US Army Corps
of Engineers
Savannah District

Clemson, South Carolina

Solicitation Number
DACW21-03-B-0002
Seismic Remediation - Clemson Diversion Dams
Hartwell Lake
Volume I of II - Contract Clauses and Technical Specifications
May 2003

THIS SOLICITATION IS UNRESTRICTED PURSUANT TO THE
"BUSINESS OPPORTUNITY DEVELOPMENT REFORM ACT OF 1988"
(PUBLIC LAW 100-656)

U.S. ARMY ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

TABLE OF CONTENTS

00010 Solicitation/Contract Form and Bidding Schedule

00100 Instructions, Conditions, and Notices to Offerors

00600 Representations and Certifications

00700 Contract Clauses

00800 Special Contract Requirements

Attachment 1 to Section 00800

Volume I - Specifications - Divisions 1 and 2

Volume II - Appendices

*4 Appendix A - Logs of Borings and Instrument Installations
Appendix B - Results of Laboratory Soils Index Testing
Appendix C - Time-History and Cross-Section Plots of Reservoir and Piezometric Levels (December 1995 - January 2002) and Recent Water Level Readings for Piezometers and Monitoring Wells
Appendix D - Results of Chemical Testing of Reservoir and Groundwater
Appendix E - Excerpts from Design Summary Report (By GEI Consultants) Pertaining to Laboratory Mix Design Test Program

SOLICITATION, OFFER, AND AWARD *(Construction, Alteration, or Repair)*	1. SOLICITATION NO. DACW21-03-B-0002	2. TYPE OF SOLICITATION [X] SEALED BID (IFB) [ ] NEGOTIATED *(RFP)*	3. DATE ISSUED 29-May-2003	PAGE OF PAGES 1 OF 137

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

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO. W33SJG-2200-8593	6. PROJECT NO.

7. ISSUED BY CODE CT-P	8. ADDRESS OFFER TO *(If Other Than Item 7)* CODE
US ARMY ENGINEER DISTRICT SAVANNAH ATTN: SHARON GODBEE (CT-P) 100 W OGLETHORPE AVENUE SAVANNAH GA 31401	**See Item 7**
TEL:(912)652-5400 FAX: (912)652-6059	TEL: FAX:

9. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. *(Include area code)* *(NO COLLECT CALLS)*
	SHARON H GODBEE	912/652-5400

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):*

CONTRACT SPECIALIST: Sharon Godbee, (912)652-5400
sharon.h.godbee@sas02.usace.army.mil

Seismic Remediation - Clemson Diversion Dams

SEE SECTION 01502 COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK

NOTE: The estimated price range for this project is between $5,000,000.00 to $10,000,000.00

NOTE: This solicitation is issued on an unrestricted basis pursuant to the Business Opportunity Development Reform of Act 1988 (Public Law 100-656).

11. The Contractor shall begin performance within 5 calendar days and complete it within 540 calendar days after receiving [ ] award, [X] notice to proceed. This performance period is [X] mandatory, [ ] negotiable. *(See _____ .)*

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.)* [X] YES [ ] NO	12B. CALENDAR DAYS 5

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 1 copies to perform the work required are due at the place specified in Item 8 by 02:00 PM *(hour)* local time 01 Jul 2003 *(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 [X] is, [ ] 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

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

SCHEDULE

SEISMIC REMEDIATION – CLEMSON DIVERSION DAMS
HARTWELL LAKE, CLEMSON, South Carolina

ALL BIDDERS ARE ADVISED MATERIALLY UNBALANCED BIDS MAY BE REJECTED AS NONRESPONSIVE. SEE SECTION 00100 – 52.214-0019

ESTIMATED LINE ITEMS SHALL NOT EXCEED THE ESTIMATED AMOUNT WITHOUT PRIOR APPROVAL OF THE CONTRACTING OFFICER.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	Mobilization	1	Lump Sum	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002	Sitework (Section 02000)	1	Lump Sum	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003	Dewatering, Lower Diversion Dam (Section 02140)	1	Lump Sum	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004	Dewatering, Upper Diversion Dam (Section 02140)	1	Lump Sum	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005	Soil-Cement Mixing, Lower Diversion Dam (Section 02240)	100,500	Cubic Yard	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006	Soil-Cement Mixing , Upper Diversion (Section 02240)	101,500	Cubic Yard	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007	Drains, Lower Diversion Dam (Section 02250)	1	Lump Sum	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008	Drains, Upper Diversion Dam (Section 02250)	1	Lump Sum	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009	Inclinometer Casing (Section 02235)	280	Linear Foot	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010	Inclinometer Reading (Section 02235)				

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010AA	First 70 Inclinometer Readings (Section 02235)	70	Each	$_____	$_____

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010AB	Over 70 Readings (Section 02235)	30	Each	$_____	$_____

TOTAL BID ITEMS 0001 THROUGH 0010AB ---------- $_____

Section 00100 - Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY FULL TEXT

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" followed by the DUNS number that identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

(1) Company name.

(2) Company address.

(3) Company telephone number.

(4) Line of business.

(5) Chief executive officer/key manager.

(6) Date the company was started.

(7) Number of people employed by the company.

(8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at http://www.customerservice@dnb.com. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@mail.dnb.com.

(End of provision)

52.209-4002 PAST PERFORMANCE

Award will be made to the lowest priced, responsible, responsive bidder, with a responsibility determination made in accordance with Federal Acquisition Regulation (FAR) 9.1, and specifically 9.104-3(b) satisfactory performance record. Bidders shall submit with their bid the following information to aid in the determination of responsibility:

(1) Location, Name, General Description (Scope of Work) of at least 3 to a maximum of five contracts for similar size, complete with monetary value, and date of completion.

(2) Point of contacts (names and telephone numbers) for all submitted references so individuals may be contacted for verification.

(3) A bank reference, with point of contact and telephone number for verification in accordance with FAR 52.247-6.

52.211-5000 EVALUATION OF SUBDIVIDED ITEMS (MAR 1995)--EFARS
Item No. 0010 is subdivided into two or more estimated quantities and are to be separately priced. The Government will evaluate each of these items on the basis of total price of its sub-items.
(End of clause)

52.214-3 AMENDMENTS TO INVITATIONS FOR BIDS (DEC 1989)

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date in the space provided for this purpose on the form for submitting a bid, (3) by letter or telegram, or (4) by facsimile, if facsimile bids are authorized in the solicitation. The Government must receive the acknowledgment by the time and at the place specified for receipt of bids.

(End of provision)

52.214-4 FALSE STATEMENTS IN BIDS (APR 1984)

Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

(End of provision)

52.214-5 SUBMISSION OF BIDS (MAR 1997)

(a) Bids and bid modifications shall be submitted in sealed envelopes or packages (unless submitted by electronic means) (1) addressed to the office specified in the solicitation, and (2) showing the time and date specified for receipt, the solicitation number, and the name and address of the bidder.

(b) Bidders using commercial carrier services shall ensure that the bid is addressed and marked on the outermost envelope or wrapper as prescribed in subparagraphs (a)(1) and (2) of this provision when delivered to the office specified in the solicitation.

(c) Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice.

(d) Facsimile bids, modifications, or withdrawals, will not be considered unless authorized by the solicitation.

(e) Bids submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.

(End of provision)

52.214-6 EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984)

Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon enough to allow a reply to reach all prospective bidders before the submission of their bids. Oral explanations or instructions given before the award of a contract will not be binding. Any information given a prospective bidder concerning a solicitation will be furnished promptly to all other prospective bidders as an amendment to the solicitation, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders.

(End of provision)

52.214-7 LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (NOV 1999)

(a) Bidders are responsible for submitting bids, and any modifications or withdrawals, so as to reach the Government office designated in the invitation for bids (IFB) by the time specified in the IFB. If no time is specified in the IFB, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that bids are due.

(b)(1) Any bid, modification, or withdrawal received at the Government office designated in the IFB after the exact time specified for receipt of bids is “late” and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late bid would not unduly delay the acquisition; and--

(i) If it was transmitted through an electronic commerce method authorized by the IFB, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of bids; or

(ii) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of bids and was under the Government's control prior to the time set for receipt of bids.

(2) However, a late modification of an otherwise successful bid that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(c) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the bid wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(d) If an emergency or unanticipated event interrupts normal Government processes so that bids cannot be received at the Government office designated for receipt of bids by the exact time specified in the IFB and urgent Government requirements preclude amendment of the IFB, the time specified for receipt of bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(e) Bids may be withdrawn by written notice received at any time before the exact time set for receipt of bids. If the IFB authorizes facsimile bids, bids may be withdrawn via facsimile received at any time before the exact time set for receipt of bids, subject to the conditions specified in the provision at 52.214-31, Facsimile Bids. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

(End of provision)

52.214-18 PREPARATION OF BIDS--CONSTRUCTION (APR 1984)

(a) Bids must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a bid must initial each erasure or change appearing on any bid form.

(b) The bid form may require bidders to submit bid prices for one or more items on various bases, including--

(1) Lump sum bidding;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of subparagraphs (1) through (3) above.

(c) If the solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(d) Alternate bids will not be considered unless this solicitation authorizes their submission.

(End of provision)

52.214-19 CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION (AUG 1996)

(a) The Government will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the Government, considering only price and the price-related factors specified elsewhere in the solicitation.

(b) The Government may reject any or all bids, and waive informalities or minor irregularities in bids received.

(c) The Government may accept any item or combination of items, unless doing so is precluded by a restrictive limitation in the solicitation or the bid.

(d) The Government may reject a bid as nonresponsive if the prices bid are materially unbalanced between line items or subline items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Government even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

(End of provison)

52.209-4002 – PAST PERFORMANCE

Award will be made to the lowest priced, responsible, responsive bidder, with a responsibility determination made in accordance with Federal Acquisition Regulation (FAR) 9.1 and specifically 9.104-3(b) satisfactory performance record, Bidders shall submit with their bid the following information to aid in the determination of responsibility:

(1) Location, Name, General Description (Scope of Work) of at least three to a maximum of five contracts for similar size, complete with monetary value, and date of completion.
(2) Point of contacts (names and telephone numbers) for all submitted references so individuals may be contacted for verification.
(3) A bank reference, with point of contact and telephone number for verification in accordance with FAR 52.247-6.

52.214-34 SUBMISSION OF OFFERS IN THE ENGLISH LANGUAGE (APR 1991)

Offers submitted in response to this solicitation shall be in the English language. Offers received in other than English shall be rejected.

(End of provision)

52.214-35 SUBMISSION OF OFFERS IN U.S. CURRENCY (APR 1991)

Offers submitted in response to this solicitation shall be in terms of U.S. dollars. Offers received in other than U.S. dollars shall be rejected.

(End of provision)

52.214-4001 FACSIMILE MODIFICATION OF BIDS (Ref. FAR 52.214-5(c)) (JUL 1999 CESAS-CT-C)

(a) Definition. "Facsimile bid modification," as used in this solicitation means a modification to a bid that has been submitted in accordance with the solicitation.
(b) Bidders may submit facsimile bid modifications to this solicitation. These facsimile bid modifications must arrive at the place and by the time specified in the solicitation.
(c) ALL FACSIMILE BID MODIFICATIONS SHALL CONTAIN A COMPLETED BID SCHEDULE. THE SPACES SHALL BE FILLED IN FOR UNIT PRICES, EXTENDED PRICES AND TOTAL BID PRICE.
(d) Facsimile bid modifications must contain the signature of an official of the company.
(e) Facsimile receiving data and compatibility characteristics are as follows:
(1) Telephone number of receiving facsimile equipment: 912-652-6001
(2) Compatibility characteristics - CCTTT Group 3, 2, 1
(f) If the bidder chooses to transmit a facsimile bid modification, the Government will not be responsible for any failure attributable to the transmission or receipt of the facsimile modification, including, but not limited to, the following:
(1) Receipt of garbled or incomplete modification.
(2) Availability or condition of the receiving facsimile equipment.
(3) Incompatibility between the sending and receiving equipment.
(4) Delay in transmission or receipt of modification.
(5) Failure of the bidder to properly identify the modification.
(6) Illegibility of modification.
(7) Security of modification data.
(End of provision)

52.214-4002 HAND-CARRIED OR MAILED BIDS/PROPOSALS:

All bids/proposals must be clearly identified with the contractor’s name and address and Notice to Bidder OF-17 label affixed to the lower left corner of the outermost wrapper indicating the Invitation No., Date of Bid/Proposal Opening, Time of Opening, and Bid/Proposals For (title of Project). Bids/Proposals not properly identified on the outermost wrapper may not be accepted if received later than the time set for opening of bids/proposals, as there may be no way to determine the exact time of receipt.

The Government will not be responsible for bids/proposals delivered to any location or to anyone other than those designated to receive bids/proposals on its behalf as indicated below.

Bids/Proposals delivered by commercial carrier and those sent by U.S. Mail, including U.S. Express Mail, must be addressed as indicated below. Bids/proposals shall not be addressed to any specific person.

U.S. Army Engineer District, Savannah
ATTN: CESAS-CT-P
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

Bids/Proposals sent by U.S. Mail or delivered by commercial carrier must be received by mailroom personnel on the first floor of 100 West Oglethorpe Avenue in sufficient time to be delivered to the bid opening room prior to the time set for opening of bids/proposals.

Even if bids/proposals are addressed correctly according to this clause, use of United States Postal Service Express Mail may result in delivery to the Savannah District Post Office Box instead of 100 West Oglethorpe Avenue, which may delay receipt of bids/proposals.

Hand-carried bids/proposals delivered more than a half-hour before bid opening must also be delivered to mailroom personnel on the first floor.

Hand-carried bids/proposals delivered within a half-hour of bid opening must be delivered to the bid opening room on the second floor. Bidders must allow sufficient time to pass through security on the first floor and be escorted to the second floor.

52.214-5000 APPARENT CLERICAL MISTAKES (MAR 1995)--EFARS

(a) For the purpose of initial evaluations of bids, the following will be utilized in the resolving arithmetic discrepancies found on the face of bidding schedule as submitted by the bidder:

(1) Obviously misplaced decimal points will be corrected;
(2) Discrepancy between unit price and extended price, the unit price will govern;
(3) Apparent errors in extension of unit prices will be corrected;
(4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purpose of bid evaluation, the government will proceed on the assumption that the bidder intends his bid to be evaluated on basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

(End of statement)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Firm-Fixed Price contract resulting from this solicitation.

(End of clause)

52.219-4001 SUBCONTRACTING PLAN FOR SMALL BUSINESS CONCERNS
(SEP 2002 CESAS-CT)

(a) In accordance with FAR Clause 52.219-9, large businesses must submit a subcontracting plan. A sample subcontracting plan is located in Section 00800.

(b) The subcontracting targets (expressed in terms of percentages of total planned subcontracting dollars) of the Savannah District are as follows:

Small Business	-	57.2%
Small Disadvantaged Business	-	8.9%
HUBZone Small Business		3.0%
Women-Owned Business	-	8.1%
Veteran-Owned Small Business		0%*
Service-Disabled Veteran-Owned Small Business	-	3.0%**

If you cannot reach the above-stated targets, you must provide written justification with your subcontracting plan detailing the reasons you cannot meet the requirements.

*(c) While Savannah District does not have a specific target for subcontracting with Veteran-Owned small businesses, this must be addressed in any subcontracting plan.

**(d) Service-disabled Veteran-owned Small Business (SD/VOSB) is a composite of Veteran-Owned Small Business. The SD/VOSB target must be included in the Veteran-Owned small business target.

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
17.8	6.9

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to

Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

(1) Name, address, and telephone number of the subcontractor;

(2) Employer's identification number of the subcontractor;

(3) Estimated dollar amount of the subcontract;

(4) Estimated starting and completion dates of the subcontract; and

(5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is Clemson South Carolina.

(End of provision)

52.225-10 NOTICE OF BUY AMERICAN ACT REQUIREMENT--CONSTRUCTION MATERIALS (MAY 2002)

(a) Definitions. Construction material, domestic construction material, and foreign construction material, as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act --Construction Materials” (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) Requests for determinations of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

District Engineer
U.S. Army Engineer District, Savannah
Attn: CESAS-CT-P
100 W. Oglethorpe Avenue
Savannah, GA 31401-3640

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995) – ALTERNATE I (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) An organized site visit has been scheduled for--

Prebid Conference will be held in Room 104 of McAdams Hall at Clemson University in Clemson, South Carolina, beginning a 2:00 p.m. on June 10, 2003. Discussions with design engineers and site visits will be conducted that afternoon. Additional discussion and fielding of questions will be held on June 11, 2003, beginning at 8:30 a.m. Questions for the design engineers shall be submitted in writing by 8:00 a.m. on June 11, 2003. Questions can also be sent to USACE, Attn: Bill Lynch, P.O. Box 899, Savannah, GA 31402 anytime before the prebid conference. The remarks, explanations and answers provided by the Government representative before, during, or after the prebid conference, whether oral or written, shall not change or qualify any of the terms or conditions of the solicitation. The solicitation can only be changed by formal written amendment issued by the

contracting officer.

(c) Participants will meet at--
Room 104 McAdam Hall
Clemson University
Clemson, South Carolina

For a Clemson University campus map and directions please go to: www.clemson.edu/welcome/campmap/
Scroll down to 84 McAdams Hall, click on 84; there will be a map. Written directions can be obtained by clicking on McAdams Hall at bottom of map.
(End of provision)

52.236-4011 Disclosure of Magnitude of Construction (FAR 36.204 and DFARS 236.204)

The estimated price range for this project is between $5,000,000 and $10,000,000.

Section 00600 - Representations & Certifications

CLAUSES INCORPORATED BY FULL TEXT

52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to –

(i) Those prices,

(ii) The intention to submit an offer, or

(iii) The methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provison _____ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision.

(c) If the offeror deletes or modifies subparagraph (a)(2) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of clause)

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence

Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of $100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than $10,000, and not more than $100,000, for each such failure.

(End of provision)

52.204-5 WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (MAY 1999)

(a) Definition. Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Representation. [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of this solicitation.] The offeror represents that it ( ) is a women-owned business concern.

(End of provision)

52.204-4003 TAXPAYER IDENTIFICATION

Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(a) Taxpayer Identification Number (TIN).

___ TIN:._____

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(b) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049-4;

___ Other _____

(c) Common parent.

___ Offeror is not owned or controlled by a common parent

___ Name and TIN of common parent:

Name _____

TIN _____

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that--

(i) The Offeror and/or any of its Principals--

(A) Are ( ) are not ( ) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have ( ) have not ( ), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are ( ) are not ( ) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(ii) The Offeror has ( ) has not ( ), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002) - ALTERNATE I (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 237990.

(2) The small business size standard is $28.5 million.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it ( ) is, ( ) is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ( ) is, ( ) is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a service-disabled veteran-owned small business concern.

(6) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It ( ) is, ( ) is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ( ) is, ( ) is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:_____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.) The offeror shall check the category in which its ownership falls:

____ Black American.

____ Hispanic American.

____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

____ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; or

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.219-2 EQUAL LOW BIDS. (OCT 1995)

(a) This provision applies to small business concerns only.

(b) The bidder's status as a labor surplus area (LSA) concern may affect entitlement to award in case of tie bids. If the bidder wishes to be considered for this priority, the bidder must identify, in the following space, the LSA in which the costs to be incurred on account of manufacturing or production (by the bidder or the first-tier subcontractors) amount to more than 50 percent of the contract price.

_____

_____

(c) Failure to identify the labor surplus area as specified in paragraph (b) of this provision will preclude the bidder from receiving priority consideration. If the bidder is awarded a contract as a result of receiving priority consideration under this provision and would not have otherwise received award, the bidder shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) ( ) It has, ( ) has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) ( ) It has, ( ) has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

( ) (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

( ) (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

( ) (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

( ) (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

( ) (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(End of clause)

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclosure such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each government.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

CLAUSES INCORPORATED BY FULL TEXT

52.202-1 DEFINITIONS (MAY 2001) --ALTERNATE I (MAR 2001)

(a) Agency head or head of the agency means the Secretary (Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, unless otherwise indicated, including any deputy or assistant chief official of the executive agency.

