construction schedule. The sum of all pay activities must be equal to the total contract amount, including modifications. Group pay activities Contract Line Item Number (CLIN); the sum of the activities must equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.6.2.2 Payment Requests

Prepare all progress payment requests using QCS. Complete the payment request worksheet, prompt payment certification, and payment invoice in QCS. Update the work completed under the contract, measured as percent or as specific quantities, at least monthly. After the update, generate a payment request report using QCS. Submit the payment request, prompt payment certification, and payment invoice with supporting data using the Government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, e-mail or a CD-ROM may be used. A signed paper copy of the approved payment request is also required, which will govern in the event of discrepancy with the electronic version.

1.6.3 Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements. Maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. Provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01 45 01 USACE QUALITY CONTROL. Within seven calendar days of Government acceptance, submit a QCS update reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.6.3.1 Daily Contractor Quality Control (CQC) Reports.

QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS must be the Contractor's official report. Summarize data from any supplemental reports by the Contractor and consolidate onto the QCS-generated Daily CQC Report. Submit daily CQC Reports as required by Section 01 45 01 USACE QUALITY CONTROL. Electronically submit reports to the Government within 24 hours after the date covered by the report. Also provide the Government a signed, printed copy of the daily CQC report.

1.6.3.2 Deficiency Tracking.

Use QCS to track deficiencies. Deficiencies identified by the Contractor

will be numerically tracked using QC punch list items. Maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. Regularly update the correction status of both QC and QA punch list items.

1.6.3.3 QC Requirements

Develop and maintain a complete list of QC testing and required structural and life safety special inspections required by the International Code Council (ICC), transferred and installed property, and user training requirements in QCS. Update all data on these QC requirements as work progresses, and promptly provide this information to the Government via QCS.

1.6.3.4 Three-Phase Control Meetings

Maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.6.3.5 Labor and Equipment Hours

Log labor and equipment exposure hours on a daily basis. This data will be rolled up into a monthly exposure report.

1.6.3.6 Accident/Safety Reporting

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. Regularly update the correction status of the safety comments. In addition, utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 300.

1.6.3.7 Features of Work

Include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.6.3.8 Hazard Analysis

Use QCS to develop a hazard analysis for each feature of work included in the CQC Plan. Address any hazards, or potential hazards, that may be associated with the work.

1.6.4 Submittal Management

The Government will provide the initial submittal register in electronic format. Thereafter, maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. Use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update must be produced using QCS. QCS and RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

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1.6.5 Schedule

Develop a construction schedule consisting of pay activities, in accordance with Section 01 32 01.00 10 PROJECT SCHEDULE. Input and maintain in the QCS database this schedule either manually or by using the Standard Data Exchange Format (SDEF) (see Section 01 32 01.00 10 PROJECT SCHEDULE). Include with each pay request the updated schedule.

1.6.6 Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data from RMS, and schedule data using SDEF.

1.7 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. Ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.8 DATA SUBMISSION VIA CD-ROM

The Government-preferred method for Contractor's submission of QCS data is by using the Government's SFTP repository built into QCS export function. Other data should be submitted using E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of CD-ROM for data transfer. Export data onto CDs using the QCS built-in export function. If used, submit CD-ROMs in accordance with the following:

1.8.1 File Medium

Submit in English required data on CD-ROM conforming to industry standards used in the United States.

1.8.2 CD-ROM Labels

Affix a permanent exterior label to each CD-ROM submitted. Indicate on the label in English, the QCS file name, full contract number, contract name, project location, data date, name and telephone number of person responsible for the data.

1.8.3 File Names

The files will be automatically named by the QCS software. The naming convention established by the QCS software must not be altered.

1.9 MONTHLY COORDINATION MEETING

Update the QCS database each workday. At least monthly, generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, meet with the Government representative to review the planned progress payment data submission for errors and omissions.

Make all required corrections prior to Government acceptance of the export

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file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, will be deemed sufficient for the purpose of notification.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

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CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D 3740	(2004a) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(2007) Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1110-1-12	(1994) Quality Management

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all design and construction operations, both onsite and offsite, and shall be keyed to the proposed design and construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be

responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 30 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Design and construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started. Where the applicable Code issued by the International Code Council calls for an inspection by the Building Official, the Contractor shall include the inspections in the Quality Control Plan and shall perform the inspections. The designer of Record shall develop a program for any special inspections required by the applicable International Codes and the Contractor shall perform these inspections, using qualified inspectors.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents subcontractors, designers of record, consultants, architect/engineers (AE), fabricators, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents subcontractors, designers of record, consultants, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities approved by the Contracting Officer shall be used.)

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

g. Procedures for tracking design and construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Additional Requirements for Design Quality Control (DQC) Plan

The following additional requirements apply to the Design Quality Control (DQC) plan:

(1) The Contractor's QCP Plan shall provide and maintain a Design Quality Control (DQC) Plan as an effective quality control program which will assure that all services required by this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, all documents shall be technically reviewed by competent, independent reviewers identified in the DQC Plan. The same element that produced the product shall not perform the independent technical review (ITR) . The Contractor shall correct errors and deficiencies in the design documents prior to submitting them to the Government.

(2) The Contractor shall include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. These completed checklists shall be submitted at each design phase as part of the project documentation. Engineer Regulation ER 1110-1-12 provides some useful information in developing checklists.

(3) The DQC Plan shall be implemented by an Design Quality Control Manager who has the responsibility of being cognizant of and assuring that all documents on the project have been coordinated. This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. The Contractor shall notify the Contracting Officer, in writing, of the name of the

individual, and the name of an alternate person assigned to the position.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of design and construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Postaward Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 7 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, a Design Quality Manager, and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall serve as a member of the CQC staff. The CQC System Manager, if qualified and if allowed by Section 00 73 00 may serve as the Safety and Health Manager or may be a separate position. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, shop drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain

these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management. The CQC system Manager may alternately be an engineering technician with at least 2 years of college and an ICC certification as a Commercial Building Inspector (Residential Building Inspector certification will be required for Military Family housing projects). In addition, the CQC system manager shall have a minimum of 5 years construction experience on construction similar to this contract. The CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties (except may also serve as Safety and Health Manager, if qualified and if allowed by Section 00 73 00). An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: electrical, mechanical, plumbing, civil, structural, environmental, and architectural.

These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; are not intended to be full time, but must be physically present at the construction site during work on their areas of responsibility, have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan. One person may cover more than one area provided that they are qualified to perform QC activities for the designated areas below and provided that they have adequate time to perform their duties.

Experience Matrix

	Area	Qualifications
a.	Civil	Graduate Civil Engineer or Construction Manager with 4 years experience in the type of work being performed on this project or technician with 5 yrs related experience
b.	Mechanical	Graduate Mechanical Engineer or Construction Manager with 4 yrs related experience or engineering technician with an ICC certification as a

Experience Matrix

	Area	Qualifications
		Commercial Mechanical Inspector with 5 yrs related experience
c.	Electrical	Graduate Electrical Engineer or Construction Manager with 4 yrs related experience or or engineering technician with an ICC certification as a Commercial Electrical Inspector with 5 yrs related experience
d.	Structural	Graduate Structural Engineer or Construction Manager with 4 yrs related experience or person with an ICC certification as a Reinforced Concrete Special Inspector and Structural Steel and Bolting Special Inspector (as applicable to the type of construction involved) with 5 yrs related experience
e.	Plumbing	Graduate Mechanical Engineer or construction management with 4 yrs related experience, or person with an ICC certification as a Commercial Plumbing Inspector with 5 yrs experience
f.	Concrete, Pavements and Soils	Materials Technician (person while performing tests) with 2 yrs experience for the appropriate area
g.	Testing, Adjusting and Balancing (TAB) Personnel	Specialist must be a member of AABC or an experienced technician of the firm certified by the NEBB (present while testing, adjusting, balancing)
h.	Design Quality Control Manager	Registered Architect or Professional Engineer (not required on the construction site)
i.	Registered Fire Protection	Engineer with 4 yrs related experience

Experience Matrix

Area	Qualifications
j. Telecommunications	Telecommunications design must be performed and stamped by a Registered Communications Distribution Designer (RCDD) with 2 yrs related experience or person with 5 yrs related experience. The installers assigned to the installation of the telecommunications system or any of its components shall have a minimum of 3 yrs experience in the installation of the specified copper and fiber optic cable and components.