(b) Commercial component means any component that is a commercial item.

(c) Component means any item supplied to the Government as part of an end item or of another component, except that for use in 52.225-9, and 52.225-11 see the definitions in 52.225-9(a) and 52.225-11(a).

(d) Contracting Officer means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(e) Nondevelopmental item means--

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (f)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (f)(1) or (f)(2) solely because the item is not yet in use.

(f) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(g) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.

(End of clause)

52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) of this clause, the Government is entitled--

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

(End of clause)

52.203-6 RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT (JUL 1995)

(a) Except as provided in (b) of this clause, the Contractor shall not enter into any agreement with an actual or prospective subcontractor, nor otherwise act in any manner, which has or may have the effect of restricting sales by such subcontractors directly to the Government of any item or process (including computer software) made or furnished by the subcontractor under this contract or under any follow-on production contract.

(b) The prohibition in (a) of this clause does not preclude the Contractor from asserting rights that are otherwise authorized by law or regulation.

(c) The Contractor agrees to incorporate the substance of this clause, including this paragraph (c), in all subcontracts under this contract which exceed $100,000.

52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from -

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Soliciting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c)(1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an

inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may (i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or (ii) direct that the Prime Contractor withhold, from sums owed a subcontractor under the prime contract, the amount of any kickback. The Contracting Officer may order the monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including this subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed $100,000.

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27(a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

(End of clause)

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract by the amount of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27 (a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

(1) The awarding of any Federal contract.

(2) The making of any Federal grant.

(3) The making of any Federal loan.

(4) The entering into of any cooperative agreement.

(5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

(1) An individual who is appointed to a position in the Government under Title 5, United States Code, including a position under a temporary appointment.

(2) A member of the uniformed services, as defined in subsection 101(3),Title 37, United States Code.

(3) A special Government employee, as defined in section 202, Title 18, United States Code.

(4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure.

(1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed

to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of $25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding $100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties.

(1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

(End of clause)

52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause--

“Postconsumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of “recovered material.” For paper and paper products, postconsumer material means “postconsumer fiber” defined by the U.S. Environmental Protection Agency (EPA) as--

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

“Printed or copied double-sided” means printing or reproducing a document so that information is on both sides of a sheet of paper.

“Recovered material,” for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as “recovered fiber” and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as--

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debars Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of the $25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed $25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principles, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs). The notice must include the following:

(1) The name of the subcontractor.

(2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

(End of clause)

52.214-27 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA - MODIFICATIONS - SEALED BIDDING. (OCT 1997)

(a) This clause shall become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for the submission of cost or pricing data at FAR 15.403-4(a)(1), except that this clause does not apply to a modification if an exception under FAR 15.403-1(b) applies.

(1) Based on adequate price competition;

(2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(3) Set by law or regulation.

(b) If any price, including profit, negotiated in connection with any modification under this clause, was increased by any significant amount because

(1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data;

(2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data; or

(3) any of these parties furnished data of any description that were not accurate, the price shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) above.

(c) Any reduction in the contract price under paragraph (b) above due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which:

(1) the actual subcontract; or

(2) the actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(d) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made:

(1) the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted;

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer;

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract; or

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2) Except as prohibited by subdivision (d)(2)(ii) of this clause:

(i) an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if:

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the date of agreement on the price of the contract (or price of the modification) and that the data were not submitted before such date.

(ii) An offset shall not be allowed if:

(A) The understated data was known by the Contractor to be understated when the Certificate of Current Cost or Pricing Data was signed; or (B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the date of agreement on price.

(e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid:

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

(2) A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data which were incomplete, inaccurate, or noncurrent.

(End of clause)

52.214-28 SUBCONTRACTOR COST OR PRICING DATA - MODIFICATIONS - SEALED BIDDING. (OCT 1997)

(a) The requirements of paragraphs (b) and (c) of this clause shall:

(1) become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at (FAR) 48 CFR 15.403-4(a)(1); and

(2) be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modifications involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1(b) applies.

(1) Based on adequate price competition;

(2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(3) Set by law or regulation.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in subsection 15.406-2 of the Federal Acquisition Regulation that, to the best of its knowledge and belief, the data submitted under paragraph (b) above were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(d) The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that, when entered into, exceeds the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1).

(End of clause)

52.215-21 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) Exceptions from cost or pricing data. (1) In lieu of submitting cost or pricing data for modifications under this contract, for price adjustments expected to exceed the threshold set forth at FAR 15.403-4 on the date of the agreement on price or the date of the award, whichever is later, the Contractor may submit a written request for exception by submitting the information described in the following subparagraphs. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an exception should be granted, and whether the price is fair and reasonable--

(i) Identification of the law or regulation establishing the price offered. If the price is controlled under law by periodic rulings, reviews, or similar actions of a governmental body, attach a copy of the controlling document, unless it was previously submitted to the contracting office.

(ii) Information on modifications of contracts or subcontracts for commercial items. (A) If--

(1) The original contract or subcontract was granted an exception from cost or pricing data requirements because the price agreed upon was based on adequate price competition or prices set by law or regulation, or was a contract or subcontract for the acquisition of a commercial item; and

(2) The modification (to the contract or subcontract) is not exempted based on one of these exceptions, then the Contractor may provide information to establish that the modification would not change the contract or subcontract from a contract or subcontract for the acquisition of a commercial item to a contract or subcontract for the acquisition of an item other than a commercial item.

(B) For a commercial item exception, the Contractor shall provide, at a minimum, information on prices at which the same item or similar items have previously been sold that is adequate for evaluating the reasonableness of the price of the modification. Such information may include--

(1) For catalog items, a copy of or identification of the catalog and its date, or the appropriate pages for the offered items, or a statement that the catalog is on file in the buying office to which the proposal is being submitted. Provide a copy or describe current discount policies and price lists (published or unpublished), e.g., wholesale, original equipment manufacturer, or reseller. Also explain the basis of each offered price and its relationship to the established catalog price, including how the proposed price relates to the price of recent sales in quantities similar to the proposed quantities.

(2) For market-priced items, the source and date or period of the market quotation or other basis for market price, the base amount, and applicable discounts. In addition, describe the nature of the market.

(3) For items included on an active Federal Supply Service Multiple Award Schedule contract, proof that an exception has been granted for the schedule item.

(2) The Contractor grants the Contracting Officer or an authorized representative the right to examine, at any time before award, books, records, documents, or other directly pertinent records to verify any request for an exception under this clause, and the reasonableness of price. For items priced using catalog or market prices, or law or regulation , access does not extend to cost or profit information or other data relevant solely to the Contractor's determination of the prices to be offered in the catalog or marketplace.

(b) Requirements for cost or pricing data. If the Contractor is not granted an exception from the requirement to submit cost or pricing data, the following applies:

(1) The Contractor shall submit cost or pricing data and supporting attachments in accordance with Table 15-2 of FAR 15.408.

As soon as practicable after agreement on price, but before award (except for unpriced actions), the Contractor shall submit a Certificate of Current Cost or Pricing Data, as prescribed by FAR 15.406-2.

(End of clause)

52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except--

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer.

These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

___ Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (JAN 2002)--ALTERNATE I (OCT 2001).

(a) This clause does not apply to small business concerns.

(b) Definitions. As used in this clause--

Commercial item means a product or service that satisfies the definition of commercial item in section 2.101 of the Federal Acquisition Regulation.

Commercial plan means a subcontracting plan (including goals) that covers the offeror's fiscal year and that applies to the entire production of commercial items sold by either the entire company or a portion thereof (e.g., division, plant, or product line).

Individual contract plan means a subcontracting plan that covers the entire contract period (including option periods), applies to a specific contract, and has goals that are based on the offeror's planned subcontracting in support of the specific contract, except that indirect costs incurred for common or joint purposes may be allocated on a prorated basis to the contract.

Master plan means a subcontracting plan that contains all the required elements of an individual contract plan, except goals, and may be incorporated into individual contract plans, provided the master plan has been approved.

Subcontract means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(c) The apparent low bidder, upon request by the Contracting Officer, shall submit a subcontracting plan, where applicable, that separately addresses subcontracting with small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns. If the bidder is submitting an individual contract plan, the plan must separately address subcontracting with small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns, with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the

resultant contract. The subcontracting plan shall be submitted within the time specified by the Contracting Officer. Failure to submit the subcontracting plan shall make the bidder ineligible for the award of a contract.

(d) The offeror's subcontracting plan shall include the following:

(1) Goals, expressed in terms of percentages of total planned subcontracting dollars, for the use of small business, veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. The offeror shall include all subcontracts that contribute to contract performance, and may include a proportionate share of products and services that are normally allocated as indirect costs.

(2) A statement of--

(i) Total dollars planned to be subcontracted for an individual contract plan; or the offeror's total projected sales, expressed in dollars, and the total value of projected subcontracts to support the sales for a commercial plan;

(ii) Total dollars planned to be subcontracted to small business concerns;

(iii) Total dollars planned to be subcontracted to veteran-owned small business concerns;

(iv) Total dollars planned to be subcontracted to HUBZone small business concerns;

(v) Total dollars planned to be subcontracted to small disadvantaged business concerns; and

(vi) Total dollars planned to be subcontracted to women-owned small business concerns.

(3) A description of the principal types of supplies and services to be subcontracted, and an identification of the types planned for subcontracting to--

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) HUBZone small business concerns;

(iv) Small disadvantaged business concerns; and

(v) Women-owned small business concerns.

(4) A description of the method used to develop the subcontracting goals in paragraph (d)(1) of this clause.

(5) A description of the method used to identify potential sources for solicitation purposes (e.g., existing company source lists, the Procurement Marketing and Access Network (PRO-Net) of the Small Business Administration (SBA), veterans service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or small, HUBZone, small disadvantaged, and women-owned small business trade associations). A firm may rely on the information contained in PRO-Net as an accurate representation of a concern's size and ownership characteristics for the purposes of maintaining a small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business source list. Use of PRO-Net as its source list does not relieve a firm of its responsibilities (e.g., outreach, assistance, counseling, or publicizing subcontracting opportunities) in this clause.

(6) A statement as to whether or not the offeror in included indirect costs in establishing subcontracting goals, and a description of the method used to determine the proportionate share of indirect costs to be incurred with—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) HUBZone small business concerns;

(iv) Small disadvantaged business concerns; and

(v) Women-owned small business concerns.

(7) The name of the individual employed by the offeror who will administer the offeror's subcontracting program, and a description of the duties of the individual.

(8) A description of the efforts the offeror will make to assure that small business, veteran-owned small business, HUBZone small business, small disadvantaged business and women-owned small business concerns have an equitable opportunity to compete for subcontracts.

(9) Assurances that the offeror will include the clause of this contract entitled ``Utilization of Small Business Concerns'' in all subcontracts that offer further subcontracting opportunities, and that the offeror will require all subcontractors (except small business concerns) that receive subcontracts in excess of $500,000 ($1,000,000 for construction of any public facility) to adopt a subcontracting plan that complies with the requirements of this clause.

(10) Assurances that the offeror will--

(i) Cooperate in any studies or surveys as may be required;

(ii) Submit periodic reports so that the Government can determine the extent of compliance by the offeror with the subcontracting plan;

(iii) Submit Standard Form (SF) 294, Subcontracting Report for Individual Contracts, and/or SF 295, Summary Subcontract Report, in accordance with paragraph (j) of this clause. The reports shall provide information on subcontract awards to small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, small disadvantaged business concerns, women-owned small business concerns, and Historically Black Colleges and Universities and Minority Institutions. Reporting shall be in accordance with the instructions on the forms or as provided in agency regulations.

(iv) Ensure that its subcontractors agree to submit SF 294 and SF 295.

(11) A description of the types of records that will be maintained concerning procedures that have been adopted to comply with the requirements and goals in the plan, including establishing source lists; and a description of the offeror's efforts to locate small business, veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns and award subcontracts to them. The records shall include at least the following (on a plant-wide or company-wide basis, unless otherwise indicated)

(i) Source lists (e.g., PRO-Net), guides, and other data that identify small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns.

(ii) Organizations contacted in an attempt to locate sources that are small business, veteran-owned small business, HUBZone small business, small disadvantaged business, or women-owned small business concerns.

(iii) Records on each subcontract solicitation resulting in an award of more than $100,000, indicating--

(A) Whether small business concerns were solicited and, if not, why not;

(B) Whether veteran-owned small business concerns were solicited and, if not, why not;

(C) Whether HUBZone small business concerns were solicited and, if not, why not;

(D) Whether small disadvantaged business concerns were solicited and, if not, why not;

(E) Whether women-owned small business concerns were solicited and, if not, why not; and

(F) If applicable, the reason award was not made to a small business concern.

(iv) Records of any outreach efforts to contact--

(A) Trade associations;

(B) Business development organizations;

(C) Conferences and trade fairs to locate small, HUBZone small, small disadvantaged, and women-owned small business sources; and

(D) Veterans service organizations.

(v) Records of internal guidance and encouragement provided to buyers through--

(A) Workshops, seminars, training, etc.; and

(B) Monitoring performance to evaluate compliance with the program's requirements.

(vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor. Contractors having commercial plans need not comply with this requirement.

(e) In order to effectively implement this plan to the extent consistent with efficient contract performance, the Contractor shall perform the following functions:

(1) Assist small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(2) Provide adequate and timely consideration of the potentialities of small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns in all ``make-or-buy'' decisions.

(3) Counsel and discuss subcontracting opportunities with representatives of small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business firms.

(4) Provide notice to subcontractors concerning penalties and remedies for misrepresentations of business status as small, veteran-owner small business, HUBZone small, small disadvantaged, or women-owned small business for the purpose of obtaining a subcontract that is to be included as part or all of a goal contained in the Contractor's subcontracting plan.

(f) A master plan on a plant or division-wide basis that contains all the elements required by paragraph (d) of this clause, except goals, may be incorporated by reference as a part of the subcontracting plan required of the offeror by this clause; provided--
(1) the master plan has been approved, (2) the offeror ensures that the master plan is updated as necessary and provides copies of the approved master plan, including evidence of its approval, to the Contracting Officer, and (3) goals and any deviations from the master plan deemed necessary by the Contracting Officer to satisfy the requirements of this contract are set forth in the individual subcontracting plan.

(g) A commercial plan is the preferred type of subcontracting plan for contractors furnishing commercial items. The commercial plan shall relate to the offeror's planned subcontracting generally, for both commercial and Government business, rather than solely to the Government contract. Commercial plans are also preferred for subcontractors that provide commercial items under a prime contract, whether or not the prime contractor is supplying a commercial item.

(h) Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the Contracting Officer in determining the responsibility of the offeror for award of the contract.

(i) The failure of the Contractor or subcontractor to comply in good faith with (1) the clause of this contract entitled "Utilization Of Small Business Concerns," or (2) an approved plan required by this clause, shall be a material breach of the contract.

(j) The Contractor shall submit the following reports:

(1) Standard Form 294, Subcontracting Report for Individual Contracts. This report shall be submitted to the Contracting Officer semiannually and at contract completion. The report covers subcontract award data related to this contract. This report is not required for commercial plans.

(2) Standard Form 295, Summary Subcontract Report. This report encompasses all of the contracts with the awarding agency. It must be submitted semi-annually for contracts with the Department of Defense and annually for contracts with civilian agencies. If the reporting activity is covered by a commercial plan, the reporting activity must report annually all subcontract awards under that plan. All reports submitted at the close of each fiscal year (both individual and commercial plans) shall include a breakout, in the Contractor's format, of subcontract awards, in whole dollars, to small disadvantaged business concerns by North American Industry Classification System (NAICS) Industry Subsector. For a commercial plan, the Contractor may obtain from each of its subcontractors a predominant NAICS Industry Subsector and report all awards to that subcontractor under its predominant NAICS Industry Subsector.

(End of clause)

52.219-16 LIQUIDATED DAMAGES-SUBCONTRACTING PLAN (JAN 1999)

(a) Failure to make a good faith effort to comply with the subcontracting plan, as used in this clause, means a willful or intentional failure to perform in accordance with the requirements of the subcontracting plan approved under the clause in this contract entitled "Small Business Subcontracting Plan," or willful or intentional action to frustrate the plan.

(b) Performance shall be measured by applying the percentage goals to the total actual subcontracting dollars or, if a commercial plan is involved, to the pro rata share of actual subcontracting dollars attributable to Government contracts covered by the commercial plan. If, at contract completion or, in the case of a commercial plan, at the close of the fiscal year for which the plan is applicable, the Contractor has failed to meet its subcontracting goals and the Contracting Officer decides in accordance with paragraph (c) of this clause that the Contractor failed to make a good faith effort to comply with its subcontracting plan, established in accordance with the clause in this contract entitled

“Small Business Subcontracting Plan,” the Contractor shall pay the Government liquidated damages in an amount stated. The amount of probable damages attributable to the Contractor's failure to comply shall be an amount equal to the actual dollar amount by which the Contractor failed to achieve each subcontract goal.

(c) Before the Contracting Officer makes a final decision that the Contractor has failed to make such good faith effort, the Contracting Officer shall give the Contractor written notice specifying the failure and permitting the Contractor to demonstrate what good faith efforts have been made and to discuss the matter. Failure to respond to the notice may be taken as an admission that no valid explanation exists. If, after consideration of all the pertinent data, the Contracting Officer finds that the Contractor failed to make a good faith effort to comply with the subcontracting plan, the Contracting Officer shall issue a final decision to that effect and require that the Contractor pay the Government liquidated damages as provided in paragraph (b) of this clause.

(d) With respect to commercial plans, the Contracting Officer who approved the plan will perform the functions of the Contracting Officer under this clause on behalf of all agencies with contracts covered by the commercial plan.

(e) The Contractor shall have the right of appeal, under the clause in this contract entitled Disputes, from any final decision of the Contracting Officer.

(f) Liquidated damages shall be in addition to any other remedies that the Government may have.

(End of clause)

52.222-3 CONVICT LABOR (AUG 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. This limitation, however, shall not prohibit the employment by the Contractor in the performance of this contract of persons on parole or probation to work at paid employment during the term of their sentence or persons who have been pardoned or who have served their terms. Nor shall it prohibit the employment by the Contractor in the performance of this contract of persons confined for violation of the laws of any of the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

(a)(1) The worker is paid or is in an approved work training program on a voluntary basis;

(2) Representatives of local union central bodies or similar labor union organizations have been consulted;

(3) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services; and

(4) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and

(b) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

(End of clause)

52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION. (SEP 2000)

(a) Overtime requirements. No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.

(b) Violation; liability for unpaid wages; liquidated damages. The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of $10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.

(c) Withholding for unpaid wages and liquidated damages. The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.

(d) Payrolls and basic records.

(1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act.

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) Subcontracts. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding $100,000 and require subcontractors to include these provisions in any lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

(End of clause)

52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular

contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b)(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(d) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or

program.

(End of clause)

52.222-7 WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(End of clause)

52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the clause entitled Davis-Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b)(1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(End of clause)

52.222-9 APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of

Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(End of clause)

52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(End of clause)

52.222-11 SUBCONTRACTS (LABOR STANDARDS (FEB 1988)

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act-Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination-Debarment, Disputes Concerning Labor Standards, Compliance with Davis-Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b)(1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and

dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(2) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

(End of clause)

52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis-Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

(End of clause)

52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

(End of clause)

52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(End of clause)

52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

(a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(End of clause)

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

(a) Segregated facilities, as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

52.222-26 EQUAL OPPORTUNITY (APR 2002)

(a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of $10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective

bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of clause)

52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions. "Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee.