3.4.4 Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered at Fairbanks.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01 33 00 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.

b. A review of the contract drawings.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. A review of the appropriate activity hazard analysis to assure safety requirements are met.

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.

k. The Government shall be notified at least 24 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor may elect to use a laboratory certified and accredited by the Concrete and cement Reference Laboratory (CCRL) or by AASHTO Materials Reference Laboratory (AMRL) for testing procedures that those organizations certify. The Contractor shall perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with contract requirements.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of $500 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, f.o.b., at the following address:

For delivery by mail: TBD

For other deliveries: TBD

Coordination for each specific test, exact delivery location, and dates

will be made through the Area Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the SPECIAL CONTRACT REQUIREMENTS Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers using government-provided software, QCS (set Section 01 45 02.00 10). The report

includes, as a minimum, the following information:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.

g. Offsite surveillance activities, including actions taken.

h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

i. Instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel. The Contractor may submit these forms electronically, in lieu of hard copy.

3.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order

stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

3.11 ATTACHMENT

CQC Report

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ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2003) Safety -- Safety and Health Requirements
WETLAND MANUAL	Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328	Definitions of Waters of the United States
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171 - 178	Hazardous Materials Regulations

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes

management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners,excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Land Application for Discharge Water

The term 11Land Application11 for discharge water implies that the Contractor shall discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the 11waters of the United States11 shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.5 Pesticide

Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.6 Pests

The term 11pests11 means arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable

1.2.7 Surface Discharge

The term 11Surface Discharge11 implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or 11waters of the United States11 and would require a permit to discharge water from the governing agency.

1.2.8 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.9 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically

adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

1.6 SUBMITTALS

Government approval is required for submittals with a [11G11] designation; submittals not having a [11G11] designation are for information only. When used, a designation following the [11G11] designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G

The written site specific environmental protection plan.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the site, submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern must be defined within the Environmental Protection Plan as outlined in this section. Address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but are considered necessary, must be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan

including any reporting requirements; and methods for administration of the

Contractor's Environmental Plans. The Environmental Protection Plan must be current and maintained onsite by the Contractor.

1.7.1 Compliance

No requirement in this Section will relieve the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor will be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

Include in the environmental protection plan, but not limit it to, the following:

a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.

b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.

c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.

d. Description of the Contractor's environmental protection personnel training program.

e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan must include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. A Storm Water Pollution Prevention Plan (SWPPP) may be substituted for this plan.

f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.

g. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

i. Drawing showing the location of borrow areas.

j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 302, 40 CFR 355, and/or regulated under

State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:

1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer and the local Fire Department in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.

3. Training requirements for Contractor's personnel and methods of accomplishing the training.

4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subContractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste generated and total amount of waste diverted in cubic yards or tons along with the percent that was diverted.

l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with

Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge.

p. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer.

q. A pesticide treatment plan shall be included and updated, as information becomes available. The plan shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional specific requirements.

1.7.3 Appendix

Copies of all environmental permits permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached, as an appendix, to the Environmental Protection Plan.

1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, and AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.9 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.10 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations.

3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify any land resources to be preserved within the

work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into unclear areas shall be removed by the Contractor.

3.2.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.2.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install temporary and permanent erosion and sediment control best management practices (BMPs) as specified in this Contract. BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. The Contractor's best management practices shall also be in accordance with the National Pollutant Discharge Elimination System (NPDES) Storm Water Pollution Prevention Plan (SWPPP) of this Contract. Any temporary measures shall be removed after the area has been stabilized.

3.2.4 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation approved. Erosion and sediment controls shall be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor.

For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.3.1 Diversions, and Dewatering Operations

See SECTION 02220: DREDGING, EXCAVATION AND DISPOSAL

3.3.2 Stream Crossings

Stream crossings shall allow movement of materials or equipment without violating water pollution control standards of the Federal, State, and local governments. Construction of stream crossing structures shall be in compliance with Clean Water Act Section 404.

3.3.3 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

3.4 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3 .4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphalt batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and

control to minimize environment damage by noise. The Contractor shall comply with the provisions of the State of Alaska rules.

3.4.4 Burning

Burning will not be allowed on the project site unless specified in other sections of the specifications.

3.5 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.5.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.

3.5.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

3.5.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262 and shall manage and store hazardous waste in accordance with the Project Office hazardous waste management plan. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berms or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall transport Contractor generated hazardous waste off Government property within 60 days in accordance with the Environmental Protection Agency and the Department

of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

3.5.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. Storage of fuel on the project site shall be accordance with all Federal, State, and local laws and regulations.

3.5.5 Waste Water

Disposal of waste water will be as specified below.

a. Waste water from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water in accordance with all Federal, State, Regional and Local laws and regulations.

b. For discharge of ground water, the Contractor shall surface discharge in accordance with all Federal, State, and local laws and regulations.

3.6 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

3.7 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

The Contractor shall maintain an inventory of non-hazardous solid waste diversion and disposal of construction and demolition debris. The Contractor shall submit a report to through the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that non- hazardous solid waste has been generated. The following shall be included in the report:

a. Construction and Demolition (C&D) Debris Disposed = _____ in cubic yards or tons, as appropriate.

b. Construction and Demolition (C&D) Debris Recycled = _____ in cubic yards or tons, as appropriate.

c. Total C&D Debris Generated = _____ in cubic yards or tons, as appropriate.

d. Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) = _____ in cubic yards or tons, as appropriate.

3.8 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area are shown on the drawings. The Contractor shall protect these resources and shall be responsible for their preservation during the life of the Contract. If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, paving, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.9 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.10 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.11 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.12 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers,

and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.13 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --

SECTION 35 20 23.

MECHANICAL DREDGE SILENT INSPECTOR

PART 1 GENERAL

1.1 DESCRIPTION

The work under this contract requires use of the Silent Inspector (SI) System to monitor removal and relocation of material, and report and manage the data. This performance based specification identifies required output and precision and instrumentation requirements. The requirements may be satisfied using equipment and technical procedures selected by the Contractor.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that responsible for review of the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00, "SUBMITTAL PROCEDURES":

SD-01 Preconstruction Submittals

Dredge Plant Instrumentation Plan; G, SAM-OP-J

SD-07 Certificates

Letter of Silent Inspector Certification; G, OP

1.3 PAYMENT

No separate payment will be made for installation, operation and maintenance of the SI system as specified herein for the duration of the dredging operations; all costs in connection therewith will be considered a subsidiary obligation of the Contractor and covered under the contract unit prices in the bidding schedule.

1.4 SILENT INSPECTOR CERTIFICATION

The Contractor is required to have a current Silent Inspector Certification for the dredge SI system used under this contract, at the time of issuance of Notice to Proceed. Certification shall be based on an on-site dredge inspection conducted by Silent Inspector Support Center personnel.

The Inspection shall include:

- A series of data quality checks as described in paragraph 3.5 "Compliance Inspection and Quality Assurance Checks",
- Verification of data acquisition and transfer (Paragraph 3.2),
- Review of the Dredge Plant Instrumentation Plan (DPIP) as described in Paragraph 1.5

A Silent Inspector Certification is valid for one year from the date of certification. The owner or operator of the dredge shall contact the SI Support Center at 1-877-840-8024 on an annual basis to schedule re-inspection, allowing ample time for recertification, and coordinate this with all local authorities. The Contractor shall have personnel, who are familiar with the SI system instrumentation and have the expertise to recalibrate sensors, on site during the inspection. Re-inspection is required for any yard work which changes sensor type or location. These changes will be reported in the sensor log section of the DPIP. If the SI system has been disabled or turned off, re-calibration of all sensors and concurrent re-certification will be required. This is not to be construed that data must be continually transmitted if the dredge is between jobs or engaged in a non-government project which does not require certification.

1.5 DREDGE PLANT INSTRUMENTATION PLAN (DPIP)

The Contractor shall have a DPIP on file with the National SI Support Team. This document shall describe how sensor data will be collected, how quality control on the data will be performed, and how sensors/data reporting equipment will be calibrated and repaired if they fail. A description of computed dredge specific data and how the sensor data will be transmitted to the Silent Inspector Database shall also be included. The Contractor shall submit to the SI Support Center any addendum or modifications made to the plan subsequent to its original submission, prior to Notice to Proceed. The Contractor shall also maintain a copy of the DPIP on the dredge which is readily accessible to Government personnel at all times.