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the

employer's quarterly federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade, each such subcontract in excess of $10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each

construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

(6) Disseminate the Contractor's equal employment policy by--

(i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;

(ii) Including the policy in any policy manual and in collective bargaining agreements;

(iii) Publicizing the policy in the company newspaper, annual report, etc.;

(iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and

(v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

(7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.

(9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such

as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.

(11) Validate all tests and other selection requirements where required under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.

(13) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user rest rooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

(15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.

(h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1) through (16) of this clause, provided the Contractor--

(1) Actively participates in the group;

(2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;

(3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;

(4) Makes a good-faith effort to meet its individual goals and timetables; and

(5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.

(j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

(k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.

(m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.

(n) The Contractor shall designate a responsible official to--

(1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;

(2) Submit reports as may be required by the Government; and

(3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(End of clause)

52.222-35 EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Definitions. As used in this clause--

All employment openings means all positions except executive and top management, those positions that will be filled from within the Contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days duration, and part-time employment.

Executive and top management means any employee--

(1) Whose primary duty consists of the management of the enterprise in which the individual is employed or of a customarily recognized department or subdivision thereof;

(2) Who customarily and regularly directs the work of two or more other employees;

(3) Who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight;

(4) Who customarily and regularly exercises discretionary powers; and

(5) Who does not devote more than 20 percent or, in the case of an employee of a retail or service establishment, who does not devote more than 40 percent of total hours of work in the work week to activities that are not directly and closely related to the performance of the work described in paragraphs (1) through (4) of this definition. This paragraph (5) does not apply in the case of an employee who is in sole charge of an establishment or a physically separated branch establishment, or who owns at least a 20 percent interest in the enterprise in which the individual is employed.

Other eligible veteran means any other veteran who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

Positions that will be filled from within the Contractor's organization means employment openings for which the Contractor will give no consideration to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings the Contractor proposes to fill from regularly established “recall” lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Qualified special disabled veteran means a special disabled veteran who satisfies the requisite skill, experience, education, and other job-related requirements of the employment position such veteran holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position.

Special disabled veteran means--

(1) A veteran who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Department of Veterans Affairs for a disability--

(i) Rated at 30 percent or more; or

(ii) Rated at 10 or 20 percent in the case of a veteran who has been determined under 38 U.S.C. 3106 to have a serious employment handicap (i.e., a significant impairment of the veteran's ability to prepare for, obtain, or retain employment consistent with the veteran's abilities, aptitudes, and interests); or

(2) A person who was discharged or released from active duty because of a service-connected disability.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days and was discharged or released from active duty with other than a dishonorable discharge, if any part of such active duty occurred--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases; or

(2) Was discharged or released from active duty for a service-connected disability if any part of the active duty was performed--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases.

(b) General. (1) The Contractor shall not discriminate against the individual because the individual is a special disabled veteran, a veteran of the Vietnam era, or other eligible veteran, regarding any position for which the employee or applicant for employment is qualified. The Contractor shall take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans without discrimination based upon their disability or veterans' status in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;

(iii) Rate of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C. 3687, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended (38 U.S.C. 4211 and 4212).

(c) Listing openings. (1) The Contractor shall immediately list all employment openings that exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract, and including those occurring at an establishment of the Contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local public employment service office of the State wherein the opening occurs. Listing employment openings with the U.S. Department of Labor's America's Job Bank shall satisfy the requirement to list jobs with the local employment service office.

(2) The Contractor shall make the listing of employment openings with the local employment service office at least concurrently with using any other recruitment source or effort and shall involve the normal obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing of employment openings does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(3) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State public employment agency in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State agency, it need not advise the State agency of subsequent contracts. The Contractor may advise the State agency when it is no longer bound by this contract clause.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, the Virgin Islands of the United States, and Wake Island.

(e) Postings. (1) The Contractor shall post employment notices in conspicuous places that are available to employees and applicants for employment.

(2) The employment notices shall--

(i) State the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans, veterans of the Vietnam era, and other eligible veterans; and

(ii) Be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary of Labor), and provided by or through the Contracting Officer.

(3) The Contractor shall ensure that applicants or employees who are special disabled veterans are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled veteran, or may lower the posted notice so that it can be read by a person in a wheelchair).

(4) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement, or other contract understanding, that the Contractor is bound by the terms of the Act and is committed to take affirmative action to employ, and advance in employment, qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, the Government may take appropriate actions under the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(g) Subcontracts. The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of $25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Deputy Assistant Secretary of Labor to enforce the terms, including action for noncompliance.

(End of clause)

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings. (1) The Contractor agrees to post employment notices stating--

(i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and

(ii) The rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of $10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-37 EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The number of disabled veterans and the number of veterans of the Vietnam era in the workforce of the contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of that total, the number of disabled veterans, and the number of veterans of the Vietnam era.

(b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."

(c) Reports shall be submitted no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date: (1) As of the end of any pay period during the period January through March 1st of the year the report is due, or (2) as of December 31, if the contractor has previous written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The count of veterans reported according to paragraph (a) of this clause shall be based on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that the information is voluntarily provided; that the information will be kept confidential; that disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and that the information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of $10,000 or more unless exempted by rules, regulations, or orders of the Secretary.

(End of clause)

52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (APR 1998)

(a) Executive Order 12856 of August 3, 1993, requires Federal facilities to comply with the provisions of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)(42 U.S.C. 11001-11050) and the Pollution Prevention Act of 1990 (PPA)(42 U.S.C. 13101-13109).

(b) The Contractor shall provide all information needed by the Federal facility to comply with the emergency planning reporting requirements of Section 302 of EPCRA; the emergency notice requirements of Section 304 of EPCRA; the list of Material Safety Data Sheets required by Section 311 of EPCRA; the emergency and hazardous chemical inventory forms of Section 312 of EPCRA; the toxic chemical release inventory of Section 313 of EPCRA, which includes the reduction and recycling information required by Section 6607 of PPA; and the toxic chemical reduction goals requirements of Section 3-302 of Executive Order 12856.

(End of clause)

52.223-6 DRUG-FREE WORKPLACE (MAY 2001)

(a) Definitions. As used in this clause --

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to deter- mine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall-- within 30 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

(i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) though (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.506, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

(End of clause)

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor owned or operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if--

(1) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(5) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed $100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding $100,000 (including all options), the substance of this clause, except this paragraph (e).

(End of clause)

52.225-9 BUY AMERICAN ACT—CONSTRUCTION MATERIALS (MAY 2002)

(a) Definitions. As used in this clause--

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

United States means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) Domestic preference. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows: “none”

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before

contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\
Item 1			
Foreign construction material....	.....	.....	.....
Domestic construction material...	.....	.....	.....
Item 2			
Foreign construction material....	.....	.....	.....
Domestic construction material...	.....	.....	.....

Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).
List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.
Include other applicable supporting information.

(End of clause)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold (however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.)

(End of clause)

52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(1) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at (FAR) 2.101.to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

(End of clause)

52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and

sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

(c) The amount of the bid guarantee shall be 20% percent of the bid price or $3,000,000, whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of clause)

52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

(a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government.

(b) Any surety fails to furnish reports on its financial condition as required by the Government;

(c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or

(d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least 30 days before an ILC's scheduled expiration, the Contracting officer has the right to immediately draw on the ILC.

(End of clause)

52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997)

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

(b) Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective (1) for such period as the laws of the State in which this contract is to be performed prescribe, or (2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all

subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

(End of clause)

52.228-11 PLEDGES OF ASSETS (FEB 1992)

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond--

(1) Pledge of assets; and

(2) Standard Form 28, Affidavit of Individual Surety.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of--

(1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form) and/or;

(2) A recorded lien on real estate. The offeror will be required to provide--

(i) Evidence of title in the form of a certificate of title prepared by a title insurance company approved by the United States Department of Justice. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);

(ii) Evidence of the amount due under any encumbrance shown in the evidence of title;

(iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

(End of clause)

52.228-12 PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS. (OCT 1995)

In accordance with Section 806(a)(3) of Pub. L. 102-190, as amended by Sections 2091 and 8105 of Pub. L. 103-355, upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the performance of this contract for which a payment bond has been furnished to the Government pursuant to the Miller Act, the Contractor shall promptly provide a copy of such payment bond to the requester.

(End of clause)

52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) “Irrevocable letter of credit” (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor

the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and--

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration date that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institutions rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of less than $25 million in the past year, ILCs over $5 million must be confirmed by another acceptable financial institution that had letter of credit business of less than $25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

_____

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date _____

IRREVOCABLE LETTER OF CREDIT NO. _____

Account party's name _____

Account party's address _____

For Solicitation No. _____(for reference only)

TO: [U.S. Government agency]

[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States $_____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.

2. We hereby undertake to honor your or the transferee's sight draft(s) drawn on the issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

_____

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

_____

[Confirming Financial Institution's Letterhead or Name and Address]

(Date) _____

Our Letter of Credit Advice Number _____

Beneficiary: _____ [U.S. Government agency]

Issuing Financial Institution: _____

Issuing Financial Institution's LC No.: _____

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by _____ [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. $_____ and expiring with our close of business on _____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

_____

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

_____

[City, State]

(Date) _____

[Name and address of financial institution]

Pay to the order of _____ [Beneficiary Agency] _____ the sum of United States $_____.
This draft is drawn under Irrevocable Letter of Credit No. _____.

_____

[Beneficiary Agency]

By: _____

(End of clause)

52.228-15 PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (JUL 2000)-

(a) Definitions. As used in this clause--

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is $100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch, 401 14th Street, NW, 2nd Floor, West Wing, Washington, DC 20227.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 270b(c). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

52.229-3 FEDERAL, STATE, AND LOCAL TAXES (JAN 1991)

(a) "Contract date," as used in this clause, means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties," as used in this clause, means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax," as used in this clause, means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.
"After-relieved Federal tax," as used in this clause, means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds $250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

(End of clause)

52.229-5 TAXES--CONTRACTS PERFORMED IN U.S. POSSESSIONS OR PUERTO RICO (APR 1984)

The term "local taxes," as used in the Federal, State, and local taxes clause of this contract, includes taxes imposed by a possession of the United States or by Puerto Rico.

(End of clause)

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (SEP 2002)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

_____

(Name)

_____

(Title)

_____

(Date)

(d) Refund of unearned amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for bond premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against
the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation because of undefinitized work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

(End of clause)

52.232-17 INTEREST (JUNE 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid. reproduce, prepare derivative works, distribute copies to the public, and (b) Amounts shall be due at the earliest of the following dates:

(1) The date fixed under this contract.

(2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.

(3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.

(4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.

(c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

(End of clause)

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

(End of clause)

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (FEB 2002)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project.

(A) The due date for making such payments is 14 days after the designated billing office receives a proper payment request. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract).

(A) The due date for making such payments is the later of the following two events:

(1) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(2) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of $1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor clause flowdown. A clause requiring each subcontractor to use:

(i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and

(ii) Require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without

incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a Contractor pursuant to paragraph (d)(3)(i) of this clause.

(e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--

(1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to paragraph (e)(1) of this clause;

(3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (e)(1) of this clause;

(4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph
(e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--

(A) The amounts withheld under paragraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under paragraph (e)(5)(i) of this clause.

(f) Third-party deficiency reports--(1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a “second-tier subcontractor”) a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under paragraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts DisputesAct of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written notice of subcontractor withholding. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying--

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the Government is a party. The Government may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) Overpayments. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term “EFT” refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Contractor EFT arrangements. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.233-1 DISPUTES. (JUL 2002)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) Claim, as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding $100,000 is not a claim under the Act until certified. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2)(i) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -

(A) Exceeding $100,000; or

(B) Regardless of the amount claimed, when using -

(1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or

(2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of $100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over $100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative disput resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month

period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

(End of clause)

52.233-3 PROTEST AFTER AWARD (AUG. 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

(End of clause)

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

(End of clause)

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

(End of clause)

52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

(End of clause)

52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the worksite a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

(End of clause)

52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or

property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

(End of clause)

52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

(End of clause)

52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

(End of clause)

52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the

Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

(End of clause)

52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

(End of clause)

52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

(End of clause)

52.236-13 ACCIDENT PREVENTION (NOV 1991) – ALTERNATE I (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will

(1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) avoid interruptions of Government operations and delays in project completion dates; and

(3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall-

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

(f) Before commencing the work, the Contractor shall-

(1) Submit a written proposed plan for implementing this clause. The plan shall include an analysis of the significant hazards to life, limb, and property inherent in contract work performance and a plan for controlling these hazards; and

(2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

(End of clause)

52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing

so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

(End of clause)

52.236-17 LAYOUT OF WORK (APR 1984)

The Contractor shall lay out its work from Government established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

(End of clause)

52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by," or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

(End of clause)

52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

(End of clause)

52.239-4001 Year 2000 Compliance

The contractor shall ensure products provided under this contract, to include hardware, software, firmware, and middleware, whether acting alone or combined as a system, are Year 2000 compliant as defined as follows: Year 2000 compliant means with respect to information technology, that the information technology accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information, used in combination with the information technology being acquired, properly exchanges date/time data with it.

52.239-4005 Year 2000 Compliance - Construction Contracts

a. In accordance with FAR 39.106, the contractor shall ensure that with respect to any design, construction, goods, or services under this contract as well as any subsequent task/delivery orders issued under this contract (if applicable), all information technology contained therein shall be Year 2000 compliant. Specifically:

The contractor shall:

(1) Perform, maintain, and provide an inventory of all major components to include structures, equipment, items, parts, and furnishings under this contract and each task/delivery order which may be affected by the Y2K compliance requirement.

(2) Indicate whether each component is currently Year 2000 compliant or requires an upgrade for compliance prior to government acceptance.

(End of Clause)

52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

(End of clause)

52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that

performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract. (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

(End of clause)

52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

(1) In the specifications (including drawings and designs);

(2) In the method or manner of performance of the work;

(3) In the Government-furnished facilities, equipment, materials, services, or site; or

(4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating

(1) the date, circumstances, and source of the order and

(2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after

(1) receipt of a written change order under paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

(End of clause)

52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000) - ALTERNATE I (APR 1984)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that--

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--

(i) In deliverable end item quantities only; or

(ii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) A separate, detailed cost estimate for (i) the affected portions of the existing contract requirement and (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.

(4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(5) A prediction of any effects the proposed change would have on collateral costs to the agency.

(6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) Government action. (1) The Contracting Officer shall notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer shall notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer shall notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing.

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by (i) 45 percent for fixed-price contracts or (ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of $50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any

subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(h) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering--Construction clause of contract . . . . . , shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(j) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or $100,000, whichever is greater. The Contracting Officer will be the sole determiner of the amount of collateral savings.

(End of clause)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996) - ALTERNATE I (SEP 1996)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all subcontracts to the extent they relate to the work terminated.

(4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b)(6) of this clause; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (f) of this clause:

(1) For contract work performed before the effective date of termination, the total (without duplication of any items) of--

(i) The cost of this work;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(1)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(1)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(2) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m)(1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

(End of clause)

52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if--

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

(i) acts of God or of the public enemy,

(ii) acts of the Government in either its sovereign or contractual capacity,

(iii) acts of another Contractor in the performance of a contract with the Government,

(iv) fires,

(v) floods,

(vi) epidemics,

(vii) quarantine restrictions,

(viii) strikes,

(ix) freight embargoes,

(x) unusually severe weather, or delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.253-1 COMPUTER GENERATED FORMS (JAN 1991)

(a) Any data required to be submitted on a Standard or Optional Form prescribed by the Federal Acquisition Regulation (FAR) may be submitted on a computer generated version of the form, provided there is no change to the name, content, or sequence of the data elements on the form, and provided the form carries the Standard or Optional Form number and edition date.

(b) Unless prohibited by agency regulations, any data required to be submitted on an agency unique form prescribed by an agency supplement to the FAR may be submitted on a computer generated version of the form provided there is no change to the name, content, or sequence of the data elements on the form and provided the form carries the agency form number and edition date.

(c) If the Contractor submits a computer generated version of a form that is different than the required form, then the rights and obligations of the parties will be determined based on the content of the required form.

(End of clause)

252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) "Definition. Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT-RELATED FELONIES (MAR 1999)

(a) Definitions. As used in this clause—

(1) "Arising out of a contract with the DoD" means any act in connection with—

(i) Attempting to obtain;

(ii) Obtaining, or

(iii) Performing a contract or first-tier subcontract of any agency, department, or component of the Department of Defense (DoD).

(2) "Conviction of fraud or any other felony" means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of *nolo contendere*, for which sentence has been imposed.

(3) "Date of conviction" means the date judgment was entered against the individual.

(b) Any individual who is convicted after September 29, 1988, of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--

(1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) On the board of directors of any DoD contractor or first-tier subcontractor;

(3) As a consultant, agent, or representative for any DoD contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than 5 years from the date of conviction.

(d) 10 U.S.C. 2408 provides that a defense contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than $500,000 if convicted of knowingly—

(1) Employing a person under a prohibition specified in paragraph (b) of this clause; or

(2) Allowing such a person to serve on the board of directors of the contractor or first-tier subcontractor.

(e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as—

(1) Suspension or debarment;

(2) Cancellation of the contract at no cost to the Government; or

(3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify—

(1) The person involved;

(2) The nature of the conviction and resultant sentence or punishment imposed;

(3) The reasons for the requested waiver; and

(4) An explanation of why a waiver is in the interest of national security.

(g) The Contractor agrees to include the substance of this clause, appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.

(h) Pursuant to 10 U.S.C. 2408(c), defense contractors and subcontractors may obtain information as to whether a particular person has been convicted of fraud or any other felony arising out of a contract with the DoD by contacting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

(End of clause)

252.203-7002 DISPLAY OF DOD HOTLINE POSTER (DEC 1991)

(a) The Contractor shall display prominently in common work areas within business segments performing work under Department of Defense (DoD) contracts, DoD Hotline Posters prepared by the DoD Office of the Inspector General.

(b) DoD Hotline Posters may be obtained from the DoD Inspector General, ATTN: Defense Hotline, 400 Army Navy Drive, Washington, DC 22202-2884.

(c) The Contractor need not comply with paragraph (a) of this clause if it has established a mechanism, such as a hotline, by which employees may report suspected instances of improper conduct, and instructions that encourage employees to make such reports.

(End of clause)

252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the contractor.

(End of clause)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION (NOV 2001)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at http://www.ccr.gov.

(End of clause)

252.205-7000 PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS (DEC 1991)

(a) Definition.

"Cooperative agreement holder" means a State or local government; a private, nonprofit organization; a tribal organization (as defined in section 4(c) of the Indian Self-Determination and Education Assistance Act (Pub. L. 93-268; 25 U.S.C. 450 (c))); or an economic enterprise (as defined in section 3(e) of the Indian Financing Act of 1974 (Pub. L. 93-362; 25 U.S.C. 1452(e))) whether such economic enterprise is organized for profit or nonprofit purposes;

which has an agreement with the Defense Logistics Agency to furnish procurement technical assistance to business entities.

(b) The Contractor shall provide cooperative agreement holders, upon their request, with a list of those appropriate employees or offices responsible for entering into subcontracts under defense contracts. The list shall include the business address, telephone number, and area of responsibility of each employee or office.

(c) The Contractor need not provide the listing to a particular cooperative agreement holder more frequently than once a year.

(End of clause)

252.209-7000 ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ONSITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (NOV 1995)

(a) The Contractor shall not deny consideration for a subcontract award under this contract to a potential subcontractor subject to on-site inspection under the INF Treaty, or a similar treaty, solely or in part because of the actual or potential presence of Soviet inspectors at the subcontractor's facility, unless the decision is approved by the Contracting Officer.

(b) The Contractor shall incorporate this clause, including this paragraph (b), in all solicitations and contracts exceeding the simplified acquisition threshold in part 13 of the Federal Acquisition Regulation, except those for commercial items.

(End of clause)

252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of $25,000 with a firm, or subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

(End of clause)

252.219-7003 SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (DOD CONTRACTS) (APR. 1996)

This clause supplements the Federal Acquisition Regulation 52.219-9, Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, clause of this contract.

(a) *Definitions. Historically black colleges and universities,* as used in this clause, means institutions determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. The term also means any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institutions, as used in this clause, means institutions meeting the requirements of section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)). The term also includes Hispanic-serving institutions as defined in section 316(b)(1) of such Act (20 U.S.C. 1059c(b)(1)).

(b) Except for company or division-wide commercial items subcontracting plans, the term *small disadvantaged business,* when used in the FAR 52.219-9 clause, includes historically black colleges and universities and minority institutions, in addition to small disadvantaged business concerns.

(c) Work under the contract or its subcontracts shall be credited toward meeting the small disadvantaged business concern goal required by paragraph (d) of the FAR 52.219-9 clause when:

(1) It is performed on Indian lands or in joint venture with an Indian tribe or a tribally-owned corporation, and

(2) It meets the requirements of 10 U.S.C. 2323a.

(d) Subcontracts awarded to workshops approved by the Committee for Purchase from People Who are Blind or Severely Disabled (41 U.S.C. 46-48), may be counted toward the Contractor's small business subcontracting goal.

(e) A mentor firm, under the Pilot Mentor-Protege Program established under Section 831 of Pub. L. 101-510, as amended, may count toward its small disadvantaged business goal, subcontracts awarded--

(f) The master plan approval referred to in paragraph (f) of the FAR 52.219-9 clause is approval by the Contractor's cognizant contract administration activity.

(g) In those subcontracting plans which specifically identify small, small disadvantaged, and women-owned small businesses, the Contractor shall notify the Administrative Contracting Officer of any substitutions of firms that are not small, small disadvantaged, or women-owned small businesses for the firms listed in the subcontracting plan. Notifications shall be in writing and shall occur within a reasonable period of time after award of the subcontract. Contractor-specified formats shall be acceptable.

(End of clause)

252.223-7001 HAZARD WARNING LABELS (DEC 1991)

(a) "Hazardous material," as used in this clause, is defined in the Hazardous Material Identification and Material Safety Data clause of this contract.

(b) The Contractor shall label the item package (unit container) of any hazardous material to be delivered under this contract in accordance with the Hazard Communication Standard (29 CFR 1910.1200 et seq). The Standard requires that the hazard warning label conform to the requirements of the standard unless the material is otherwise subject to the labeling requirements of one of the following statutes:

(1) Federal Insecticide, Fungicide and Rodenticide Act;

(2) Federal Food, Drug and Cosmetics Act;

(3) Consumer Product Safety Act;

(4) Federal Hazardous Substances Act; or

(5) Federal Alcohol Administration Act.

(c) The Offeror shall list which hazardous material listed in the Hazardous Material Identification and Material Safety Data clause of this contract will be labeled in accordance with one of the Acts in paragraphs (b)(1) through (5) of this clause instead of the Hazard Communication Standard. Any hazardous material not listed will be interpreted to mean that a label is required in accordance with the Hazard Communication Standard.

MATERIAL (If None, Insert "None.")	ACT
_____	_____
_____	_____

(d) The apparently successful Offeror agrees to submit, before award, a copy of the hazard warning label for all hazardous materials not listed in paragraph (c) of this clause. The Offeror shall submit the label with the Material Safety Data Sheet being furnished under the Hazardous Material Identification and Material Safety Data clause of this contract.

(e) The Contractor shall also comply with MIL-STD-129, Marking for Shipment and Storage (including revisions adopted during the term of this contract).

(End of clause)

252.223-7006 PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS (APR 1993)

(a) "Definitions".

As used in this clause --

(1) "Storage" means a non-transitory, semi-permanent or permanent holding, placement, or leaving of material. It does not include a temporary accumulation of a limited quantity of a material used in or a waste generated or resulting from authorized activities, such as servicing, maintenance, or repair of Department of Defense (DoD) items, equipment, or facilities.

(2) "Toxic or hazardous materials" means:

(i) Materials referred to in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601(14)) and materials designated under section 102 of CERCLA (42 U.S.C. 9602) (40 CFR part 302);

(ii) Materials that are of an explosive, flammable, or pyrotechnic nature; or

(iii) Materials otherwise identified by the Secretary of Defense as specified in DoD regulations.

(b) In accordance with 10 U.S.C. 2692, the Contractor is prohibited from storing or disposing of non-DoD-owned toxic or hazardous materials on a DoD installation, except to the extent authorized by a statutory exception to 10 U.S.C. 2692 or as authorized by the Secretary of Defense or his designee.

(End of clause)

252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (APR 2002)

(a) Definitions. As used in this clause--

(1) Component means any item supplied to the Government as part of an end product or of another component.

(2) End product means supplies delivered under a line item of this contract.

(b) The Contractor shall deliver under this contract only such of the following items, either as end products or components, that have been grown, reprocessed, reused, or produced in the United States, its possessions, or Puerto Rico:

(1) Food.

(2) Clothing.

(3) Tents, tarpaulins, or covers.

(4) Cotton and other natural fiber products.

(5) Woven silk or woven silk blends.

(6) Spun silk yarn for cartridge cloth.

(7) Synthetic fabric, and coated synthetic fabric, including all textile fibers and yarns that are for use in such fabrics.

(8) Canvas products.

(9) Wool (whether in the form of fiber or yarn or contained in fabrics, materials, or manufactured articles).

(10) Any item of individual equipment (Federal Supply Class 8465) manufactured from or containing fibers, yarns, fabrics, or materials listed in this paragraph (b).

(c) This clause does not apply--

(1) To items listed in section 25.104(a) of the Federal Acquisition Regulation (FAR), or other items for which the Government has determined that a satisfactory quality and sufficient quantity cannot be acquired as and when needed at U.S. market prices;

(2) To end products incidentally incorporating cotton, other natural fibers, or wool, for which the estimated value of the cotton, other natural fibers, or wool--

(i) Is not more than 10 percent of the total price of the end product; and (ii) Does not exceed the simplified acquisition threshold in FAR part 2;

(3) To foods that have been manufactured or processed in the United States, its possessions, or Puerto Rico, regardless of where the foods (and any component if applicable) were grown or produced;

(4) To chemical warfare protective clothing produced in the countries listed in subsection 225.872-1 of the Defense FAR Supplement; or

(5) To fibers and yarns that are for use in synthetic fabric or coated synthetic fabric (but does apply to the synthetic or coated synthetic fabric itself), if--

(i) The fabric is to be used as a component of an end product that is not a textile product. Examples of textile products, made in whole or in part of fabric, include--

(A) Draperies, floor coverings, furnishings, and bedding (Federal Supply Group 72, Household and Commercial Furnishings and Appliances);

(B) Items made in whole or in part of fabric in Federal Supply Group 83, Textile/leather/furs/apparel/findings/ tents/flags, or Federal Supply Group 84, Clothing, Individual Equipment and Insignia;

(C) Upholstered seats (whether for household, office, or other use); and

(D) Parachutes (Federal Supply Class 1670); or

(ii) The fibers and yarns are para-aramid fibers and yarns manufactured in the Netherlands.

(End of clause)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions. As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concerns, as determined under regulations of the President.

(b) Certification. By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

(End of clause)

252.226-7001 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES-DOD CONTRACTS (SEP 2001)

(a) Definitions. As used in this clause--

“Indian” means any person who is a member of any Indian tribe, band, group, pueblo, or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any “Native” as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

“Indian organization” means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C. Chapter 17.

“Indian-owned economic enterprise” means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitutes not less than 51 percent of the enterprise.

“Indian tribe” means any Indian tribe, band, group, pueblo, or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1452 (c).

“Interested party” means a contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contract shall use its best efforts to give Indian organizations and Indian-owned economic enterprises the maximum practicable opportunity to participate in the subcontracts it awards, to the fullest extent consistent with efficient performance of the contract.

(c) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless and interested party challenges its status or the Contracting Officer has independent reason to question that status.

(d) In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the U.S. Department of the Interior, Bureau of Indian Affairs, Attn: Chief, Division of Contracting and Grants Administration, 1849 C Street NW, MS-2626-MIB, Washington, DC 20240-4000. The BIA will determine the eligibility and will notify the Contracting Officer. No incentive payment will be made--

(1) Within 59 working days of subcontract award;

(2) While a challenge is pending; or

(3) If a subcontractor is determined to be an ineligible participant.

(e)(1) The Contractor, on its own behalf or on behalf of a subcontractor at any tier, may request an adjustment under the Indian Incentive Program to the following:

(i) The estimated cost of cost-type contract.

(ii) The target cost of a cost-plus-incentive-fee contract.

(iii) The target cost and ceiling price of a fixed-price incentive contract.

(iv) The price of a firm-fixed-price contract.

(2) The amount of the adjustment that may be made to the contract is 5 percent of the estimated cost, target cost, or firm-fixed price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(3) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(4) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor.

(5) If the Contractor requests and receives an adjustment on behalf of a subcontractor, the Contractor is obligated to pay the subcontractor the adjustment.

(f) The Contractor shall insert the substance of this clause, including this paragraph (f), in all subcontracts that--

(1) Are for other than commercial items; and

(2) Are expected to exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation.

(End of clause)

252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR), allowability shall also be determined in accordance with part 231 of the Defense FAR Supplement, in effect on the date of this contract.

(End of clause)

252.236-7000 MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown --

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for --

(i) Material;

(ii) Labor;

(iii) Equipment;

(iv) Subcontracts; and

(v) Overhead; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

252.236-7004 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION (DEC 1991)

(a) The Government will pay all costs for the mobilization and demobilization of all of the Contractor's plant and

equipment at the contract lump sum price for this item.

(1) 60 percent of the lump sum price upon completion of the contractor's mobilization at the work site.

(2) The remaining 40 percent upon completion of demobilization.

(b) The Contracting Officer may require the Contractor to furnish cost data to justify this portion of the bid if the Contracting Officer believes that the percentages in paragraphs (a) (1) and (2) of this clause do not bear a reasonable relation to the cost of the work in this contract.

(1) Failure to justify such price to the satisfaction of the Contracting Officer will result in payment, as determined by the Contracting Officer, of --

(i) Actual mobilization costs at completion of mobilization;

(ii) Actual demobilization costs at completion of demobilization; and

(iii) The remainder of this item in the final payment under this contract.

(2) The Contracting Officer's determination of the actual costs in paragraph (b)(1) of this clause is not subject to appeal.

252.242-7004 MATERIAL MANAGEMENT AND ACCOUNTING SYSTEM (SEP 1996)

(a) Definitions. As used in this clause--

(1) Material management and accounting system means the Contractor's system or systems for planning, controlling, and accounting for the acquisition, use, issuing, and disposition of material. Material management and accounting systems may be manual or automated. They may be stand-alone systems or they may be integrated with planning, engineering, estimating, purchasing, inventory, accounting, or other systems.

(2) Valid time-phased requirements means material which is--

Needed to fulfill the production plan, including reasonable quantities for scrap, shrinkage, yield, etc.; and

(ii) Charged/billed to contracts or other cost objectives in a manner consistent with the need to fulfill the production plan.

(3) Contractor means a business unit as defined in section 31.001 of the Federal Acquisition Regulation (FAR).

(b) General. The Contractor agrees to--

(1) Maintain a material management and accounting system (MMAS) that--

(i) Reasonably forecasts material requirements;

(ii) Ensures that costs of purchased and fabricated material charged or allocated to a contract are based on valid time-phased requirements; and

(iii) Maintains a consistent, equitable, and unbiased logic for costing of material transactions.

(2) Assess its MMAS and take reasonable action to comply with the MMAS standards in paragraph (f) of this clause.

(c) Applicability. Paragraphs (d) and (e) of this clause apply only if the Contractor--

(1) Is a large business; and

(2) Received, in its fiscal year preceding award of this contract, Department of Defense prime contracts or subcontracts, and their modifications totaling--

(i) $70 million or more; or

(ii) $30 million or more (but less than $70 million), and is notified in writing by the Contracting Officer that paragraphs (d) and (e) apply.

(d) Disclosure, demonstration, and maintenance requirements. (1) The Contractor shall--

Disclose its MMAS to the Administrative Contracting Officer in writing; and

(ii) If requested by the Administrative Contracting Officer, demonstrate that the MMAS conforms to the standards in paragraph (f) of this clause.

(2) An MMAS disclosure is adequate when the Contractor has provided the Administrative Contracting Officer with documentation which--

(i) Accurately describes those policies, procedures, and practices that the Contractor currently uses in its MMAS; and

(ii) Provides sufficient detail for the Government to reasonably make an informed judgment regarding the adequacy of the MMAS.

(3) An MMAS demonstration is adequate when the Contractor has provided the Administrative Contracting Officer--

(i) Sufficient evidence to demonstrate the degree of compliance of its MMAS with the standards at paragraph (f) of this clause; and

(ii) Identification of any significant deficiencies, the estimated cost impact of the deficiency, and a comprehensive corrective action plan.

(4) The Contractor shall disclose significant changes in its MMAS to the Administrative Contracting Officer within 30 days of implementation.

(5) If the contractor desires the Government to protect such information as privileged or confidential, the Contractor shall--

(i) Notify the Government representative to whom the information is submitted, i.e., the ACO, or the auditor; and

(ii) Ensure an appropriate legend is on the face of the document(s) at the time of submission.

(e) Deficiencies. (1) If the Contractor receives a report which identifies deficiencies in its MMAS, the Contractor agrees to respond as follows--

(i) If the Contractor agrees with the report findings and recommendations, the Contractor shall--

(A) Within 30 days, state its agreement in writing; and

(B) Within 60 days, correct the deficiencies or submit a corrective action plan.

(ii) If the Contractor disagrees with the report findings and recommendations, the Contractor shall, within 30 days, state its rationale for each area of disagreement.

(2) The Administrative Contracting Officer shall evaluate the Contractor's response and notify the Contractor of the--

(i) Determination concerning remaining deficiencies;

(ii) Adequacy of any proposed or completed corrective action plan; and

(iii) Need for any new or revised corrective action plan.

(f) MMAS standards. MMAS systems shall have adequate internal accounting and administrative controls to ensure system and data integrity, and comply with the following:

(1) Have an adequate system description including policies, procedures, and operating instructions which comply with the Federal Acquisition Regulation and Defense FAR Supplement;

(2) Ensure that costs of purchased and fabricated material charged or allocated to a contract are based on valid time-phased requirements as impacted by minimum/economic order quantity restrictions--

(i) A 98 percent bill of material accuracy and a 95 percent master production schedule accuracy are desirable as a goal in order to ensure that requirements are both valid and appropriately time-phased.

(ii) If systems have accuracy levels below these, the Contractor shall demonstrate that--

(A) There is no material harm to the Government due to lower accuracy levels; and

(B) The cost to meet the accuracy goals is excessive in relation to the impact on the Government;

(3) Provide a mechanism to identify, report, and resolve system control weaknesses and manual override. Systems should identify operational exceptions such as excess/residual inventory as soon as known;

(4) Provide audit trails and maintain records (manual and those in machine readable form) necessary to evaluate system logic and to verify through transaction testing that the system is operating as desired;

(5) Establish and maintain adequate levels of record accuracy, and include reconciliation of recorded inventory quantities to physical inventory by part number on a periodic basis. A 95 percent accuracy level is desirable. If systems have an accuracy level below 95 percent, the Contractor shall demonstrate that--

(i) There is no material harm to the Government due to lower accuracy levels; and

(ii) The cost to meet the accuracy goal is excessive in relation to the impact on the Government;

(6) Provide detailed descriptions of circumstances which will result in manual or system generated transfers of parts;

(7) Maintain a consistent, equitable, and unbiased logic for costing of material transactions--

(i) The Contractor shall maintain and disclose written policies describing the transfer methodology and the loan/pay-back technique.

(ii) The costing methodology may be standard or actual cost, or any of the inventory costing methods in 48 CFR 9904.411-50(b). Consistency shall be maintained across all contract and customer types, and from accounting period

to accounting period for initial charging and transfer charging.

(iii) The system should transfer parts and associated costs within the same billing period. In the few instances where this may not be appropriate, the Contractor may accomplish the material transaction using a loan/pay-back technique. The “loan/pay-back technique” means that the physical part is moved temporarily from the contract, but the cost of the part remains on the contract. The procedures for the loan/pay-back technique must be approved by the Administrative Contracting Officer. When the technique is used, the Contractor shall have controls to ensure--

(A) Parts are paid back expeditiously;

(B) Procedures and controls are in place to correct any overbilling that might occur;

(C) Monthly, at a minimum, identification of the borrowing contract and the date the part was borrowed; and

(D) The cost of the replacement part is charged to the borrowing contract;

(8) Where allocations from common inventory accounts are used, have controls (in addition to those in paragraphs (b)(2) and (7) of this clause) to ensure that--

(i) Reallocations and any credit due are processed no less frequently than the routine billing cycle;

(ii) Inventories retained for requirements which are not under contract are not allocated to contracts; and

(iii) Algorithms are maintained based on valid and current data;

(9) Notwithstanding FAR 45.505-3(f)(1)(ii), have adequate controls to ensure that physically commingled inventories that may include material for which costs are charged or allocated to fixed-price, cost-reimbursement, and commercial contracts do not compromise requirements of any of the standards in paragraphs (f)(1) through (8) of this clause. Government furnished material shall not be--

(i) Physically commingled with other material; or

(ii) Used on commercial work; and

(10) Be subjected to periodic internal audits to ensure compliance with established policies and procedures.

(End of clause)

252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR part 31 and DFARS part 231, in effect on the date of this contract, apply.

252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation (FAR); and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to----

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAY 2002)

(a) Definitions. As used in this clause --

(1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.

(2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

(3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.

(4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.

(5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.

(6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and

vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--

(i) This contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Maritime Administration, Office of Cargo Preference, U.S. Department of Transportation, 400 Seventh Street SW., Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information:

(1) Prime contract number;

(2) Name of vessel;

(3) Vessel flag of registry;

(4) Date of loading;

(5) Port of loading;

(6) Port of final discharge;

(7) Description of commodity;

(8) Gross weight in pounds and cubic feet if available;

(9) Total ocean freight in U.S. dollars; and

(10) Name of the steamship company.

(f) The Contractor shall provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

(1) No ocean transportation was used in the performance of this contract;

(2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;

(3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or

(4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY

TOTAL_____

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) In the award of subcontracts for the types of supplies described in paragraph (b)(2) of this clause, the Contractor shall flow down the requirements of this clause as follows:

(1) The Contractor shall insert the substance of this clause, including this paragraph (h), in subcontracts that exceed the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(2) The Contractor shall insert the substance of paragraphs (a) through (e) of this clause, and this paragraph (h), in subcontracts that are at or below the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(End of clause)

252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor --

(1) Shall notify the Contracting Officer of that fact; and

(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) The Contractor shall include this clause; including this paragraph (b), revised as necessary to reflect the relationship of the contracting parties--

(1) In all subcontracts under this contract, if this contract is a construction contract; or

(2) If this contract is not a construction contract, in all subcontracts under this contract that are for--

(i) Noncommercial items; or

(ii) Commercial items that--

(A) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(B) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(C) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(End of clause)

CLAUSES INCORPORATED BY FULL TEXT

52.209-4003 CONTRACTOR QUALIFICATIONS

Each bidder shall state in the bid whether they are now or have ever performed deep soil mixing comparable to the work of this project. The contractor performing the deep soil-cement mixing construction shall be a specialist in the process and shall have at least five years of experience in deep soil-cement mixing comparable to the work of this project. The bidder shall provide references that demonstrate a minimum of five years successful experience on projects with installations to depths of 40 feet or greater using overlapping soil-cement elements to create underground continuous soil cement wall structures similar to those shown on the drawings. The bidder shall have successfully completed the construction of three such projects. The minimum requirements to have successfully completed three similar projects and minimum of five years experience will be considered in determining whether the bidder is qualified to perform the work in accordance with Federal Acquisition Regulation (FAR) Part 9.