The DPIP shall include the following as a minimum:
(DPIP must have table of context in the following order)

- Dredging Company
  - Dredge Point of Contact
  - Phone Number
- Dredge Monitoring System Provider
  - Dredge Monitoring System Point of Contact
  - Telephone Number
- Dredge Name/ID
- Methods for sensor repair, replacement, installation, modification or calibration
- Data reporting equipment

- Procedure for providing sensor data/computed data to SI Database via e-mail
- System telemetry
- Dimensioned Drawings of the Dredge
  - Typical plan and profile view of the dredge showing: o Locations of required sensors referenced to:
    - fore and aft perpendicular and/or bucket teeth and pivot.
    - each other

    o overall dredge and bucket dimensions
- Description of how the UTC time stamp is collected
- Positioning system
  - Brand name and specifications
  - Sampling rates for data acquisition
  - Any calculation done external to the instrumentation
  - Certificates of calibration and/or manufacturer certificates of compliance
- Vertical correction
  - Description of how tidal/river stage information is entered into the data string.
- Bucket Depth
  - Brand name and specifications for instrumentation
  - Sampling rates for data acquisition
  - Any calculation done external to the instrumentation
  - Certificates of calibration and/or manufacturer certificates of compliance
  - Method used to zero the instrumentation at the surface of the water
- Bucket Characteristics
  - Bucket types
  - Number of buckets
  - Capacity
- Bucket Status
  - Criteria and methods used for determining dig/dump
  - Any associated instrumentation specifications
- Contractor. Data
  - Backup frequency
  - Backup method
  - Post processing
- Archive capability
- Documentation of :
  - Test methods used by the contractor to provide quality control of data
  - Verification that the reported values are applicable for the sensor and application

- Log of sensor performance and modifications
- End of job data archive log

Any changes to the computation methods during the dredging contract shall be approved by the Silent Inspector Support Center prior to their implementation.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 SPECIFICATIONS FOR REPORTED DATA

The contractor shall provide, operate and maintain all hardware and software to meet these specifications. The Contractor shall be responsible for replacement, repair and calibration of sensors and other necessary data acquisition equipment needed to supply the required data.

Repairs shall be completed within 48 hours of any system/sensor failure. Upon completion of a repair, replacement, installation, modification or calibration the Contractor shall notify the Contracting Office's Representative. The Contracting Office's Representative may request re-calibration of sensors or other hardware components at any time during contract execution as deemed necessary.

The Contractor shall keep a log of sensor repair, replacement, installation, modification and calibration in the dredge's onboard copy of the DPIP. The log shall contain a three-year history of sensor maintenance which includes: the time of sensor failures (and subsequent repairs), the time and results of sensor calibrations, the time of sensor replacements, and the time that backup sensor systems are initiated to provide required data. It shall also contain the name of the person responsible for the sensor work. Only sensors that affect the data reported in paragraph 3.3.6, "Reporting Data Metadata", are affected by this logging requirement.

3.1.1 Date and time

The date and time shall be reported to the nearest second and referenced to UTC time based on a 24 hour format. The reported time is the time the measurements were taken.

3.1.2 Horizontal Positioning of the Bucket

Horizontal positioning of the bucket shall be obtained using a positioning system operating with a minimum accuracy level of 1 to 3 meters horizontal Circular Error Probable (CEP). Position shall be reported as Latitude/Longitude WGS 84.

3.1.3 Vertical Correction

Vertical correction data shall be obtained using appropriate equipment to give the water level with an accuracy of + 0.1 feet and a resolution of 0.01 feet. Elevation values for tide or river-stage above the project datum described in the dredging specification shall be entered with a positive sign, and those below project datum shall be entered with a negative sign.

3.1.4 Bucket Depth *(optional on jobs of less than 200,000 cyds unless material conditions warrant)*

The bucket depth shall be the distance from the surface of the water to the teeth of the bucket when closed. An accuracy of + 0.5 feet with values recorded to the nearest 0.1 feet. The values will be positive below the surface and negative above the surface of the water. If accuracy is not able to be maintained out of the water, depths shall be reported as "Null".

3.1.5 Target Depth

The target depth is the depth below the surface of the water that has been computed to dredge to. This shall be recorded to the nearest 0.1 feet. Data will be relative to the water surface.

3.1.6 Bucket Status

Dig/Dump condition of bucket status shall be obtained. The dig condition would be when the bucket contains material and dump condition means the bucket does not contain material.

3.1.7 Bucket Volume

The volume of the bucket shall be reported in cubic yards. If the bucket is changed during a job then the bucket volume should change accordingly.

3.1.8 Bucket Type

The bucket type shall be listed in the data as a string. Examples of bucket types are Clam Shell, Environmental, Excavator and Dragline.

3.2 DATA MONITORING

Onboard sensors will continually monitor dredge conditions, operations and efficiency and route this information into the shipboard dredge-specific system computer (DSS) to assist in guiding dredge operations. Portions of this Contractor-collected information shall be transmitted to the SI Database via the

internet, but the Contracting Officer's Representative shall also have access to a visual display of the DSS computer's operational screen onboard the dredge.

3.2.1 Data Monitoring Computer Display

The contractor shall provide a separate monitor for the Contracting Officer's Representative, at a minimum displaying the dredge production information required within this specification. The monitor shall be in a dry, enclosed area aboard or nearby the dredge, separate from the operator's cab, and located in a position suitable for data viewing to the satisfaction of the Contracting Officer's Representative..

3.3 DATA REPORTING REQUIREMENTS

Contractor collected information shall be transmitted to the SI Database. The parameters which shall be reported to the SI Database include: date and time, bucket position and status, vertical correction and datum, bucket depth* and bucket characteristics.

** optional on jobs less than 200,000 cysts depending on material*

3.3.1 Data Reporting Interface

The contractor may select any commercial satellite, cellular phone, or other data communications systems available to transmit the data to the SI Database via the Internet in the required mail message format. The data transition process from the dredge to the SI Database must be automated. The data may be sent from the dredge directly to the SI Database or to a shore based computer. Data transmitted to the SI Database should be raw data; any processing of the data conducted shore side shall be done using an automated software or programming routine. As per section 1.5, a description of this process shall be included in the DPIP.

3.3.2 Data Measurement Frequency

Data shall be logged as a series of events. Each event will consist of a data set containing dredge information as per section 3.1. There are two types of triggers for an event; dig/dump condition change and time lapse since last event. The time lapse trigger is 5 minutes since the last event. A standard data string should be recorded within one second of an event trigger.

3.3.3 Data Reporting

The system shall report this event history via Simple Mail Transport Protocol (SMTP) e-mail message to the SI Database Server. For this contract data will be reported _____. on a load basis (all data collected since last transmission sent at the completion of loading a scow) – OR - at regular intervals

such that the time from when the data is collected until the time it is reported does not exceed 6 – **OR** 12 – **OR** - 24 hours.

The dredge shall continuously transmit data to the SI Database from mobilization until the final post-dredging survey has been accepted by the USACE.

3.3.4 Mail Message Format

The Simple Mail transport Protocol (Internet FRC 2821) shall be used to report data to the SI Database. The mail message shall have the following contents (Internet RFC 2822):

To: sidatatransfer@usace.army.mil
From: contractor's email address
Subject: SISDATA Transfer
Attachment: SI MDATA html file

Mail message start of body
SIMDATA
SI Mech Data Transfer
Blank line

Optional additional annotations from the Contractor – all data after the blank line are ignored.

End of message

3.3.5 Mail Attachment File Format

The attached data file shall be a MIME encoded (Internet RFC 2045) Extensible HyperText Markup Language (W3C standard XHTML 1.1) document. Any length of data may be included, but the file attachment size should not exceed six Megabytes. Only the html, table, tr, th, td, h2, h3 and body tags are permissible. The attached file may be compressed as a zip file.