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within 5 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use in accordance with the following schedule:

a. Government field office trailer and office equipment (See Section 01500), complete and ready for occupancy ……..30 Calendar Days after Notice to Proceed

b. All work, exclusive of permanent grassing, and repair and paving of Access roads into dam (at Contactor's option), on Lower Dam ……270 Calendar Days after Notice to Proceed

(ii) All remaining work, exclusive of permanent grassing……540 Calendar Days after Notice to Proceed

d. If Contractor's field trailer and facilites remain at Lower Dam, removal of trailer and facilites and cleanup of area shall be accomplished within 30 calendar days following completion of all construction.

(3) Grassing shall be performed in the season best suited for growth, as stated in the specifications.

(4) The times stated for completion include weather delays anticipated to be incurred during the contact period and final cleanup the premises.

(end of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of $1,011 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.211-13 TIME EXTENSIONS (SEP 2000)

Time extensions for contract changes will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements related to the changed work and that the remaining contract completion dates for all other portions of the work will not be altered. The change order also may provide an equitable readjustment of liquidated damages under the new completion schedule.

(End of clause)

52.219-4002 REPORTING REQUIREMENTS--SUBCONTRACTING PLAN (CESAD-CT JUL 1993)

(a) Retainage will be withheld from progress payments in an amount sufficient to protect the Government's ability to assess Liquidated Damages in accordance with FAR clause 52.219-0016 for failure to submit timely SF 294 and SF 295 Reports. The amount of retainage will be determined in accordance with the following formula:
(b) Total dollar amount proposed for subcontracting to small business multiplied by percentage of actual progress on the contract, up to a maximum of 10% of the given progress payment, shall be withheld from the next progress payment due after a contractor fails to submit a required report. If one or more reports have been submitted before such failure, formula for determining the amount of retainage will be adjusted by deducting any amounts reported as subcontracted to small business from the total dollar amount proposed to be subcontracted and the difference multiplied by the percent of actual progress, up to a maximum of 10% of the given progress payment.
(End of clause)

52.223-4002 U.S. ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL, EM 385-1-1

This paragraph applies to contracts and purchase orders that require the contractor to comply with EM 385-1-1 (e.g., contracts that include the Accident Prevention clause at FAR 52.236-13 and/or other safety provisions). EM 385-1-1 and its changes are available at http://www.hq.usace.army.mil. (At the HQ homepage, select Safety and Occupational Health.) The Contractor shall be responsible for complying with the current edition and all changes posted on the web through the date that is 10 calendar days prior to the date offers are due. If the solicitation is amended to extend the time set for receipt of offers, the 10 calendar days rule stated above shall be applied against the amended date. (For example, if offers are due on 10 April, all changes posted on or before 31 March shall apply to the contract. If the time for receipt of offers is extended from 10 April to 20 April, all changes posted on or before 10 April shall apply to the contract.)

52.228-4002 REQUIRED INSURANCE (FEB 1987 SAS) (Ref. FAR 28.307)

(a) The Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance:

Comprehensive and Employer's Liability Insurance in the amount required by the State law in which the work is to be performed under this contract.

Comprehensive General Liability Insurance in an amount not less than $500,000 per accident.

Automobile Liability Insurance: $200,000 per person and $500,000 per accident for bodily injury liability and $20,000 property damage liability.

(b) Prior to the commencement of work hereunder, the Contractor shall furnish to the Contracting Officer a certificate or written statement of the above-required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation, or any material change in the policies adversely affecting the interests of the Government in such insurance, shall not be effective for such period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than 30 days after written notice thereof to the Contracting Officer.

(c) The Contractor agrees to insert the substance of this clause, including this subparagraph (c), in all subcontracts hereunder.

(End of clause)

52.228-4003 COMMERCIAL LIABILITY INSURANCE

The contractor shall maintain in force throughout the course of this project a commercial liability insurance policy of not less than one million dollars. The contractor shall name Clemson University as an additional insured party and provide a certificate of this insurance prior to entry across Clemson University property.

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE
MAR 1995)--EFARS

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region III. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from

an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-4007 ACCOUNTING AND APPROPRIATION DATA (APR 1989 CESAS-RM)

96 X 3122.0000 K6 X 08 2447 013736 96096 2520 1351JF

(End of clause)

52.232-4008 DESIGNATED BILLING OFFICE (APR 1989 CESAS-RM)

Invoices will be mailed to:

U.S. Army Corps of Engineers
The RBR Area Construction Office
Attn. Mr. Tom List, Area Engineer
2167 Engineer Drive
Elberton, GA 30635

(End of Clause)

52.232-4009 DESIGNATED PAYMENT OFFICE (AUG 1998 CESAS-RM-F)

Payment will be made by:

U.S. Army Corps of Engineers Finance Center
ATTN: CEFC-AO-P
5720 Integrity Drive
Millington, TN 38054-5005

(End of clause)

52.232-5001 CONTINUING CONTRACTS (MAR 1995)--EFARS

(a) This is a continuing contract, as authorized by Section 10 of the River and Harbor Act of September 22, 1922 (33 U.S. Code 621). The payment of some portion of the contract price is dependent upon reservations of funds from future appropriations, and from future contribution to the project having one or more non-federal project sponsors. The responsibilities of the Government are limited by this clause notwithstanding any contrary provision of the "Payments to Contractor" clause or any other clause of this contract.

(b) The sum of $50,000.00 has been reserved for this contract and is available for payments to the contractor during the current fiscal year. It is expected that Congress will make appropriations for future fiscal years from which

additional funds together with funds provided by one or more non-federal project sponsors will be reserved for this contract.

(c) Failure to make payments in excess of the amount currently reserved, or that may be reserved from time to time, shall not entitle the contractor to a price adjustment under the terms of this contract except as specifically provided in paragraphs (f) and (i) below. No such failure shall constitute a breach of this contract, except that this provision shall not bar a breach-of-contract action if an amount finally determined to be due as a termination allowance remains unpaid for one year due solely to a failure to reserve sufficient additional funds therefore.

(d) The Government may at any time reserve additional funds for payments under the contract if there are funds available for such purpose. The contracting officer will promptly notify the contractor of any additional funds reserved for the contract by issuing an administrative modification to the contract.

(e) If earnings will be such that funds reserved for the contract will be exhausted before the end of any fiscal year, the contractor shall give written notice to the contracting officer of the estimated date of exhaustion and the amount of additional funds which will be needed to meet payments due or to become due under the contract during that fiscal year. This notice shall be given not less than 45 nor more than 60 days prior to the estimated date of exhaustion.

(f) No payments will be made after exhaustion of funds except to the extent that additional funds are reserved for the contract. The contractor shall be entitled to simple interest on any payment that the contracting officer determines was actually earned under the terms of the contract and would have been made except for exhaustion of funds. Interest shall be computed from the time such payment would otherwise have been made until actually or constructively made, and shall be at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 STAT 97, as in effect on the first day of the delay in such payment.

(g) Any suspension, delay, or interruption of work arising from exhaustion or anticipated exhaustion of funds shall not constitute a breach of this contract and shall not entitle the contractor to any price adjustment under the "Suspension of Work" clause or in any other manner under this contract.

(h) An equitable adjustment in performance time shall be made for any increase in the time required for performance of any part of the work arising from exhaustion of funds or the reasonable anticipation of exhaustion of funds.

(i) If, upon the expiration of sixty (60) days after the beginning of the fiscal year following an exhaustion of funds, the Government has failed to reserve sufficient additional funds to cover payments otherwise due, the contractor, by written notice delivered to the contracting officer at any time before such additional funds are reserved, may elect to treat his right to proceed with the work as having been terminated. Such a termination shall be considered a termination for the convenience of the Government.

(j) If at any time it becomes apparent that the funds reserved for any fiscal year are in excess of the funds required to meet all payments due or to become due the contractor because of work performed and to be performed under the contract during the fiscal year, the Government reserves the right, after notice to the contractor, to reduce said reservation by the amount of such excess.

(End of clause)

52.236-1 PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least 20% percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

(End of clause)

52.236-14 AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)

(a) The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

(b) The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

(End of clause)

52.236-4013 CONTRACTOR-PREPARED NETWORK ANALYSIS SYSTEM
(January 2002 SAS) (Ref. DFARS 236.273)

The progress chart to be prepared by the contractor pursuant to FAR 52.236-15, Schedules for Construction Contracts, shall utilize the Critical Path Method (CPM) of network calculation. (See Attachment 1 to Section 00800).

52.236-4015 PRECONSTRUCTION CONFERENCE (OCT 1988 SAS) (Ref. FAR 36.305)

(a) A preconstruction conference will be arranged by the Area/Resident Engineer after award of contract and before commencement of work. The Area/Resident Engineer will notify the Contractor of the time and date set for the meeting. At this conference, the Contractor shall be oriented with respect to Government procedures and line of authority, contractual, administrative, and construction matters.

(b) The Contractor shall bring to this conference, in completed form, a Certificate of Insurance, plus the following items in either completed or draft form:

Accident Prevention Plan (5 copies)
(use format shown in Attachment 1 to SECTION 00800)
Quality Control Plan (5 copies)
Letter Appointing Superintendent
Transmittal Register
Power of Attorney and Certified Copy of Resolution
Network Analysis System, when applicable
List of Subcontractors

(c) A letter of record will be written documenting all items discussed at the conference, and a copy will be furnished by the Area/Resident Engineer to all in attendance.

(End of clause)

52.236-4016 VIDEO TAPING OPERATING AND MAINTENANCE INSTRUCTIONS (MAR 1987 SASCD-SQ)

For all of the operating and maintenance instructions which are required in the contract specifications, the Contractor shall video tape these instructions as they are presented to the Government representatives. These tapes shall provide clear and understandable detailed instructions for all items required by the contract specifications. The tapes shall be prepared by an experienced video director/cameraman using good quality half-inch VHS color tape with correct sound equipment, lighting, and backdrop. The sound and picture quality shall be high and subject to approval by the Contracting Officer. The tapes are intended as followup training for other Government representatives at a later date. They must be suitable for this purpose. The Contractor shall be responsible for the contents of the instructions and shall verify that they are correct prior to taping. The Contractor may submit individual equipment manufacturer's instructional tape(s), provided they meet the above qualifications and cover the actual equipment that is installed. The tape(s) shall be for specific equipment identified by contents and contract name and number. The Contractor shall submit one copy of the tape(s) to the Contracting Officer for review and approval. Unacceptable tapes are to be corrected by the Contractor as indicated by the Contracting Officer at no additional cost to the Government.

(End of clause)

52.236-4017 SUBMITTAL OF MODIFICATION COST ESTIMATE PROPOSALS (MAR 1992 SAS)
(Ref. DFARS 52.236-7000)

When submittals of Cost Estimate Proposals are required for additions or deletions to work under this contract by modification, the Contractor shall use DA Form 5418-R titled "Cost Estimate Analysis" (see Attachment 1 to SECTION 00800). A separate assemblage will be prepared for submittal by each trade affected by the proposed work.
(End of clause)

52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

(1) Relieve the Contractor of responsibility for providing adequate quality control measures;

(2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

(3) Constitute or imply acceptance; or

(4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) of this section.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

(End of clause)

52.249-4001 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (APR 1991 OCE)
(Ref. FAR 52.249-10)

(a) This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the contract clause entitled DEFAULT (FIXED-PRICE CONSTRUCTION). In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

(b) The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORKDAYS BASED ON 5-DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
12	11	9	6	6	9	10	9	6	4	7	10

(c) Upon acknowledgment of the Notice to Proceed and continuing through-out the contract, the Contractor will record on the daily Contractor Quality Control report the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled workday. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day in each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph (b) above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather workdays, and issue a modification in accordance with the contract clause entitled DEFAULT (FIXED PRICE CONSTRUCTION).
(End of clause)

52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS - EFARS

Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a terminations settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:
Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.
If equipment costs have been allocated to a contract using predetermined rates , those charges will be adjusted to actual costs.

(3) Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.

(4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).

(5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.
(End of Clause)

ATTACHMENT 1 TO SECTION 00800

LIST OF ATTACHMENTS

1. Contract Drawings: (As indicated on Index of Drawings)

2. Rates of Wages:

3. Formats:

   Project Sign

   Project Sign Legend Defined

   Corps of Engineers Logo

   Accident Prevention Plan (Ref. FAR 52.236-13 and EM 385-1-1)

   Construction Quality Control Report

   Small and Disadvantaged Business Subcontracting Plan

   Weekly Temporary Electrical Inspection

4. Minimum Standard for Temporary Electrical Service (Ref. FAR 52.236-14)

5. Forms:

   SAS Form 9 - Activity Hazard Analysis

   SAD Form 1666a-R - Safety Checklist for Crawler, Truck & Wheel Mounted Cranes

   SAD Form 1666b-R - Safety Checklist for Portal, Tower, and Pillar Cranes

   SAD Form 1666c-R - Safety Checklist for Rigging

   SAD Form 1666d-R - Safety Checklist for Motor Vehicles, Trailers and Trucks

   SAD Form 1666e-R - Safety Checklist for Crawler Tractors and Dozers

   SAD Form 1666f-R - Safety Checklist for Scrapers, Motor Graders, and Other Mobile Equipment

   SAD Form 1666g-R - Safety Checklist for Material Hoists

   SAD Form 1666h-R - Safety Checklist for Earth Drilling Equipment

   ENG 2454 - Construction Progress Chart

   ENG Form 4025 - Transmittal of Shop Drawings, Equipment Data, Material Samples, or Manufacturer's Certificates of Compliance

   DA Form 5418-R - Cost Estimate Analysis

   DD Form 1354 - Transfer and Acceptance of Military Real Property

   Standard Form LLL-A - Disclosure of Lobbying Activities

   Real Property Inventory

*4 General Decision Number SC030026

General Decision Number **SC030026**
Superseded General Decision No. SC020026
State: South Carolina
Construction Type:
HEAVY
County(ies):

AIKEN	GREENVILLE	RICHLAND
ANDERSON	LEXINGTON	SPARTANBURG
FLORENCE	PICKENS	YORK

HEAVY CONSTRUCTION PROJECTS (excluding Water and Sewer Lines).
THIS DOES NOT INCLUDE THE SAVANNAH RIVER SITE IN AIKEN COUNTY

Modification Number	Publication Date
0	06/13/2003

COUNTY(ies):

AIKEN	GREENVILLE	RICHLAND
ANDERSON	LEXINGTON	SPARTANBURG
FLORENCE	PICKENS	YORK

SUSC2002A 08/01/1989

	Rates	Fringes
CARPENTERS	8.34	
CEMENT MASONS/CONCRETE FINISHERS	8.47	
LABORERS:		
Unskilled	5.18	
Pipelayer	7.50	
PIPEFITTERS	10.63	
POWER EQUIPMENT OPERATORS:		
Backhoe	7.48	
Bulldozer	7.95	
Crane	10.85	
Loader	8.26	
Mechanic	9.00	
TRUCK DRIVERS	5.94	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter

* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

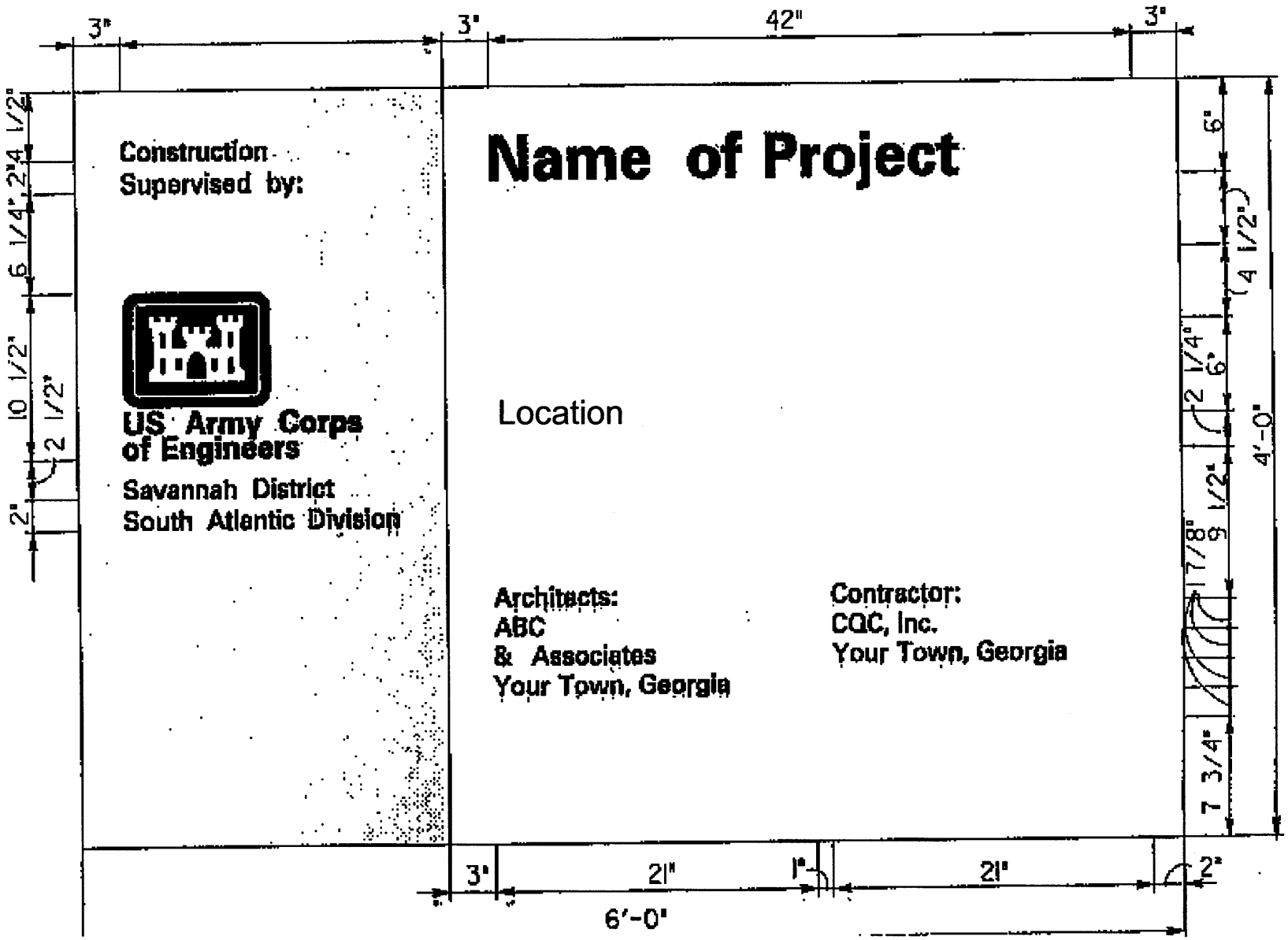
The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION


3"
3"
42"
3"
Construction
Supervised by:
US Army Corps
of Engineers
Savannah District
South Atlantic Division
Name of Project
Location
Architects:
ABC
& Associates
Your Town, Georgia
Contractor:
CQC, Inc.
Your Town, Georgia
10 1/2"
2 1/2"
2"
6 1/4"
2"
4 1/2"
6"
4 1/2"
2 1/4"
6"
4'-0"
9 1/2"
7 7/8"
7 3/4"
3"
21"
1"
21"
2"
6'-0"

PROJECT SIGN LEGEND DEFINED

Legend Group 1: The words:

"Construction Supervised by:" or "Design and Construction Supervised by:"

shall be placed on two lines using black, 1.25" Helvetica regular typeface. Maximum line length is 19".