Line Breaks and spaces are added for readability here, but the carriage return, line feed character combination is only added to delineate records (MECH DREDGING DATA tag) for actual data transmission.

```
<?xml version="1.0"?>
<MECH_DREDGING_DATA>
<DREDGE_NAME> string </DREDGE_NAME>
  <MECH_DATA_RECORD>
<DATE_TIME> time date string </DATE_TIME>
<BUCKET_X coord_type = "(LL)"> floating point string </BUCKET_X>
<BUCKET_Y coord_type = "(LL)"> floating point string </BUCKET_Y>
<VERT_CORRECTION> floating point string </VERT_CORRECTION>
```

<BUCKET_DEPTH>floating point string</BUCKET_DEPTH>
<TARGET DEPTH>floating point string </TARGET_DEPTH>
<BUCKET_STATUS>bucket status string </BUCKET_STATUS>
<BUCKET_VOL>floating point string </BUCKET_VOL>
<BUCKET_TYPE>bucket type string </BUCKET_TYPE>
</MECH_DATA_RECORD>
</MECH_DREDGING_DATA>
Carriage return — ASCII value 13
Line Feed — ASCII value 10

3.3.6 Reporting Metadata

Data shall be reported to the SI database using the tags and criteria specified in the following table:

Data Tag	Tag Notes
BUCKET _X	Longitude in decimal degrees. West Longitude values are reported as negative. The attribute coord_type shall be LL. See section 3.1.2
BUCKET _Y	Latitude values are to be reported in decimal degrees. Northerly Latitude values are reported as positive. The attribute coord_type shall be LL . See section 3.1.2
DATE TIME	mtn/dd/yyyy hh:mm:ss defined as UTC time of the measurement. All of the measurements should have occurred within one second of this reported time. See section 3.1.1
VERT CORRECTION	Water level elevation reported in feet; positive above project datum, negative below. See section 3.1.3
BUCKET DEPTH	Bucket bite depth reported in feet. Depth values are positive below the water surface. See section 3.1.4
TARGET DEPTH	Target bucket bite depth reported in feet. Depth values are positive below the water surface. See section 3.1.5
BUCKET STATUS	Dig/Dump status of the bucket. See section 3.1.6
BUCKET VOL	Volume of the currently used bucket reported in cyds. See Sec 3.1.7
BUCKET TYPE	String describing bucket type currently in use, example; Clamshell, Environmental, Excavator, Dragline, etc... See Sec 3.1.8

3.3.7 Contractor Data Backup

The contractor shall maintain an archive of all data sent via SMTP to the SI Database. The Contracting Officer's Representative may require (at no increase to the contract price) that the Contractor provide a copy of these data covering specified time periods. The data shall be provided on PC format USB flash drive, CD-ROM , file transfer protocol (ftp) upload, or other storage medium acceptable to the Contracting Officer's

Representative. At the end of the dredging contract the Contractor is responsible for contacting the national SI Support Center prior to discarding the data to ensure all data have been appropriately archived. The person who made the call, the date of the call, and the representative who gave permission to discard the data should be recorded in a separate section at the end of the Contractor's copy of the DPIP.

3.3.8 Data Reporting Example


```
<?xml version="1.0"?>
<MECH DREDGING_DATA>
<DREDGE_NAME>Gov 1 </DREDGE NAME>
<MECH_DATA RECORD>
 <DATE_TIME>04/11/2006 13:12:05</DATE_TIME>
<BUCKET_X coord_type = "LL">10.123345</BUCKET_X>
<BUCKET_Y coord_type = "LL">-80.123333</BUCKET_Y>
<VERT_CORRECTION>-0.1<NERT_CORRECTION>
<BUCKET DEPTH>55.10</BUCKET_DEPTH>
<TARGET_DEPTH>55.10</TARGET_DEPTH>
<BUCKET STATUS>Dig</BUCKET_STATUS>
<BUCKET VOL>30</BUCKET_VOL>
<BUCKET TYPE>Clamshell</BUCKET TYPE>
</MECH DATA RECORD>
</MECH DREDGING DATA>
<cr>
<lf>
```


3.4 PERFORMANCE REQUIREMENTS

The Contractor's Silent Inspector system shall be fully operational at the start of the dredging operations. To meet contract requirements for operability, the Contractor's system shall provide a minimum 85 percent data return and be 95 percent compliant with DPIP requirements. Data return percentage is defined as the total number of quality records sent, divided by the total possible number of records that could be sent by a system in good working order. Quality data strings are considered to be those providing accurate values for at least 8 of the 9 parameters reported. DPIP compliance is determined by percent of items listed in section 1.5 to be at minimum compliance. After fifty percent project completion, combined percentage of data return and DPIP compliance should equal 95 percent or better. If repairs necessary to restore the required percent data return are not made within 48 hours, or if the Contractor fails to report required data within the specified time window for dredge measurements (see paragraph 3.3.2 "Data Measurement Frequency" & 3.3.3 "Data Reporting"); the system will be declared not fully operational, and the Contractor will be assessed liquidated damages equivalent to the additional oversight hours that would be required for Corps personnel to be on site from the first full day after the system is deemed not

operational through to the time when the system is returned to operational status. For this contract, the liquidated damages shall be $_____ per day.

3.5 COMPLIANCE INSPECTION AND QUALITY ASSURANCE CHECKS

Quality assurance checks are required prior to the commencement of dredging, and at the discretion of the Contracting Officer's Representative periodically throughout the duration of the contract.

3.5.1 Bucket Status Check

The Contracting Officer's Representative will document the status of the bucket used to determine the Dig/Dump condition of the dredge.

3.5.2 Bucket Depth Check

The Contracting Officer's Representative may require periodic calibration checks of the reported bucket depth over a calibration point at the project site. The Contracting Officer's Representative may also use direct means such as tape measures, sounding lines, and pressure sensors to directly measure bucket depth. The Contractor shall have on the dredge a clearly readable steel tape, chain, or wire graduated to a minimum of 1 foot increments. This tape or chain shall be capable of measuring the depth below water surface of the low fixed point of the bucket with sufficient length to measure 5 feet below the maximum project depth.. The Contracting Officer's Representative will review the bucket depth data to insure that the system is operating within acceptable accuracy, directing the contractor to re-calibrate or repair system components as necessary. Calibration delays are at the contractor's expense and do not warrant reimbursable time or cost by the government.

3.5.3 Position Check

During inspection the reported bucket position will be verified by comparison with readings from a handheld GPS receiver. Throughout the contract, the Contracting Officer's Representative will periodically verify positions by comparing readings from an independent GPS.

3.6 LIST OF ITEMS PROVIDED BY THE CONTRACTOR

DPIP	Sec 1.4 Dredge Plant Instrumentation Plan
SI SYSTEM	
Sensor Instrumentation	Sec. 3.1 Specifications for Reported Data
Computer Monitor	Sec. 3.2.1 Data Monitoring Computer

	Display
DREDGE DATA	
Event documentation	Sec. 3.3.2 Data Measurement Frequency
Data reports	Sec. 3.3.3 Data Reporting
QA EQUIPMENT ON DREDGE	
Bucket depth chain	Sec. 3.5.2 Bucket Depth Check

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SECTION 35 20 24.00 29

MAINTENANCE DREDGING

PART 1 GENERAL

1.1 WORK COVERED

Dredging shall include removal and disposal of all material as specified herein or indicated on the drawings. All dredging and disposal shall be accomplished in accordance with EM 1110-2-5025, Dredging and Dredged Material Disposal.

1.2 CHARACTER OF MATERIALS

1.2.1 Barge Facility and North and South Extension

All materials to be initially dredged in the North and South Extension areas and the Barge Berth area are very hard virgin materials as characterized by the attached GEOTECHNICAL FINDINGS REPORT, Anchorage Harbor Deepening, Port of Anchorage, Alaska, June 2008, and the Trial Dredging Report, dated November 2008. Large boulders are visible within the limits of this contract, i.e., seaward of the proposed Barge Facility and North Extension. Dozens of additional large to very large boulders should be anticipated down to at least -40 feet MLLW for the North and South Extensions, and -30 feet MLLW for the Barge Berths.

It is anticipated that shoal materials will be continuously deposited within the newly dredged areas, i.e., after removal of virgin materials. It is also anticipated that these shoal materials will be similar in composition and quantities experienced within the annual maintenance boundary seaward of the existing dock structure (not in this contract). Such deposits may vary from loose to very-dense cohesive materials that may require some mechanical means of dislodging the material from any dump scow

used on this project. Any recoverable debris shall be hauled to a suitable disposal facility.

1.2.2 Existing Port

- Above Max. Payline, Loose to very-dense cohesive sandy-silty-clay or sandy-clayey-silt

- Varying thicknesses of undisturbed stiff to very stiff blue-gray clay, dense to very dense sands, and coarse sandy gravel below Maximum Payline.

- Minor debris may be encountered along the dock face.

Areas A, B, C, and D, as shown on the drawings, are composed primarily of silt, clay, and sand in various proportions. Deposits vary from loose to very-dense material. Debris such as wire, cable, steel rails, concrete anchor blocks, steel drill casing, equipment from ship decks, scrap iron and chunks of ice or frozen silt may be encountered. Previous dredging experience indicates that the material above the maximum pay line consists primarily of firm, cohesive sandy-silty-clay or sandy-clayey-silt. A relatively coarse sandy gravel formation of varying thickness has been encountered below the maximum pay-line. Previous dredging in area A has been accomplished to a depth not lower than -37 feet MLLW. Undisturbed stiff to very stiff blue-gray clay, dense to very dense sands, and gravelly sands may be encountered below the maximum pay line. Previous dredging in areas B, C, D has been accomplished to a depth generally not lower than -39 feet MLLW. The material has stuck to the sides of the dump scows and hopper bins. Some mechanical means of dislodging the material may be required. Additional data showing previous dredging records are available for examination in the office of the Alaska District Engineer. Local,

minor variations and some debris are to be expected, and if encountered shall not be considered materially different within the scope of DIFFERING SITE CONDITIONS Clause of the CONTRACT CLAUSES. Any cobbles, boulders, and other debris dropped by winter ice pack shall be removed. Any recoverable debris shall be hauled to a suitable disposal facility.

Historically, shoaling of 3,000 to 19,000 cubic yards per day occurs within the project area.

1.3.2 Material Properties

Gradations from previous dredging operations show the material above the maximum pay-line to be sandy-silty-clay or sandy-clayey-silt with low plasticity (ML) and 90 to 95 percent by weight of the material passing the No. 200 sieve. Dry densities were determined to be between 85 and 105 pounds per cubic foot and moisture content to be 20 to 25 percent.

1.2.3 Shoaling Rates

It is anticipated that shoaling of 3,000 to 19,000 cubic yards per day may occurs within the project area after the removal of virgin materials. Deposition and/or scour rates are not known for the existing condition seaward of the Barge Facility and North Extension.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 DREDGING

3.1.1 General

All dredging shall be performed within the dredging limits to the depths and grades shown on the drawings, and established by the Contracting

Officer subsequent to the pre-dredge survey according to SECTION 01 19 40.00 29, SPECIAL ITEMS, paragraph SURVEYS. Any contours shown on the drawings and Exhibits are approximate. Dredging within 4 feet of any structure will not be allowed.

3.1.2 Excessive Dredging

DRAFT

If the Contracting Officer determines that over-dredging results in incipient danger to the foundations of proposed or adjacent structures, the Contractor will be required to restore such dredged material with material approved by the Contracting Officer to the established limits of project dredging without additional cost to the Government. The Contractor shall obtain the backfill materials from its own source.

3.2 DISPOSAL OF DREDGED MATERIALS

3.2.1 Disposal Operations

Except as otherwise authorized by the Contracting Officer in writing, no dumping of dredged materials dredged by clamshell shall be done unless a representative of the Contracting Officer is present at the time. Any material dredged by clamshell that is deposited without a representative of the Contracting Officer present will not be paid for. The Contractor shall assume all risks in dredged material disposal operations. Any material that is deposited elsewhere than in places designated or approved by the Contracting Officer will not be paid for and the Contractor may be required to remove such misplaced material and deposit it where directed, at its expense.

3.2.2 Government-Furnished Disposal Area

The dredged materials shall be transported and deposited in the open water disposal site shown on the contract drawings unless an alternate disposal area is approved by the Contracting Officer. In the event that a later determination is made that boulders are not to be disposed of in the open water disposal site, a change order will be processed prior to boulder removal. The top of the dredged material in the open water disposal area shall not be higher than -55 feet MLLW.

3.3 ATTACHMENTS

Findings of No Significant Impact (FONSI) and Environmental Assessment

Alaska Department of Environmental Conservation

Alaska Department of Governmental Coordination

Corps of Engineers Amended Dredging Requirements

GEOTECHNICAL FINDINGS REPORT

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SECTION 35 22 24.00 29

HOPPER DREDGE SILENT INSPECTOR

PART 1 GENERAL

1.1 INTRODUCTION

The Silent Inspector (SI) for Hopper Dredges is a system that can monitor dredge position, dredge state, compute dry tonnage, and report and manage the data for Corps of Engineers dredging contracts. This specification defines the data collection needs of the Contracting Officer for managing the present and proposed future contracts whereby the Government will measure and compensate the contractor based on performance. Most of the required data parameters are currently available through existing sensors on industry hopper dredges. The collection and recording of the data in standard format will afford timely analysis of these data for dredge performance indicators. On unit priced contracts, SI will be used to verify parameters and assist in evaluating claims.

It is the spirit and intent of this section of the specifications to define: a) the data collection needs for computing tons dry solids, and b) those data to be used as a pay-for-performance indicator in future hopper dredging contracts within the Alaska District, and for other potential applications by the Corps of Engineers.

Additionally, the data will assist the CONTRACTING OFFICER or his/her representative with contract administration and lessen government manpower allocations for continuous inspection, and meet ever increasing environmental monitoring requirements established by the responsible agencies. The SI system collects and records measurements from shipboard sensors, calculates the dredging activities and the weight of the recovered material, and displays this information with standard reports and graphical displays. Recorded data are also automatically backed up, and later archived to allow transfer of the data to other locations.

The system consists of sensors connected to two primary components: a dredge-specific system component (DSS), and a ship-based component Dredge Monitoring Computer (DMC) (CONTRACTING OFFICER or his/her representative's computer). The DSS (Dredge Specific System) collects sensor data, checks these data against acceptable ranges, computes the status of the dredging pumps (on/off) and other equipment and sends the data via serial link to the Ship Server. The DMC attaches the dredge name and contract/permit number to the DSS provided data, and inserts data into the system's central database. The DMC maintains the system's central database, accepting data in near-real time from a DSS. The DMC then reviews those data, computes the present dredging activity being performed and the amount of material recovered, and produces reports (trip, daily) and graphical displays of the data. Additional information concerning the dredging project, the dredges used, and location of the dredging and disposal areas are also inserted into the system database.

1.2 PAYMENT

The system shall be operational at the start of dredging. The Contractor shall include all costs for this system within the Lump Sum price for [11]Hopper Dredge Silent Inspector[11].

If the system is not operational after 15 days after the Notice to Proceed, or if the system becomes inoperable for a period of time greater than allowed within this section, the dredge quantity unit price of the material dredged will be reduced to 80% of the original bid price until the system is fully operational. Installation of the system shall not relieve the contractor of the requirements within the paragraph entitled 11Delivery of Plant11 located in the Special Contract Requirements Section.

1.3 DREDGE PLANT INSTRUMENTATION PLAN

The contractor shall develop a Dredge Plant Instrumentation Plan (DPIP) that shows how the contractor will gather sensor data, perform quality control on those data, calibrate and repair sensors/data reporting equipment when they fail, and distribute the sensor data and computed dredge specific data to the CONTRACTING OFFICER or his/her representative's computer via a standard interface. The contractor shall keep a log of sensor problems and repairs. Re-calibration may be directed by the Contracting Officer or his/her representative at any time during contract execution as deemed necessary. No recalibration or adjustments to the calibration controls shall be performed in the absence of the CONTRACTING OFFICER or his/her representative. Physical documentation of the calibration procedures and corresponding printed verification data shall be provided for every calibration event.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 SENSOR SPECIFICATIONS

The contractor shall provide, operate and maintain all hardware and software to meet the following specifications.

3.1.1 Slurry Densities of Port and Starboard Dragarms

The slurry density of each dragarm shall be recorded by a density-metering device approved for use by the CONTRACTING OFFICER or his/her representative and calibrated according to the manufacturer's specifications prior to commencement of work and documented in the DPIP.

3.1.2 Slurry Velocities of Port and Starboard Dragarms

The slurry velocities of each dragarm should be obtained by a flow-metering device approved for use by the CONTRACTING OFFICER or his/her representative and calibrated according to the manufacturer's specifications prior to commencement of work and documented in the DPIP. A magnetic flow-metering device calibrated according to manufacturer's specifications prior to commencement of work is the preferred flow-metering device. The slurry velocity shall be obtained using the same pipeline inside diameter as the slurry density measurement.

3.1.3 Draghead Depths

The depth of each draghead (relative to the water surface) shall be obtained with a minimum accuracy of + 1/2 foot with values recorded to the nearest 1/10 foot. Conventional bubbler or other dragarm measuring systems may be used to provide both draghead depths, but their operation and accuracy must be described in detail in written form and included in the DPIP for approval prior to dredging. Draghead depth data shall be relative to the water surface level without tidal elevation adjustments.