10.5" Reverse Signature: The Corps symbol shall be a 10.5" white reverse signature using a 6" castle on a red background. The castle and surrounding border lines shall be white. The castle windows, door, and logo background are to be red. The words "U.S. Army Corps of Engineers" shall be black.

Legend Group 2: The words:

"Savannah District
South Atlantic Division"

shall be placed on two lines below the 10.5" reverse signature, using black, 1.25" Helvetica regular typeface.

Legend Group 3: The "Name of Project" shall be placed on one to three lines using white 3" Helvetica bold typeface. Maximum line length is 42".

Legend Group 4: The "Army Installation" shall be a one or two line identification of the facility or name of the sponsoring department. Lettering is to be white, 1.5" Helvetica regular typeface. Maximum line length is 42".

NOTE: Cross-align the first line of legend group 4 with the first line of the Corps signature (U.S. Army Corps) as shown.

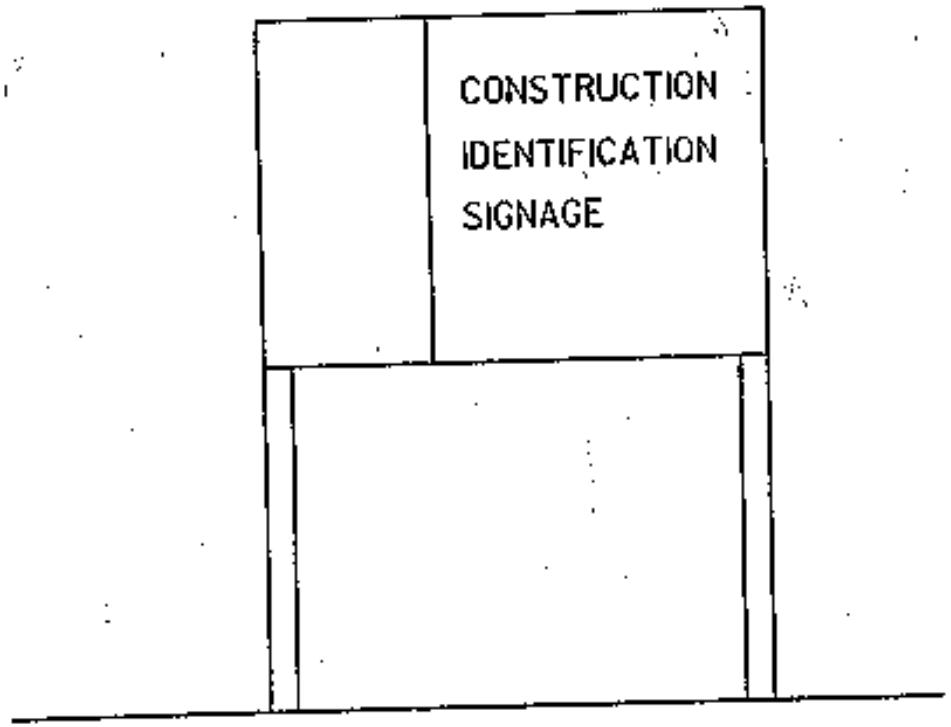
Legend Group 5a: The words:

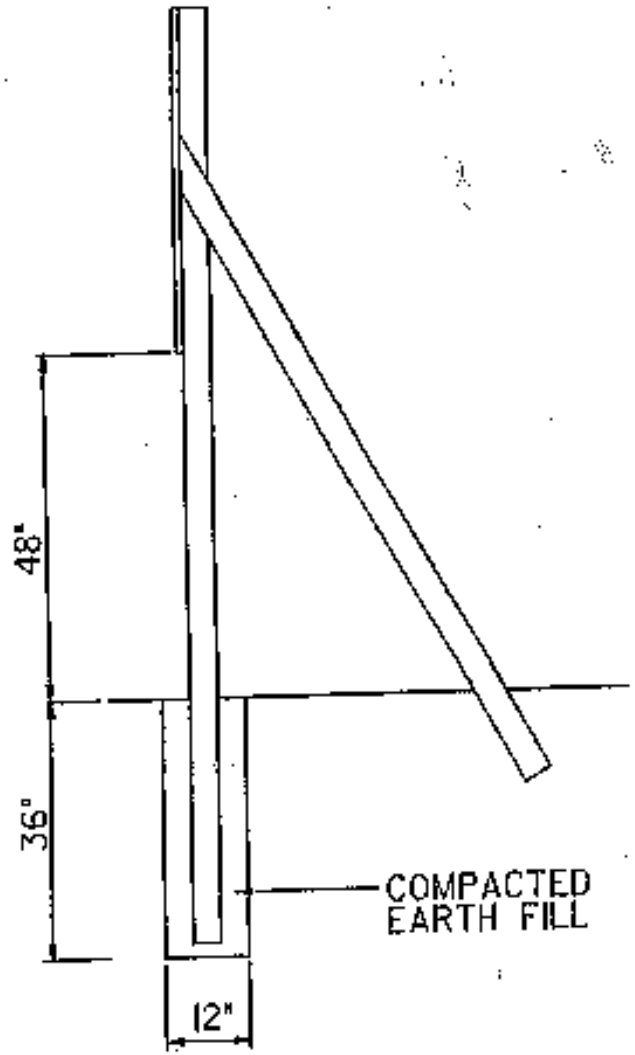
"Architects:" or "Engineers:" or "Architect-Engineers:"

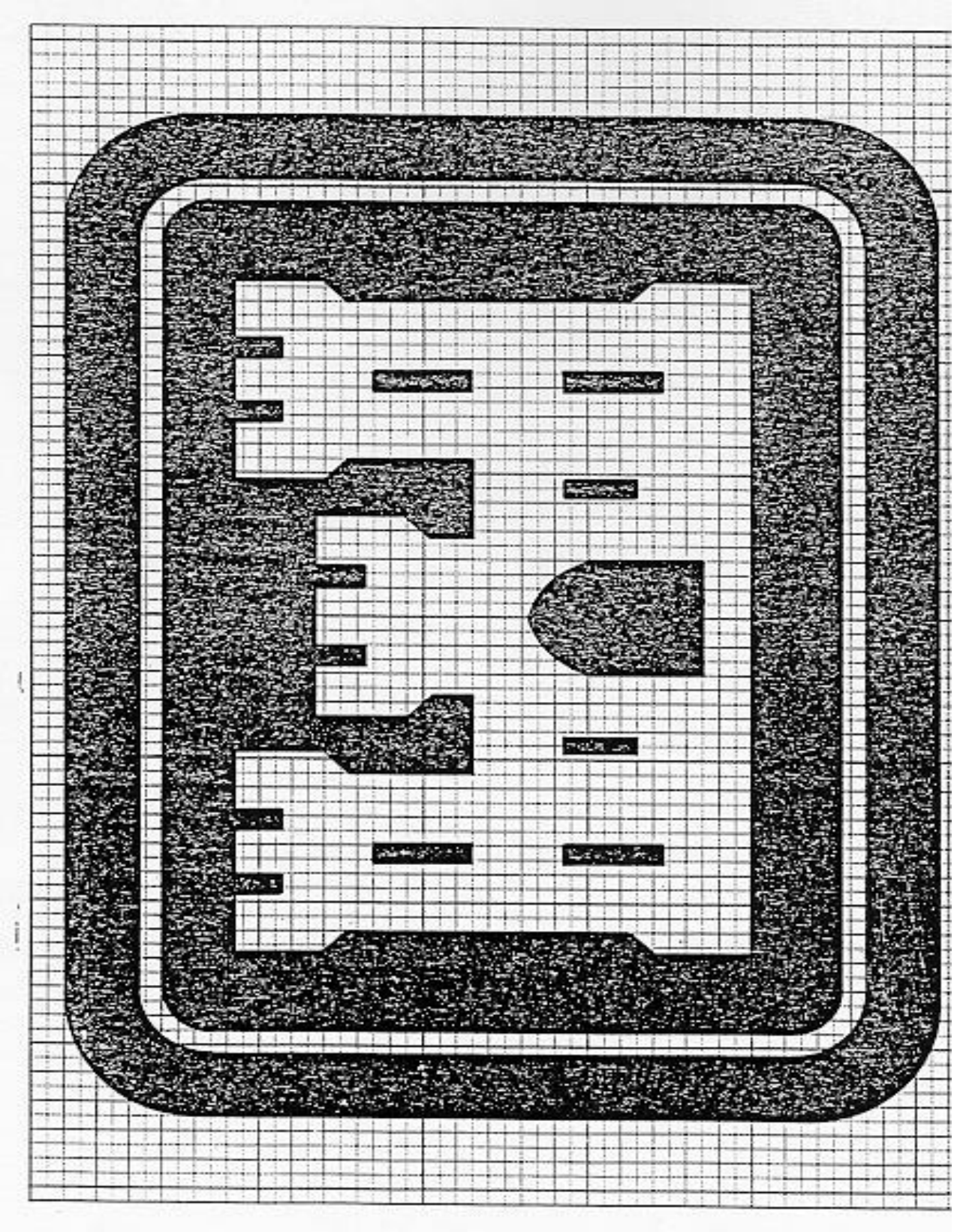
shall be a one to five line identification of the prime architect or engineering corporate or firm name, city, and State. Lettering shall be white, 1.25" Helvetica regular typeface. Maximum line length is 21".

Legend Group 5b: The "Contractor:" shall be a one to five line identification of the prime Contractor corporate or firm name, city, and State. Include type of Contractor, i.e. General Contractor, etc. Lettering shall be white, 1.25" Helvetica regular typeface. Maximum line length is 21".

NOTE: All typography shall be flush left and rag right, upper and lower case with initial capitals only as shown.


CONSTRUCTION
IDENTIFICATION
SIGNAGE


48"
36"
12"
COMPACTED
EARTH FILL



CORPS OF ENGINEERS LOGO
HALF SIZE

Last revised 9 May 97

FORMAT
(Ref. FAR 52.236-13 and EM 385-1-1 dated 3 Sep 96)
ACCIDENT PREVENTION PLAN

MINIMUM BASIC OUTLINE FOR ACCIDENT PREVENTION PLAN

An accident prevention plan is, in essence, a safety and health policy and program document. The following areas are typically addressed in an accident prevention plan, but a plan shall be job specific and shall also address any unusual or unique aspects of the project or activity for which it is written. The accident prevention plan shall interface with the employer's overall safety and health program. Any portions of the overall safety and health program that are referenced in the accident prevention plan shall be included as appropriate.

1. SIGNATURE SHEET. Title, signature, and phone number of the following:

a. Plan preparer (corporate safety staff person, QC);

b. Plan approval, e.g., owner, company president, regional vice president (HTRW activities require approval of a Certified Industrial Hygienist (or qualified Industrial Hygiene personnel for in-house USACE activities; a Certified Safety Professional (or qualified USACE safety personnel for in-house work) may approve the plan for operations involving UST removal where contaminants are known to be petroleum, oils, or lubricants);

c. Plan concurrence (provide concurrence of other applicable corporate and project personnel (contractor)), e.g., Corporate Chief of Operations, Corporate Chief of Safety, Corporate Industrial Hygienist, project manager or superintendent, project safety professional, project QC. The plan will be developed by qualified personnel (plan preparer) and will be signed by a competent person (plan concurrence) and a representative of the prime contractor's project management team (plan approval).

2. BACKGROUND INFORMATION. List the following:

a. Contractor;

b. Contract number;

c. Project name;

d. Brief project description, description of work to be performed, and location (map);

e. Contractor accident experience (provide information such as EMR, OSHA 200 Forms, corporate safety trend analyses);

f. Listing of phases of work and hazardous activities requiring activity hazards analyses.

3. STATEMENT OF SAFETY AND HEALTH POLICY. (In addition to the corporate policy statement, a copy of the corporate safety program may provide a

significant portion of the information required by the accident prevention plan.)

4. RESPONSIBILITIES AND LINES OF AUTHORITIES.

a. Identification and accountability of personnel responsible for safety - at both corporate and project level (contracts specifically requiring safety or industrial hygiene personnel should include a copy of their resume - the District Safety and Occupational Health Office will review the qualifications for acceptance). For items in EM 385-1-1 which require the use of a competent person or a qualified person, the contractor is to maintain documentation demonstrating the competence or qualification of that individual.

b. Lines of authority

5. SUBCONTRACTORS AND SUPPLIERS. Provide the following:

a. Identification of subcontractors and suppliers (if known);

b. Means for controlling and coordinating subcontractors and suppliers;

c. Safety responsibilities of subcontractors and suppliers.

6. TRAINING.

a. List subjects to be discussed with employees in safety indoctrination.

b. List mandatory training and certifications which are applicable to this project (e. g., explosive actuated tools, confined space entry, crane operator, diver, vehicle operator, HAZWOPER training and certification, personal protective equipment) and any requirements for periodic retraining/recertification.

c. Identify requirements for emergency response training.

d. Outline requirements (who attends, when given, who will conduct etc.) for supervisory and employee safety meetings.

e. Identify location at the project site where the records will be maintained.

7. SAFETY AND HEALTH INSPECTIONS. Provide details on:

a. Who will conduct safety inspections (e.g., project manager, safety professional, QC, supervisors, employees, etc.), when inspections will be conducted, how the inspections will be recorded, deficiency tracking system, follow-up procedures, etc;

b. Any external inspections/certifications which may be required (e.g., Coast Guard).

8. SAFETY AND HEALTH EXPECTATIONS, INCENTIVE PROGRAMS, AND COMPLIANCE.

a. The company's written safety program goals, objectives, and accident experience goals for this contract should be provided.

b. A brief description of the company's safety incentive programs (if any) should be provided.

c. Policies and procedures regarding noncompliance with safety requirements (to include disciplinary actions for violation of safety requirements) should be identified.

d. Provide written company procedures for holding managers and supervisors accountable for safety.

9. ACCIDENT REPORTING. The contractor shall identify who shall complete the following, how, and when:

a. Exposure data (man-hours worked);

b. Accident investigations, reports and logs;

c. Immediate notification of major accidents.

10. MEDICAL SUPPORT. Outline on-site medical support and off-site medical arrangements.

11. PERSONAL PROTECTIVE EQUIPMENT. Outline procedures (who, when, how) for conducting hazard assessments and written certifications for use of personal protective equipment.

12. PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL (as applicable).

a. Hazard communication program (01.B.04);

b. Emergency response plans:
- procedures and tests (01.E.01)
- spill plans (01.E.01, 06.A.02)
- fire fighting plan (01.E.01, 19.A.04)
- posting of emergency telephone numbers (01.E.04)
- wildfire prevention plan (09.K.01)
- man overboard/abandon ship (19.A.04)

c. Layout plans (04.A.01);

d. Respiratory protection plan (05.E.01);

e. Health hazard control program (06.A.02);

f. Lead abatement plan (06.B.05 & specifications);

g. Asbestos abatement plan (06.B.05 & specifications);

h. Abrasive blasting (06.H.01);

i. Confined space (06.1);

j. Hazardous energy control plan (12.A.07);

k. Critical lift procedures (16.C.17);

l. Contingency plan for severe weather (19.A.03);

m. Access and haul road plan (22.1.10);

n. Demolition plan (engineering and asbestos surveys) (23.A.01);

o. Emergency rescue (tunneling) (26.A.05);

p. Underground construction fire prevention and protection plan (26.D.01);

q. Compressed air plan (26.1.01);

r. Formwork and shoring erection and removal plans (27.B.02);

s. Lift slab plans (27.D.01);

t. SHP and SSHP (for HTRW work an SSHP must be submitted and shall contain all information required by the accident prevention plan - two documents are not required (28.B.01);

u. Blasting plan (29.A.01);

v. Diving plan (30.A.13);

w. Plan for prevention of alcohol and drug abuse (Defense Federal Acquisition Regulation Supplement Subpart 252.223-7004, Drug-Free Work Force).

13. The Contractor shall provide information on how they will meet the requirements of major sections of EM 385-1-1 in the accident prevention plan. Particular attention shall be paid to excavations, scaffolding, medical and first aid requirements, sanitation, personal protective equipment, fire prevention, machinery and mechanized equipment, electrical safety, public safety requirements, and chemical, physical agent, and biological occupational exposure prevention requirements. Detailed site-specific hazards and controls shall be provided in the activity hazard analysis for each phase of the operation. Site-specific hazards are those hazards which would be reasonably be anticipated to occur on the construction site of concern and will be identified through analysis of the activities to be performed. The controls are measures which will be implemented by the contractor to eliminate or reduce each hazard to an acceptable level.

F O R M A T

CONTRACTOR'S NAME
(Address)

CONSTRUCTION QUALITY CONTROL REPORT

Date: _____ Report No. _____

Contract No.: _____

Description and Location of Work: _____

WEATHER: (Clear)(P. Cloudy)(Cloudy); Temperature:___Min,___Max;
Rainfall ___Inches

Contractor/Subcontractors and Area of Responsibility
a._____
b._____
c._____
d._____
e._____
f._____
g._____
h._____

1. Work Performed Today:

(Indicate location and description of work performed. Refer to work performed by prime and/or subcontractors by letter in table above.)

_____

2. Results of Control Activities:

(Indicate whether: P-Preparatory, I-Initial, or F-Followup and include satisfactory work completed or deficiencies with action to be taken.)

_____

3. Test Required by Plans and/or Specifications Performed and Results of Tests:

_____

4. Monitoring of Materials and Equipment:

---

5. Offsite Surveillance Activities:

---

6. Job Safety:

(Daily comment required.)

---

7. Remarks:

a. (Cover any conflicts in plans, specifications or instructions.)

b. (Action taken in review of submittal.)

c. (Verbal instructions received.)

_____
Inspector

CONTRACTOR'S VERIFICATION:

The above report is complete and correct and all material and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

_____
Contractor's Approved
Authorized Representative

SAMPLE

SMALL AND DISADVANTAGED BUSINESS SUBCONTRACTING PLAN

BETTER BUILDERS, INC.

DATE: February 11, 2003

SOLICITATION NO. DACA21-0X-X-XXXX

TITLE: Barracks Complex, Fort Swampy, Georgia

Type of Work: Design and Construction

In accordance with applicable contract clauses of the solicitation noted above, Better Builders, Inc. submits the following Small Business Subcontracting Plan (includes small, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns).

It is company policy to follow all public laws including P.L. 99-661, Section 1207, P.L. 100-180, Section 806, P.L. 105-135 and P.L. 106-50. We have informed all purchasers to follow these laws in hiring subcontractors and buying materials.

1. The following goals (expressed in terms of percentages of the total dollars available for subcontract/purchase order award) would be applicable to a contract awarded under the cited solicitation. You must also provide the dollar amounts for each of the goals listed below.

    a. Total Proposed Contract Amount: $26,961,000

    b. Total amount available for Subcontract award: $18,300,000

    c. Large Business: $7,832,400 – 42.8%

    d. Total amount to be subcontracted to all small business: $10,467,600 - 57.2%

    e. Small Disadvantaged Business: $1,628,700 – 8.9%

    f. Women-Owned Small Business: $1,482,300 – 8.1%

    g. Service-Disabled Veteran-Owned Small Business: $549,000 - 3%

    h. HUBZone Small Business: $549,000 – 3%

i. There are no options in this solicitation. ***(NOTE: If there are options in the solicitation you must provide the same information as listed in paragraph 1 a-h for each option year/period.)***

j. Indirect and overhead costs have not been included in the goals specified in this section for amounts available for subcontract/purchase order award.

k. Consideration was given to HCBU/MI's but no opportunities were found to be included in the small disadvantaged business goals.