3.1.4 Horizontal Positioning

Horizontal dredging equipment positioning shall be provided in Lambert State Plane coordinates based on North American Datum 1983. Horizontal positioning shall be obtained using differential Global Positioning System (DGPS) equipment operating with a minimum accuracy level of 1 3 meters horizontal Circular Error Probable (CEP). Differential Correction broadcasts will be furnished 24 hours/day by the Government in standard RTCM SC 104 ver 2.0 output. Horizontal positioning shall be recorded to the nearest whole foot when provided in State Plane coordinates.

3.1.5 Vessel Heading and Course

Vessel headings shall be provided using industry standard equipment described in written form and approved by the CONTRACTING OFFICER or his/her representative prior to dredging. Calibration shall be performed according to manufacturer's specifications prior to commencement of work and documented in the DPIP. The contractor shall provide dredge compass heading with values from 000 (true north) to 359 degrees referenced to a clockwise positive direction convention. Furthermore, the contractor shall provide dredge course over ground with values from 000 (true north) to 359 degrees referenced to a clockwise positive direction convention.

3.1.6 Draft

Fore and Aft draft measurements shall be reported to the nearest 1/100-foot from the hopper dredge's keel. Industry standard bubbler systems or equivalent system approved by the CONTRACTING OFFICER or his/her representative prior to dredging may be used by the contractor. The contractor must provide, as part of the DPIP documentation, how to relate measured fore and aft draft values to external draft markings on the hopper dredge. The contractor shall verify draft sensor calibration according to manufacturer's specifications prior to commencement of work and document the calibration in the DPIP.

3.1.7 Hopper Level

Fore and aft hopper material level measurements shall be obtained with a minimum accuracy of + 1/10 foot with values recorded to the nearest 1/100-foot. To minimize the influence of vessel trim and list, four hopper level measurement sensors are recommended, two (port and starboard) fore and two (port and starboard) aft sensors. A minimum of two sensors are required, one fore and one aft. If only two sensors are used, they should be mounted in a location as close as possible over the hopper centerline and away from discharge flume turbulence and foam. If more than one fore or one aft sensor is used, then they should be placed near the corners of the hopper and the average value of the fore sensors and the average value of the aft sensors shall be reported. The contractor shall maintain a functional spare sensor on-board the dredge. The contractor shall install

and calibrate the sensors according to manufacturer's directions and guidelines.

As part of the DPIP submittal, the contractor shall provide calibration information for all sensors. The plan shall include four measurements of different hopper levels, comparing the sensor value to a standard, i.e., a tape measure. The CONTRACTING OFFICER or his/her representative may perform checks of the reported sensor to hopper level distance. Distance from sensor face to: 1) bottom of hopper and, 2) reference elevation for ullage measurements to calculate volume of hopper contents, shall be measured and provided to the CONTRACTING OFFICER or his/her representative as a part of the DPIP.

3.1.8 Tide

Tide data shall be obtained using appropriate equipment to give the water level accurate to the nearest 1/10 foot. Government furnished benchmark location and water level datum information will be provided at the dredging site and given to the contractor. Above datum (positive) tide values shall be entered with a positive sign, and below datum tide values shall be entered with a negative sign.

3.1.9 Hopper Status

Open/closed measurements of hopper status shall be obtained. These data correspond to the split/not split condition for a split hull hopper dredge. A hopper dredge with hopper doors may measure the status of a single door that is the first opened during normal disposal operations. A OPEN value refers to when the hopper door is open or in the case of split hull dredges, the hull is split. A CLOSED value refers to when the hopper doors are closed or in the case of split hull dredges, the hull is not split. The format is shown in paragraphs 3.4.2 and 3.4.3.

3.1.10 Material Recovery

True/False reports of material recovery shall be obtained. A True value refers to when the dredge is actually digging material. The contractor shall submit as part of the DPIP the project and dredge specific criteria used to determine this state for approval by the CONTRACTING OFFICER or his/her representative. An example criterion is shown in section 3.4.3.

3.1.11 Date and Time

The date and time shall be reported to the nearest second in the format shown in sections 3.4.2 and 3.4.3. The time shall be referenced to UTC time. The reported time is the time the measurements were taken.

3.1.12 Pumpout

Open/closed measurements of dredge pumpout valve status shall be obtained. This measurement shall be True when the dredge is pumping out and False when it is not. The format is shown in sections 3.4.2 and 3.4.3.

3.1.13 Pumping water

True/False reports of pumping water shall be obtained. A True value refers to when the dredge is not digging material but pumping water (or very low-density material) through the dredge pump(s). The contractor shall submit as part of the DPIP the project and dredge specific criteria used to

determine this state for approval by the CONTRACTING OFFICER or his/her

representative. An example is shown in section 3.4.3.

3.1.14 Minimum Pumping Effort

True/False reports of minimum pumping effort shall be obtained. A True value refers to when the dredge's pumps are running at idle speed or are off. The contractor shall submit as part of the DPIP the project and dredge specific criteria used to determine this state for approval by the CONTRACTING OFFICER or his/her representative. An example is shown in section 3.4.3.

3.2 PERFORMANCE REQUIREMENTS

3.2.1 Sensors

The contractor shall be responsible for replacement or repair of sensors and other necessary data acquisition equipment needed to supply the required data. Repairs must be completed within 48 hours after a sensor failure occurs or after the contractor fails to report required data within the specified time window (section 3.4.1) for dredge measurements. Pay will be reduced for failure to meet these system performance requirements.

3.2.2 System

To meet the overall goals stated in the introduction, the contractor's DSS system shall provide a minimum 95 percent data return. Data return is defined as the total number of valid data strings sent by the DSS system to the CONTRACTING OFFICER or his/her representative's computer divided by the number of data strings that are possible to send during a given time interval. The possible number of data strings for a given time interval is defined by the data-reporting interval in paragraph 3.4. Acceptable system performance includes the system consistently reporting correct data, especially at major transitions in the dredging cycle. Pay may be reduced at the discretion of the CONTRACTING OFFICER or his/her representative for failure to meet these system performance requirements.

3.3 CONTRACTOR PROVIDED EQUIPMENT

3.3.1 Data Monitoring Computer

The contractor shall supply the CONTRACTING OFFICER or his/her representative a computer that will run Corp's software and receive data from the contractor's data reporting interface. The DMC should contain at minimum a Pentium IV (or equivalent) microprocessor with no less than a 1.2 Gigahertz CPU. The computer must contain a hard disk no smaller than 8 Gigabytes, include at least 256 Megabytes of system memory, support the PCI system bus and support the Windows 2000 operating system. The contractor shall be responsible for obtaining component vendor software drivers if the drivers are not provided with the latest release of the Windows 2000 operating system software. The computer must also contain an Ethernet adapter that supports 10BaseT Unshielded Twisted Pair connections that shall connect to the network hub (contractor shall supply a stranded Category 5 UTP patch cable to the network hub and two spares). Also, it should have a standard 101 key keyboard, Microsoft compatible mouse, at minimum one parallel, two unoccupied serial ports, a universal serial bus port, and a CD-ROM drive (16X speed or faster). It should also have a minimum of 17-inch (viewable-size measured diagonally) video monitor capable of supporting at a minimum XVGA resolution of 1024x768 pixels,

65536 viewable colors. Also the system should include a 100Mb Zip disk mounted either internally or externally. The contractor shall make

available all computer related owner's guides and instruction manuals. If a CONTRACTING OFFICER or his/her representative's hardware (including printer and other hardware) fails to operate properly, the CONTRACTING OFFICER or his/her representative is responsible to determine the nature of the problem. If a hardware problem is identified, then the contractor shall be responsible for repairing it within 48 hours.

3.3.2 Network Hub

The CONTRACTING OFFICER or his/her representative's computer shall communicate via IEEE 802.3 Ethernet and the TCP/IP networking protocol. The contractor shall provide to the CONTRACTING OFFICER or his/her representative a network hub to allow the temporary addition of the CONTRACTING OFFICER or his/her representative's portable computers to the computer network. The hub should provide a minimum of four RJ-45 ports that support Category 5 Unshielded Twisted-Pair Network wiring.

3.3.3 UPS

The contractor shall also supply an Uninterruptible Power Supply (UPS) for the computer and networking equipment. The UPS should provide backup power at 1kVA for a minimum of 10 minutes. The UPS should have a serial interface to the CONTRACTING OFFICER or his/her representative's computer to communicate UPS status. The contractor shall ensure that sufficient power outlets are available to run all specified equipment.

3.3.4 Printer

The contractor shall supply a printer. The printer will connect to the specified Ship computer via a parallel interface (cable supplied by the contractor). The printer should support the Adobe Postscript Level 2-page description language. Also, the printer should have a minimum resolution of 300 dots per inch and have a rated print speed of 6 pages per minute or higher. Additionally, the printer should have minimum paper capacity of 100 pages of 8.5X11 inch paper. The contractor is responsible for maintaining a supply of printer paper and other consumables such as printer cartridges. Printer usage will not exceed 500 pages per month.

3.3.5 Satellite Data Modem

The contractor shall provide a satellite phone or modem, establish service and install the relevant equipment for use as a data link. The satellite data transmission device shall be equal to or equivalent to a SeaTel Wavecall 3000 or Qualcomm GSP-1620 which have the following salient characteristics: connection to externally mounted antenna, db-9 connector serial data transmission port, compatible with the Globlalstar satellite system, 9.6Kbaud data transmission rate, no internet service provider required to access the Internet, and compatible with Microsoft windows dialup networking. The data transmission time required is 1 to 3 minutes for each hopper load.

To avoid data interference, the satellite data modem is for the excusive use of the DMC computer during the length of the contract. The contractor shall provide copies of all relevant operating and reference manuals for the satellite data phone/modem. As in 3.3.1 if the modem fails then the contractor shall repair it within 48 hours.

3.3.6 Figure of Contractor Provided Equipment

See Attachment Fig. 3.3.6

3.4 DATA REPORTING INTERFACE

Standard data shall be sent to the CONTRACTING OFFICER or his/her representative's computer. The sensor data should be output via an RS-232 19200-baud serial interface to the CONTRACTING OFFICER or his/her representative's data-monitoring computer. The serial interface shall be configured as 8 bits no parity and no flow control.

3.4.1 Data Measurement Interval

Data are reported as a series of events. Disposal activities are required to be logged with high temporal and spatial resolution. A standard data string should be nominally sent every 10 seconds. The failure to send a data string within 25 seconds to the CONTRACTING OFFICER or his/her representative's computer results in a dredge down status determination by the automated monitoring system if the dredge is within two miles of the disposal or dredging area. Data strings should never be sent more frequently than one per second. The standard events are in the following table:

Event Description	Event Time Resolution
An elapsed time of 10seconds since the last event	1 second
Start of Disposal Activity	1 second
End of Disposal Activity	1 second
3.4.2 XML Reporting Data Format See Attachment Fig. 3.4.2	
3.4.3 Reporting Data Metadata See Attachment Fig. 3.4.3	
3.4.4 Data Reporting Example See Attachment Fig. 3.4.4	
3.4.5 Legacy Data Reporting Format See Attachment Fig. 3.4.5	
3.4.6 Legacy Format Data Reporting Metadata See Attachment Fig. 3.4.6	
3.4.7 Contractor Data Backup	

The dredging contractor shall maintain an archive of the data sent to the CONTRACTING OFFICER or his/her representative's computer for the length of the dredging project. The CONTRACTING OFFICER or his/her representative may request (at no additional cost to the contract price) that the contractor provide a copy of these data covering specified time periods. The data

shall be provided on PC format CD-ROM (or other storage medium acceptable to the CONTRACTING OFFICER or his/her representative) and each of the requested time periods shall be identified.

3.5 DREDGE PLANT INSTRUMENTATION PLAN

The contractor shall submit a Dredge Plant Instrumentation Plan prior to commencement of dredging operations. Refer to section 3.8 for the schedule of submittal. The plan shall include at a minimum:

3.5.1 Dredge Computations and Documentation

All computations for a particular dredge concerning deriving computed data elements as required in section 3.4.3 from sensor data elements shall be provided to the CONTRACTING OFFICER or his/her representative. Any changes to the computing methods during the dredging contract must be approved in writing by the CONTRACTING OFFICER or his/her representative prior to the change being applied. These computations include the vessel displacement, hopper volume, material recovery, pumping water, and the minimum pumping effort.

The contractor shall provide the dragpipe length dimensions and offset distances from the DGPS antenna location to the centerline of each draghead. The inside pipe diameter along with the location of the slurry density and slurry velocity metering system sensors shall also be provided to the CONTRACTING OFFICER or his/her representative. All dimensions and drawings are to be certified by a licensed marine surveyor or architect.

The contractor shall also provide the CONTRACTING OFFICER or his/her representative with dimensioned-drawings of the hopper with hopper level sensor locations included. These drawings should include hopper length, depth, and width with hopper level sensors referenced to the overall dimensions. A typical mid-ship hopper cross-section should be included with dimensions. The overall dredge dimensions shall also be provided, indicating the locations of the fore and aft draft sensors with regard to; 1) horizontal and vertical distances from the keel, 2) horizontal and vertical distances between each draft sensor, 3) vertical distances to the hopper level sensors, 4) distance of aft draft sensor to aft perpendicular, 5) distance of fore draft sensor to fore perpendicular, 6) distance of the aft draft sensor from the midship section, and 7) distance of the fore draft sensor from the midship section. The contractor shall also provide in writing as part of the DPIP; how to relate fore and aft ullage sensor measurements to hopper volume calculations.

3.5.2 Data Reporting

Non standard sensor data names not in section 3.4.3 shall be supplied to the CONTRACTING OFFICER or his/her representative. An example ASCII format file of data to be exported to the CONTRACTING OFFICER or his/her representative's computer shall be provided with the DPIP.

3.5.3 Computer Hardware

The brand name and specifications of furnished computer hardware.

3.5.4 Calibrations

The contractor shall provide certificates of calibration and/or manufacturer certificates of compliance for all needed dredge information.

These include slurry density, slurry velocity, heading, draft, hopper level, water depth, and draghead depth.

3.5.5 Instrumentation Quality Control Methods

Test methods used by the contractor to provide quality control of input sensor data should be documented. These test methods shall include the checking of sensors to verify that reported values are applicable for that sensor and the particular project being dredged.

3.5.6 Sensor Log

The contractor shall maintain a log of sensor performance and modifications during the length of the dredging contract. The log shall contain the time when a sensor fails (and subsequently repaired). The log shall also include the time and results of sensor calibrations, the time of sensor replacements, and the time when backup sensor systems are initiated to provide required data. It shall also contain the name of the person responsible for the sensor work. Only sensors that affect the data reported in section 3.4.3 are affected by this logging requirement.

3.5.7 Hopper Volume and Dredge Displacement

In the DPIP, the contractor shall supply the CONTRACTING OFFICER or his/her representative with the dredge ullage table which lists the hopper volume as a function of hopper level, a dredge draft displacement table listing the dredge displacement as a function of draft, and the vessel's hydrostatic curves and lines drawing. A licensed marine surveyor or architect who is independent of the contractor must certify these tables, curves, and lines drawing. The contractor should specify the most accurate method for calculating hopper volume based on fore and aft hopper level and displacement based on fore and aft draft.

3.5.8 Summary of DPIP Deliverables

See Attachment Fig 3.5.8

3.6 QUALITY ASSURANCE TESTS

3.6.1 Water Test

Each water test shall consist of pumping the hopper out to its lowest level and then filling the hopper to capacity with water. The objective of the water test is to assure data consistency by comparing the system-measured water specific gravity to that of the value determined by analyzing water samples retrieved from the hopper. The CONTRACTING OFFICER or his/her representative will direct the contractor in performing up to three water tests at no additional cost to the contract price. After the first water test, the CONTRACTING OFFICER or his/her representative will evaluate the data for accuracy. If the CONTRACTING OFFICER or his/her representative's review of the data indicates an unsatisfactory calibration, a re calibration of the sensors and review of contractor supplied displacement and hopper volume may be necessary before completing additional water tests. During dredging operations, up to two additional water tests may be conducted per week at the time and discretion of the CONTRACTING OFFICER or his/her representative. The CONTRACTING OFFICER or his/her representative will review the water test data to insure that the system is operating within acceptable accuracy, directing the contractor to re-calibrate or repair system components as necessary.

The Contractor shall provide a handheld refractometer with automatic temperature compensation to measure the hopper water specific gravity during water tests. The refractometer shall be capable of measuring the hopper water's specific gravity with a resolution of 0.001 and minimum accuracy of + 0.001. The Contractor shall also provide a water-sampling device to retrieve a sufficient volume of water from various depths in the hopper to accurately determine specific gravity with the refractometer.