NOTE: While Savannah District does not have a specific goal for subcontracting with Veteran-Owned small business, it must be addressed in any subcontracting plan. However, FAR 52.219-9 requires a goal in your subcontracting plan for Veteran-Owned small business concerns.

2. The following principal products and/or services will be subcontracted under this contract, and the distribution among all small business concerns are as follows:

Large Business - Earthwork
Small Business - Windows and Storm Doors, Recreation, Site Utilities Plumbing
Veteran Owned Small Business – Materials, Equipment
Service Disabled Veteran Owned Small Business – Asphalt, Electrical, Doors
HUBZone Small Business - Window Treatment, HVAC, Concrete
Small Disadvantaged Business - Vinyl Siding, Insulation, Gutters
Women Owned Small Business – Carpentry, Ceramic Tile, Fencing

NOTE: Company names should be provided for each product and/or service listed.

The following method was used in developing our subcontracting goals: (1) all areas of potential subcontract work were determined to be available for subcontract award to all types of small business concerns, and (2) will be actively recruited for participation through the many sources described hereinafter.

3. The following individual will administer this Subcontract Plan on behalf of Better Builders, Inc.:

Name: Freddie Better Title: Executive Vice President

Address and Telephone Number: 4845 Tonka Drive
Fair Haven, CT 27413
800-621-4845

The individual's specific duties with regard to the conduct of our firm's Subcontracting Plan will include, but will not be limited to the following:

a. Developing and maintaining bidders lists of all types of small business concerns using sources such as the Pronet System developed by the Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, Local Minority Business Development Centers and Minority Contractor Associations, and the General Business Services Center in the project's Standard Metropolitan Statistical Area.

b. Assuring the inclusion of all types of small business concerns in all solicitations for products or services which they are capable of providing; and ensuring that all solicitations are structured to permit the maximum possible participation by all types of small business concerns.

c. Establishing and maintaining records of all solicitations and subcontract awards to all types of small business concerns to ensure that the members of the firm who review bidders proposals document their reasons for selecting or not selecting a bid.

d. Preparing and submitting the Subcontracting Report for Individual Contracts (SF 294) and the Summary Subcontract Report (SF 295) in accordance with the instructions provided on the forms, and coordinating and preparing for all compliance reviews by Federal agencies.

e. Conducting or arranging for all other activities necessary to further the intent and attainment of goals of the Plan to include motivational training of the firm's purchasing personnel attendance at workshop, seminars and trade fairs conducted by or on behalf of all types of small business concerns, and general cooperation with members of these concerns or their representatives.

4. The following steps will be taken to ensure that all types of small business concerns receive notice and have an equitable opportunity to compete for intended awards of subcontracts and/or purchase orders for the products and/or services described in paragraph 2 above:

a. Sources will be requested through the SBA's ProNet system, business development organizations, small business trade associations and at small business procurement conferences; sources will be contacted and bidding materials will be provided to all respond ing parties with interest.

b. Internally, motivational training will be conducted to guide and encourage purchasing personnel; source lists and guides to all types of small business concerns will be maintained and utilized by purchasing personnel while soliciting subcontracts and purchase orders; activities will be monitored to ensure sufficient time is allowed for interested bidders to prepare their bids and to evaluate continuing compliance with this Subcontracting Plan.

5. Better Builders, Inc. agrees that the clause entitled "Utilization of Small Business Concerns" will be included in all subcontracts which offer further subcontracting opportunities. All subcontractors, except small business concerns, who receive subcontracts in excess of $500,000 ($1,000,000 in the case of construction) will be required to adopt and comply with a subcontracting plan similar to this one. Such plans will be reviewed to assure that all minimum requirements of an acceptable subcontracting plan have been satisfied.

The acceptability of goals shall be determined on a case-by-case basis depending on the supplies/services involved, the availability of all potential small business and prior experience. Once approved and implemented, plans will be monitored through the submission of periodic reports or, as time and availability of funds permit, periodic visits to subcontractor's facilities to review applicable records and subcontracting program progress.

6. Better Builders, Inc. agrees to submit such periodic reports and cooperate in any studies or surveys as may be required by the Contracting agency or the Small Business Administration in order to determine the extent of compliance by the offeror with the subcontracting plan and with the clause entitled "Utilization of Small Business Concerns" contained in the solicitation.

7. Better Builders, Inc. agrees to maintain at least the following types of records to document compliance with this Subcontracting Plan:

a. The names of all organizations, agencies, and associations contacted for all small business sources, along with records of attendance at conferences, seminars and trade fairs where additional sources were developed.

b. Source lists, guides, and other data identifying all types of small business concerns

c. Records on all subcontract solicitations, on a contract-by-contract basis, indicating (1) whether all types of small business concerns were solicited, and if not, why not; and (2) the reasons for the failure of all solicited small businesses to receive a subcontract award.

d. Records of all subcontract award data, to include subcontractor's name and address, to be kept on a contract-by-contract basis.

e. Minutes of internal motivational and training meetings held for the guidance and encouragement of purchasing personnel, and records of all monitoring activities performed for compliance evaluation.

f. Copies of SF 294 and SF 295 showing date and place of filing and copies of all other reports or results of reviews conducted by the contracting agency or other interested agencies of the Federal government to monitor our compliance with this Subcontracting Plan.

In closing Better Builders, Inc. states that it will be the policy of Better Builders, Inc. to afford every practicable opportunity to all types of small business concerns to participate in construction contracts awarded to Better Builders, Inc. by the Federal Government to ensure that equitable opportunity is provided to all types of small business concerns to compete for award of subcontracts and purchase orders, and to diligently pursue the achievement of our goals by participation of all types of small business concerns in the dollars available for subcontract/purchase order award under the solicitation.

BY_____ DATE _____

_____
Signature

_____
Title, and Company Name

_____ DATE _____
Contract Specialist

Approval Recommended

_____ DATE _____
SADBU

Approve/Disapprove

_____ DATE _____
Contracting Officer

Approve/Disapprove

_____ DATE _____
Procurement Center Representative
Small Business Administration

WEEKLY TEMPORARY ELECTRICAL INSPECTION

Week ending _____

Contract No. _____

Contract Description _____

The following items were inspected in accordance with requirements in National Electrical Code and Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1.

1. Wire (size, type, condition).

2. Systems and devices (polarity, continuity of ground, resistance to ground).

3. Resistance of ground rods (25 OHMS) measured and recorded.

4. Check GFI for 15/20 amp 120 volt circuits.

5. Plugs and receptacles (type, NEMA rating).

6. Circuit breakers and disconnect (size, type, weatherproof).

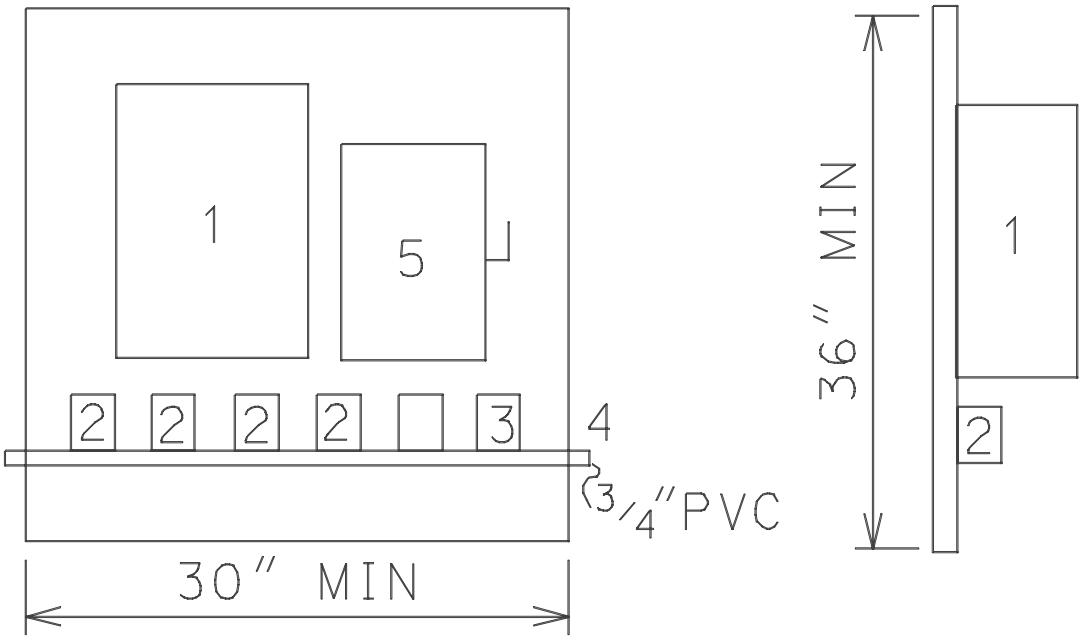
7. Extension cords (type, UL listed, insulation condition, splices, location).

8. Open wiring on insulators, nonmetallic sheathed cable, outside clearance (600 volts or less), Festoon lighting (as applicable).

_____

Signature Electrician/Electrical Engineer

MINIMUM STANDARD FOR TEMPORARY ELECTRICAL SERVICE



(DIMENSIONS ARE APPROXIMATE)

A. The backboard for temporary service shall consist of not less than 1/2 inch plywood of exterior grade.

B. Numbers above correspond to the item below:

Item 1 - NEMA 3R circuit breaker type panelboard. This panelboard shall consist of 1 two-pole 60 amp main circuit breaker, 4* one pole 20 AMP branch circuit breakers, and 1* two pole 20 AMP branch circuit breaker. Breakers shall meet Federal Specifications Standards for Class 1A breakers and shall be plug-in type. (*Number of breakers to be adjusted to suit the job requirements.)

Item 2 - Duplex grounding type convenience outlets in standard utility type outlet boxes with covers, meeting the NEC and NEMA requirements for wet locations. Connections to the branch circuit breakers shall be grounded by two conductors #12 NMC cable.

Item 3 – (Optional) A single three-conductor grounding type outlet rated for 250 volt service meeting the NEC and NEMA requirements for wet locations. Connections from this outlet to the two pole breaker shall be by two conductor grounded type NMC cable.

Item 4 - 3/4 inch PVC. This shall be used to support extension cords.

Item 5 – NEMA 3R service disconnect safety switch – 60 amp minimum.

C. The panelboard shall be grounded by #6 copper wire connected to a 3/4 inch by 10-foot long ground rod.

D. Service to the panel shall consist of three copper conductor #6 minimum service entrance cable. This cable may enter the top or side of the panelboard.

E. Periodic inspections of systems and devices will be made by the Contractor at intervals not to exceed 1 week, and a report will be submitted indicating the results.

F. All receptacle outlets that provide temporary electrical power during construction, remodeling, maintenance, repair, or demolition shall have ground-fault circuit-interrupter (CFCI) protection for personnel. GFCI protection shall be provided on all circuits serving portable electric hand tools or semi-portable electric power tools (such as block/brick saws, table saws, air compressors, welding machines, and drill presses). See EM 385-1-1 for exceptions.

G. Per EM 385-1-1 all temporary power distribution systems shall be submitted to the field office before installation.

ACTIVITY HAZARD ANALYSIS

1. Phase of Construction		
2. Location	3. Contract No.	4. Project
5. Prime Contractor	6. Date of Preparatory	7. Estimated Start Date
Potential Safety Hazard	Procedure to Control Hazard	
8. Contractor's Representative (signature)	9.	

SAS Form 9
1 Jan 82

SAFETY CHECKLIST FOR CRAWLER, TRUCK & WHEEL MOUNTED CRANES

Contract # and title:	
Equipment name & number: owned or leased?	
Contractor:	Subcontractor:
Contract Inspector:	Date inspected:

	Yes	No	N/A
1. Unless the manufacture has specified an on-rubber rating, outriggers will be fully extended and down? (16.D.10)			
2. Are lattice boom cranes equipped with a boom angle indicator, load indicating device, or a load moment indicator? (16.D.01)			
3. Are lattice boom and hydraulic cranes equipped with a means for the operator to visually determine levelness? (16.D.02)			
4. Are lattice boom and hydraulic cranes, except articulating booms cranes, equipped with drum rotation indicators located for use for the operator? (16.D.03)			
5. Are lattice boom and hydraulic mobile cranes equipped with a boom angle or radius indicator within the operator’s view? (16.D.04)			
6. Are lattice boom cranes, with exception of duty cycle cranes, equipped with an anti-two blocking device? (16.D.05)			
7. When duty cycle machines are required to make a non-duty lift, is the crane equipped with an international orange warning device and is a signal person present? (16.D 05)			
8. Are the following with the crane at all times: (16.C.02) a. the manufacturer’s operating manual? b. the load rating chart? c. the crane’s log book documenting use, maintenance, inspections and tests? d. operating manual for crane operator aids used on the crane.			

	Yes	No	N/A
9. Are the following on the project site: a. completed periodic inspection report prior to initial work? (16.C.12) b. pre-operational checklist used for daily inspection? (16.C.12) c. written reports of the operational performance test? (16.C.13) d. written reports of the load performance test? (16.C.13)			
10. Are all operators physically qualified to perform work? (16.C.05)			
11. Are all operators qualified by written and practical exam or by appropriate licensing agency for the type crane they are to operate? (16.C.05)			
12. Is the crane designed and constructed IAW the standards listed in Table 16-1? (16.C.06)			
13. Is a hazard analysis for set-up and set-down available? (16.C.08)			
14. Are accessible areas within the swing radius of the rear of the crane barricaded? (16.C.09)			
15. Are there at least 3 wraps of cable on the drum? (16.C.10)			
16. Are the hoisting ropes installed IAW the manufacturer’s recommendations? (16.C.10)			
17. Are critical lift plans available? (16.C.18)			
18. Are minimum clearance distance for high voltage lines posted at the operator’s position? (11.E.04)			
19. Do older lattice boom cranes with anti-two block warning devices in lieu of anti-two block prevention devices have a written exemption? (16.D.05)			
20. Is the slow moving emblem used on all vehicles which by design move at 25 MPH or less on public roads? (08.A.04)			
21. Are all vehicles which will be parked or moving slower than normal traffic on haul roads equipped with a yellow flashing light or flasher visible from all directions? (16.A.13)			

	Yes	No	N/A
22. Is all equipment to be operated on public roads provided with: (16A.07) a. headlights? b. brake lights? c. taillights? d. back-up lights? e. front and rear turn signals?			
23. Are seat and seat belts provided for the operator and each rider on equipment? (16.A.07 and 16.B.08)			
24. Is all equipment with windshields equipped with powered wipers and defogging or defrosting devices? (16.A.07)			
25. Is the glass in the windshield or other windows clear and unbroken to provide adequate protection and visiblity for the operator? (16.A.07, 16.B.10)			
26. Is all equipment equipped with adequate service brake system and emergency brake system? (16.A.18)			
27. Are areas on equipment where employees walk or climb equipped with platforms, footwalks, steps, handholds, guardrails, toeboards and non-slip surfaces? (16.B.03)			
28. Is all self propelled equipment equipped with automatic, audible, reverse signal alarms? (16.B.01)			
29. Is there a record of manufacturer’s approval of any modification of equipment which affects its capacity or safe operation? (16.A.18)			
30. Are truck and crawler cranes attached to a barge or pontoon by a slack tiedown system? (16.F.06)			
31. Have the following conditions been met for land cranes mounted on barges or pontoons: (16.F.04) a. Have load ratings been modified to reflect the increased loading from list, trim, wave, and wind action? b. Are all deck surfaces above the water? c. Is the entire bottom area of the barge or pontoon submerged? d. Are tie downs available? e. Are cranes blocked and secured?			
32. Are all belts, gears, shafts, spindles, drums, flywheels, or other rotating parts of equipment guarded where is a potential for exposure to workers? (16.B.03)			

	Yes	No	N/A
33. Is the area where the crane is to work level, firm and secured? (16.A.10)			
34. Is a dry chemical or carbon dioxide fire extinguisher rated at least 5-B:C on the crane? (16.A.26)			
35. Are trucks, for truck mounted cranes, equipped with a working reverse signal alarm? (16.B.01)			
36. Is a signal person provided where there is danger from swinging loads, buckets, booms, etc.? (16.B.13)			
37. Is there adequate clearance from overhead structures and electrical sources for the crane to be operated safely? (16.C.09)			
38. Is there adequate lighting for night operations? (16.C.19)			
39. Has the the boom stop test on cable-supported booms been performed? (16.D.06)			
40. Is the boom disenaging device functioning as required? (16.D.06)			
41. Has all rigging and wire rope been inspected? (Section 15)			
Remarks:(Enter actions taken for all “no” answers.)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR PORTAL, TOWER, AND PILLAR CRANES

Contract # and Title:			
Equipment name & number: owned or leased?			
Contractor:	Subcontractor:		
Contract Inspector:	Date Inspected:		
	Yes	No	N/A
1. Are the following available: (16.E.02) a. written erection instructions? b. listing of the weight of each component? c. an activity hazard analysis for the erection? d. does the activity hazard analysis contain (1.) location of crane and adjacent structures? (2.) foundation design and construction requirements? (3.) clearance and bracing requirements?			
2. Is there a boom angle indicator within the operator's view? (16.E.04)			
3. Are luffing jib cranes equipped with: (16.E.05) a. shock absorbing jib stops? b. jib hoist limit switch? c. jib angle indicator visible to operator?			
4. If used, do rail clamps have slack between the point of attachment to the rail and the end fastened to the crane? (16E.06)			
5. Are the following with the crane at all times: (16.C.02) a. the manufacturer's operating manual? b. the load rating chart? c. the crane's log book documenting use, maintenance, inspections and tests? d. the operating manual for crane operational aids used on the crane?			

	Yes	No	N/A
6. Are the following on the project site: a. completed periodic inspection report prior to initial work? (16.C.12) b. pre-operational checklist used for daily inspections? (16.C.12) c. written reports of the operational performance tests? (16.C.13) d. written reports of the load performance tests? (16.C.13)			
7. Is every crane operator certified by a physician to be physically qualified to perform work? (16.C.05)			
8. Are all operators qualified by written and practical exam or by appropriate licensing agency for the type crane they are to operate? (16.C.05)			
9. Is the crane designed and constructed IAW the standards listed in Table 16-1? (16.C.05)			
10. Is a hazard analysis for set-up and set-down available? (16.C.08)			
11. Are there at least 3 wraps of cable on the drum? (16.C.10)			
12. Are the hoisting ropes installed IAW the manufacturer’s recommendations? (16.C.10)			
13. Is the a record of manufacturer’s approval of any modification of equipment which affects its capacity or safe operation? (16.A.07)			
5. Remarks: (Enter actions taken)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR RIGGING

Contract # and title:			
Equipment name & number: owned or leased?			
Contractor	Subcontractor:		
Contractor inspector:	Date inspected:		
	Yes	No	N/A
1. Has all defective rigging been removed? (15.A.01)			
2. Is rigging stored properly? (15.A.01)			
3. Are running lines within 6.5’ of the ground or working level guarded? (15.A.03)			
4. Are all eye splices made in an approved manner with rope thimbles? (sling eyes excepted) (15.A.04)			
5. Are positive latching devices used to secure loads? (15.A.05)			
6. Are all custom lifting accessories marked to indicate their safe working loads? (15A.07)			
7. Are all custom designed lifting accessories proof-tested to 125% of their rated load? (15.A.07)			
8. Are the following conditions met for wire rope: (15.B.01-09) a. Are they free of rust or broken wires? b. Are defective ropes cut up or marked as unusable? c. Do rope clips attached with U-bolts have the U-bolts on the dead end or short end of the rope? d. Are protruding ends of strands in splices on slings and bridles covered or blunted? e. Except for eye splices in the end of wires and for all endless wire rope slings, are all wire ropes used in hoisting, lowering, or pulling loads one continuous piece, free of knots or splices?			