3.6.2 Relative water level tests

The relative water level test consists of opening the bottom dump doors (or corresponding equipment) to allow the water level surrounding the dredge to equalize with the water level in the hopper and comparing the draft and ullage sensor-measured values of the same water plane. During dredging operations, up to two additional relative water level tests may be conducted per week at the time and discretion of the CONTRACTING OFFICER or his/her representative. The CONTRACTING OFFICER or his/her representative will review the test data to insure that the system is operating within acceptable accuracy, directing the contractor to re-calibrate or repair system components as necessary. The contractor shall provide to the CONTRACTING OFFICER or his/her representative sufficient dredge configuration data including the vertical distance between hopper level sensors and draft sensors.

3.6.3 Hopper level

The CONTRACTING OFFICER or his/her representative will periodically check the reported hopper level. Tape measure or other distance measuring means shall be used. The Contractor shall have on the dredge a clearly readable weighted tape with measurements shown in foot-and-tenths-and hundredths, capable of measuring the full hopper depth. The weight for this tape shall be a 6-inch diameter disk weighing between 2 and 3 pounds. The CONTRACTING OFFICER or his/her representative will review the hopper level data to insure that the system is operating within acceptable accuracy (1/10 foot), directing the contractor to re-calibrate or repair system components as necessary.

3.6.4 Draghead Depth

The CONTRACTING OFFICER or his/her representative may require periodic calibration checks of the reported draghead depth over a calibration point at the project site. The CONTRACTING OFFICER or his/her representative may also use direct means such as tape measures, sounding lines, and pressure sensors to directly measure draghead depth. The Contractor shall have on the dredge a clearly readable steel tape, chain, or wire graduated in 1 and 1/2 foot increments. This tape or chain shall be capable of measuring the depth below water surface of the low fixed point of each draghead with sufficient length to measure 5 feet over the maximum project depth. . The CONTRACTING OFFICER or his/her representative will review the hopper level data to insure that the system is operating within acceptable accuracy, directing the contractor to re-calibrate or repair system components as necessary.

3.7 LIST OF ITEMS PROVIDED BY THE CONTRACTOR

See Attachment Fig 3.7

3.8 SCHEDULE OF DPIP SUBMITTAL

The Contractor DPIP submittal shall be required by the Notice to Proceed date. Within 7 days after receipt of the DPIP, the CONTRACTING OFFICER or his/her representative will review and comment on its acceptability. After this DPIP is reviewed and accepted by the CONTRACTING OFFICER or his/her representative, the onboard system will be required to be inspected, approved by the CONTRACTING OFFICER or his/her representative, and operational within 15 days of the Notice to Proceed.

If the system is not operational after 15 days after the Notice to Proceed, or if the system becomes inoperable for a period of time greater than allowed in the specification, the Dredging unit price will each be reduced to 80% of the original bid price for any quantity dredged while the system is not fully operational.

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PROPOSAL SCHEDULE
2009-2011 TRANSITIONAL & MAINTENANCE DREDGING
PORT OF ANCHORAGE, ALASKA

Item No.	Description	Quantity	Unit	Unit Price	Amount
	BASE ITEMS (2009)				
0001.	Bid, Performance, and Payment Bond Cost, 2009, complete	1	Job	Lump Sum	$_____
0002.	Mobilization and Demobilization, 2009, complete	1	Job	Lump Sum	$_____
0003.	North Extension and Barge Berths, Virgin Materials, Dredging and Disposal, 2009, complete				
0003AA.	First 1,500,000 CY	1,500,000	CY	$_____	$_____
0003AB.	All Over 1,500,000 CY	400,000	CY	$_____	$_____
0004.	Pre-Dredge, Post-Dredge, and Intermediate Hydrographic Surveys, 2009, complete	81	EA	$_____	$_____
	OPTIONAL ITEMS (2009)				
0005.	Optional Partnering Session, 2009, complete	1	Job	Lump Sum	$_____
	Total of Base and Optional Items (0001 thru 0005) for 2009				$_____
	OPTIONAL ITEMS (2010)				
0006.	Optional Bid, Performance, and Payment Bond Cost, 2010, complete	1	Job	Lump Sum	$_____
0007.	Optional Mobilization and Demobilization, 2010, complete	1	Job	Lump Sum	$_____
0008.	Optional North Extension, Maintenance Dredging and Disposal, 2010, complete				
0008AA.	First 2,000,000 CY	2,000,000	CY	$_____	$_____

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PROPOSAL SCHEDULE
2009-2011 TRANSITIONAL & MAINTENANCE DREDGING
PORT OF ANCHORAGE, ALASKA

Item No.	Description	Quantity	Unit	Unit Price	Amount
0008AB.	All Over 2,000,000 CY	800,000	CY	$_____	$_____
0009.	Optional Existing Port Area, Maintenance Dredging and Disposal, 2010, complete				
0009AA.	First 1,500,000 CY	1,500,000	CY	$_____	$_____
0009AB.	All Over 1,500,000 CY	500,000	CY	$_____	$_____
0010.	Optional South Extension, Virgin Materials, Dredging and Disposal, 2010, complete				
0010AA.	First 500,000 CY	500,000	CY	$_____	$_____
0010AB.	All Over 500,000 CY	200,000	CY	$_____	$_____
0011.	Optional South Extension, Maintenance Dredging and Disposal, 2010, complete				
0011AA.	First 200,000 CY	200,000	CY	$_____	$_____
0011AB.	All Over 200,000 CY	200,000	CY	$_____	$_____
0012.	Optional Pre-Dredge, Post-Dredge, and Intermediate Hydrographic Surveys, 2010, complete	81	EA	$_____	$_____
	Total of Base and Optional Items (0006 thru 0012) for 2010				$_____
	OPTIONAL ITEMS (2011)				
0013.	Optional Bid, Performance, and Payment Bond Cost, 2011, complete	1	Job	Lump Sum	$_____
0014.	Optional Mobilization and Demobilization, 2011, complete	1	Job	Lump Sum	$_____
0015.	Optional North Extension, Maintenance Dredging and Disposal, 2011, complete				

PROPOSAL SCHEDULE
2009-2011 TRANSITIONAL & MAINTENANCE DREDGING
PORT OF ANCHORAGE, ALASKA

Item No.	Description	Quantity	Unit	Unit Price	Amount
0015AA.	First 2,000,000 CY	2,000,000	CY	$_____	$_____
0015AB.	All Over 2,000,000 CY	800,000	CY	$_____	$_____
0016.	Optional Existing Port Area, Maintenance Dredging and Disposal, 2011, complete				
0016AA.	First 1,500,000 CY	1,500,000	CY	$_____	$_____
0016AB.	All Over 1,500,000 CY	500,000	CY	$_____	$_____
0017.	Optional South Extension, Virgin Materials, Dredging and Disposal, 2011, complete				
0017AA.	First 500,000 CY	500,000	CY	$_____	$_____
0017AB.	All Over 500,000 CY	200,000	CY	$_____	$_____
0018.	Optional South Extension, Maintenance Dredging and Disposal, 2011, complete				
0018AA.	First 200,000 CY	200,000	CY	$_____	$_____
0018AB.	All Over 200,000 CY	200,000	CY	$_____	$_____
0019.	Optional Pre-Dredge, Post-Dredge, and Intermediate Hydrographic Surveys, 2011, complete	81	EA	$_____	$_____

Total of Base and Optional Items (0013 thru 0019) for 2011

Total of Base plus Optional Items (0001 thru 0019) 2009-2011: $_____

EVALUTIONS OF OFFERS.

1. AWARD: Award will be made in accordance with Section 00120 - EVALUATION FACTORS FOR AWARD.

2. INCOMPLETE PROPOSALS: Failure to submit an offer on all items in the schedule will result in an incomplete offer and the offer will be rejected. Unit or lump sum prices must be shown for each item within the schedule.

3. EXTENSIONS: All extensions of the unit prices shown will be subject to verification by the Government. In case of variation between the unit price and the extension, the unit price will govern.

4. SPECIAL BID CONDITION: If a modification to an offer based on unit prices is submitted which provides for a lump sum adjustment to the total offered price, the application of the lump sum adjustment to each unit price in the proposal schedule must be stated. If it is not stated, the offeror agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the proposal schedule.

-- End of Proposal Schedule --

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