	Yes	No	N/A
f. Do all eye splices have at least 5 full tucks? g. If used, are wedge sockets fastening attached without attached the dead end of the wire rope to the live rope? h. Are they free of eyes or splices formed by wire rope clips or knots?			
9. Are the following conditions met for chain? (15.C.01-04) a. Are all chains alloyed? b. Do all coupling links or other attachments have rated capacities at least equal to that of the chain. c. Are makeshift fasteners restricted from use?			
10. Are the following conditions met for fiber rope:(15.D.01-07) a. Are all ropes protected from freezing, excessive heat or corrosive materials? b. Are all ropes protected from abrasion? c. Are splices made IAW manufacture's recommendations? d. Do all eye splices in manila rope contain at least 3 full tucks and do all short splices contain at least 6 full tucks(3 on each side of the centerline of the splice)? e. Do all splices in layed synthetic fiber rope contain at least 4 full tucks and do short splices contain at least 8 full tucks (4 on each side of the centerline of the splice)? f. Do the tails of fiber rope splices extend at least 6 rope diameters (for rope 1" diameter or greater) past the last full tuck? g. Are all eye splices large enough to provide an included angle of not greater than 60* at the splice when the eye is placed over the load or support?			
11. Are the following conditions met for all slings:(15.E.01-06) a. Is protection provided between the sling and sharp surfaces? b. Do all rope slings have minimum clear length of 40 times the diameter of component ropes between each end fitting or eye splice? c. Do all braided slings have a minimum clear length of 40 times the diameter of component ropes between each end fitting or eye splice?			

	Yes	No	N/A
d. Do all welded alloy steel chain slings have affixed permanent identification stating size, grade, rated capacity and manufacturer? e. Is each synthetic web sling marked or coded to identify its manufacturer, rated capacities for each type hitch and the type material?			
12. Are drums, sheaves, and pulley smooth and free of surface defects? (15.F.01)			
13. Is the ratio of the diameter of the rigging and the drum, block sheave or pulley thread diameter such that the rigging will adjust without excessive wear, deformation, or damage? (15F.02)			
14. Have all damaged drums, sheaves and pulleys been removed from service? (15.F.04)			
15. Are all connections, fittings, fastenings, and attachments of good quality, proper size and strength, and installed IAW manufacturer's recommendations? (15.F.05)			
16. Are all shackles and hooks sized properly? (15.F.06 & .07)			
17. Are hoisting hooks rated at 10 tons or greater provided with safe handling means? (15.F.07)			
18. Do all drums have sufficient rope capacity? (15.F.08)			
19. Is the drum end of the rope anchored by a clamp securely attached to the drum in a manner approved by the manufacturer? (15.F.08)			
20. Do grooved drums have the correct groove pitch for the diameter of the rope and is the groove depth correct? (15.F.08)			
21. Do the flanges on grooved drums project beyond the last layer of rope at a distance of either 2″ or twice the diameter of the rope, whichever is greater? (15.F.08)			
22. Do the flanges on ungrooved drums project beyond the last layer of rope a distance of either 2.5″ or twice the diameter of the rope, which ever is greater.			

	Yes	No	N/A
23. Are the sheaves compatible with the size of rope used and as specified by the manufacture? (15F.09)			
24. Are sheaves properly aligned, lubricated, and in good condition? (15.F.09)			
25. When rope is subject to riding or jumping off a sheave, are sheaves equipped with cablekeepers? 915.F.09)			
26. Are eye bolts loaded in the plane of the eye and at angles less than 45* to the horizontal? (15.F.10)			
27. Remarks: (Enter actions taken for “no” answers.)			
Contractor inspector signature			
Contractor QC/safety/project manager signature			

SAFETY CHECKLIST FOR MOTOR VEHICLES , TRAILERS AND TRUCKS

Contract # and title: owned or leased?	
Equipment name & number:	
Contractor:	Subcontractor:
Contractor inspector:	Date inspected:

	Yes	No	N/A
1. Are records of safety inspections of all vehicles available? (18.A.02)			
2. Are all vehicles to be operated between sunset and sunrise equipped with: (18.A.04) a. 2 headlights? b. taillights and brake lights? c. front and back turn signals? d. 3 emergency flares, reflective markers, or equivalent portable warning devices?			
3. Are vehicles, except trailers or semi-trailers having a gross weight of 5000 lbs or less, equipped with service brakes and manually operated parking brakes? (18.A.05)			
4. Are service brakes on trailers and semitrailers controlled from the driver’s seat of the prime mover? (18A.06)			
5. Does the vehicle have: (18.A.06) a. a speedometer? b. a fuel gage? c. an audible warning device (horn)? d. a windshield & adequate windshield wiper? e. an operable defroster and defogging device? f. an adequate rearview mirror? g. a cab, cab shield, and other protection to protect the driver from the elements and falling or shifting materials? h. non-slip surfaces on steps? I. a power-operated starting device?			

	Yes	No	N/A
6. Is all the glass safety glass and is all broken or cracked glass replace? (18.A.07)			
7. Do trailers meet the following: (18A.08) a. Are all towing devices adequate for the weight drawn? b. Are all towing devices properly mounted? c. Are locking devices or a double safety system provided on every 5th wheel mechanism and tow bar arrangement to prevent accidental separation? d. Are trailers coupled with safety chains or cables to the towing vehicle? e. Are trailers equipped with the power brakes equipped with a break-away device which will lock-up the brakes in the event the trailer separates from the towing vehicle?			
8. Are all dump trucks:(18.A.10) a. equipped with a holding device to prevent accidental lowering of the body? b. equipped with a hoist lever secured to prevent accidental starting or tipping? c. equipped with means to determine (from the operator’s position) if the dump box is lowered? d. equipped with trip handles for tailgates that allow the operator to be clear?			
9. Are all buses, trucks and combination of vehicles with a carrying capacity of 1.5 tons or more, to be operated on public roads equipped with: (18.A.11) a. 3 reflective markers? b. 2 wheel chocks for each vehicle? c. at least one 2A:10B:C fire extinguisher? d. at least two properly rated fire extinguishers (for vehicles carrying flammable cargo)? e. a red flag not less than 1 foot square.			
10. Is vehicle exhaust controlled so as not to present a hazard to personnel? (18.A.13)			
11. Are all rubber tired motor vehicles equipped with fenders or with mud flaps if the vehicle is not designed for fenders? (18.A.14)			

	Yes	No	N/A
12. Are all vehicles, except buses, equipped with seat belts? (18.B.02)			
13. Does all self-propelled construction and industrial equipment have a working reverse signal alarm? (16.B.01)			
14. Are all hot surfaces of equipment, including exhaust pipes or other lines, guarded or insulated to prevent injury or fire? (16.B.03)			
15. If an off the road vehicle, is it equipped with rollover protective structures? (16.B.12)			
16. Remarks: (Enter actions taken for “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR CRAWLER TRACTORS AND DOZERS

Contract # and title:	
Equipment name & number: owned or leased?	
Contractor:	Subcontractor:
Contractor inspector:	Date inspected:

	Yes	No	N/A
1. Are initial and daily/shift inspection records available? (16.A.01& .02)			
2. Are only qualified operators assigned to operate mechanized equipment? (16.A.04)			
3. Are sufficient lights provided for night operations? (16.A.11)			
4. Is the unit shut down before refueling? (16.A.14)			
5. Does the unit have as a minimum a 5-B:C fire extinguisher? (16.A.26)			
6. Is there an effective, working reverse alarm? (16.B.01)			
7. Are moving parts, shafts, sprockets, belts, etc., guarded? (16.B.03 ,07, and 13)			
8. Is protections against hot surfaces, exhausts, etc., provided? (16.B.03 and .13)			
9. Are fuel tanks located in a manner to prevent spills or overflows from running onto engine exhaust or electrical equipment?			

	Yes	No	N/A
10. Are exhaust discharges directed so they do not endanger person of obstruct operator vision?(16.B.05)			
11. Are seat belts provided? (16B.08)			
12. Is protection (grills, canopies, screens) provided to shield operator from falling or flying objects? (16.B.10 and .11)			
13. Is roll over protection provided? (16.B.12)			
14. Remarks: (Enter actions taken for “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR SCRAPERS, MOTOR GRADERS , AND OTHER MOBILE EQUIPMENT

Contract # and title:	
Equipment name and number: owned or leased?	
Contractor:	Subcontractor:
Contractor inspector:	Date inspected:

	Yes	No	N/A
1. Are initial and daily/shift inspection records available? (16.A.01 & .02)			
2. Are only qualified operators assigned to operate equipment? (16.A.04)			
3. Are sufficient lights provided for night operations? (16.A.11)			
4. Does the unit have as a minimum a 5-B:C fire extinguisher? (16.A.26)			
5. Is there an effective working reverse alarm? (16.B.01)			
6. Is the unit shut down for refueling? (16.A.14)			
7. Are moving parts, shafts, sprockets, belts, etc., guarded? (16.B.03, .07 and .13)			
8. Is protection against hot surfaces, exhausts, etc., provided? (16.B.03 and .13)			
9. Are fuel tanks located in a manner to prevent spills or overflow from running onto engine exhaust or electrical equipment? (16.B.04)			
10. Are exhaust discharges directed so they do not endanger persons or obstruct operator vision? (16.B.05)			

	Yes	No	N/A
11. Are seat belts provided for each person required to ride on the equipment? (16.B.08)			
12. Is protection (grills, canopies, screens) provided to shield operators from falling or flying objects? (16.B.10 and .11)			
13. Is roll over protection provided? (16.B.12)			
14. Is a safe means of access to the cab provided (steps, grab bars, non-slip surfaces)? (16.B.03)_			
15. Are adequate head and tail lights provided? (16.A.07)			
16. Have brakes been tested and found satisfactory? (16.A.07)			
17. Does the unit have an emergency brake which will automatically stop the equipment upon brake failure? Is this system manually operable from the drivers position? (16.A.07)			
18. Is all equipment with windshields equipped with powered wipers and defogging or defrosting system? (16.A.07)			
19. Are all vehicles which will be parked or moving slower than normal traffic on haul roads equipped with a yellow flashing light or flasher visible from all directions? (16.A.13)			
20. Is the slow moving emblem used on all vehicles which by design move at 25 MPH or less on public roads? (08A.04)			

	Yes	No	N/A
21. Have air tanks been tested and certified? (20.A.01)			
22. Is an air pressure gage in working condition installed on the unit? (20.A.12)			
23. Does the air tank have an accessible drain valve? (20.B.17)			
24. Remarks: (Enter action taken for all “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager			

SAFETY CHECKLIST FOR MATERIAL HOISTS

Contract # and title:	
Equipment name & number:	
Contractor:	Subcontractor:
Contract Inspector:	Date inspected:

	Yes	No	N/A
1. Are all hoist towers, masts, guys or braces, counterweights, drive machinery supports, sheave supports, platforms, supporting structures, and accessories designed by a licensed engineer? (16.K.02)			
2. Is a copy of the hoist operating manual available? (16.K.04)			
3. Do all floors and platforms have slip-resistant surfaces? (16.K.08)			
4. Are landings and runways adequately barricaded and is overhead protection provided where needed? (16.K.08)			
5. Are hoisting ropes installed IAW manufacturer's instructions? (16.K.10)			
6. Are operating rules posted at the hoist operator's station? (16.K.14)			
7. Are air powered hoists connected to an air supply of sufficient capacity and pressure to safely operate the hoist? (16.K.15)			
8. Are pneumatic hoses secured by some positive means to prevent accidental disconnection? (16.K.15)			
9. Remarks: (Enter actions taken for all "no" answers.)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAD Form 1666g-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

SAFETY CHECKLIST FOR EARTH DRILLING EQUIPMENT

Contract # and title:	
Equipment name & number:	
Contractor:	Subcontractor:
Contractor inspector:	Date inspected:

	Yes	No	N/A
1. Is a copy of the manual for all drilling equipment available? (16.M.01)			
2. Have all overhead electrical hazards and potential ground hazards been identified in a site layout plan and addressed in an activity hazard analysis? (16.M.02)			
3. Are MSDSs for all drilling fluids available? (16.M.05)			
4. Does the drilling equipment have 2 easily accessible emergency shut down devices (one for the operator and one for the helper)? (16.M.06)			
5. Is the equipment posted with a warning of electrical hazards? (16.M.06)			
6. Is there a spotter or an electrical proximity warning device available to ensure safe distances from power lines are maintained? (16.M.06)			
7. Remarks: (Enter actions taken for “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager			

SAD Form 1666h-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

CONSTRUCTION PROGRESS CHART

(EP 415-1-260)

REQUIREMENTS CONTROL SYMBOL

1. CONTRACTOR	3. PROJECT	5. CONTRACT DESCRIPTION	6. SUBMITTED FOR APPROVAL	DATE
2. CONTRACT NUMBER	4. LOCATION		7. APPROVAL RECOMMENDED	DATE
			8. APPROVED	DATE

LEGEND

BARS:

Scheduled progress to date of report

Actual progress

CURVES:

Scheduled progress _____ Actual progress .....

PRINCIPAL CONTRACT FEATURE	LINE ITEM	WT	ESTIMATED COST	
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL
				SCHED.
				ACTUAL

100
90
80
70
60
50
40
30
20
10
0

ENG FORM 1 JUNE 66 2454

PREVIOUS EDITION MAY BE USED.

☆ U.S. Government Printing Office: 1984—426-631/9022

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE	TRANSMITTAL NO.

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SEC. NO. *(Cover only one section with each transmittal)*	PROJECT TITLE AND LOCATION		CHECK ONE: THIS TRANSMITTAL IS FOR ☐ FIO ☐ GOV'T. APPROVAL

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* *b.*	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction no. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruction No. 6)* *h.*	FOR CE USE CODE *i.*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS	I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated. NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED *(List by Item No.)*	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for submittals under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted.

B -- Approved, except as noted on drawings.

C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required.

D -- Will be returned by separate correspondence.

E -- Disapproved (See attached).

F -- Receipt acknowledged.

FX -- Receipt acknowledged, does not comply as noted with contract requirements.

G -- Other *(Specify)*

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

COST ESTIMATE ANALYSIS

For use of this form, see TM 5-800-2; the proponent agency is USACE.

PROJECT	INVITATION/CONTRACTOR	EFFECTIVE PRICING DATE	DATE PREPARED
LOCATION	CODE (Check one) ☐ A ☐ B ☐ C ☐ OTHER	DRAWING NO.	SHEET OF SHEETS
		ESTIMATOR	CHECKED BY

TASK DESCRIPTION	QUANTITY		LABOR				EQUIPMENT		MATERIAL		TOTAL	SHIPPING	
	NO. OF UNITS	UNIT MEAS	MH UNIT	TOTAL HRS	UNIT PRICE	COST	UNIT PRICE	COST	UNIT PRICE	COST		UNIT WT	TOTAL WT
TOTAL THIS SHEET													

DA FORM 5418-R, Apr 85

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

Form Approved
OMB No. 0704-0188

PAGE OF PAGES

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, Va 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. **FROM** *(Installation/Activity/Service and Zip code)*	2. OPERATING UNIT	3. DISTRICT CODE	4. OPERATING AGENCY	5. DATE	6. JOB NUMBER	7. SERIAL NUMBER	8. CONTRACT NUMBER

9. **TO** *(Installation/Activity/Service and Zip code)*	10. OPERATING UNIT	11. DISTRICT CODE	12. OPERATING AGENCY	13. ACCOUNTING NUMBER	14. ACCOUNTABLE OFFICE NUMBER	15. TYPE OF TRANSACTION		16. PROJECT NUMBER
						A. ☐ NEW CONSTR. ☐ EXISTING FAC. ☐ CAPITAL IMP. ☐ OTHER *(Specify)*	B. ☐ BENF/O ☐ PHYSICAL COM. ☐ FINAN. COM. ☐ OTHER *(Specify)*	

ITEM NO. 17	CATEGORY CODE 18	FACILITY *(Category description)* 19	NO. OF UNITS 20	TYPE 21	UNIT OF MEAS. 22	TOTAL QUANTITY 23	COST 24	DRAWING NUMBERS 25	REMARKS 26

27.		28. ACCEPTED BY *(Signature)*	DATE
TRANSFERRED BY *(Signature)*	DATE	TITLE *(Post Engr./Base Civ. Engr./Navy Rep.)*	29. PROPERTY VOUCHER NUMBER
TITLE *(Area Engr./Base Engr./DPWO)*			

30. CONSTRUCTION DEFICIENCIES

31. REMARKS

INSTRUCTIONS

This form has been designed and issued for use in connection with the transfer of military real property between the military departments and to or from other government agencies. It supersedes ENG Forms 290 and 290B (formerly used by the Army and Air Force) and NAVDOCKS Form 2317 (formerly used by the Navy).

Existing instructions issued by the military departments relative to the preparation of the three superseded forms are applicable to this form to the extent that the various items and columns on the superseded forms have been retained. Additional instructions, as appropriate, will be promulgated by the military departments in connection with any new items appearing hereon.

With the issuance of this DD form, it is not intended that the departments shall revise and reprint manuals and directives simply to show the number of this DD form. Such action can be accomplished through the normal course of revision for other reasons.

Approved by OM 0348-0046

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action:

☐ a. contract
b. grant
c. cooperative agreement
d. loan
e. loan guarantee
f. loan insurance

2. Status of Federal Action:

☐ a. bid/offer/application
b. initial award
c. post-award

3. Report Type:

☐ a. initial filing
b. material change

For Material Change Only:
year _____ quarter _____
date of last report _____

4. Name and Address of Reporting Entity:

☐ Prime ☐ Subawardee
Tier _____, *if known*:

Congressional District, *if known:*

5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:

Congressional District, *if known*:

6. Federal Department/Agency:

7. Federal Program Name/Description:

CFDA Number, *if applicable*: _____

8. Federal Action Number, *if known*:

9. Award Amount, *if known*:

$

10. a. Name and Address of Lobbying Entity
(*if individual, last name, first name, MI):*

b. Individuals Performing Services *(including address if different from No. 10a)*
(last name, first name, MI):

(attach Continuation Sheet(s) SF-LLL-A, *if necessary*)

11. Amount of Payment *(check all that apply)*:

$ _____ ☐ actual ☐ planned

12. Form of Payment *(check all that apply)*:

☐ a. cash
☐ b. in-kind; specify: nature _____
value _____

13. Type of Payment *(check all that apply)*:

☐ a. retainer
☐ b. one-time fee
☐ c. commission
☐ d. contingent fee
☐ e. deferred
☐ f. other; specify: _____

14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s), or Member(s) contacted, for Payment indicated in Item 11:

(attach Continuation Sheet(s) SF-LLL-A, *if necessary*)

15. Continuation Sheet(s) SF-LLL-A attached: ☐ Yes ☐ No

16. Information requested through this form is authorized by title 31 U.S.C section 1352. This disclosure of lobbyig activities is a materia representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352 . This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to

Signature: _____

Print Name: _____

Title: _____

Telephone No.: _____ **Date:** _____

Federal Use Only:

Authorized for Local Reproduction

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks “Subawardee”, then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., “RFP-DE-90-001.”

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individuals(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).

11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.

12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.

13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.

    Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503.

DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Approved by OM
0348-0046

Reporting Entity: _____ Page ____ of ____ ____

*U.S. G.P.O. 1990-260-708:00012

REAL PROPERTY INVENTORY

ITEM	TALLY	TOTAL
COMMODES		
LAVATORIES		
URINALS		
EXHAUST FAN (9")		
EXHAUST FAN (OTHER)		
WATER COOLER		
HOTWATER HEATER		
MOP SINK		
AC PLANT	LS 5 TN. 5-25 TN. 25-100 TN. OVER 100 TN.	
AS (WINDOW TYPE)		
FIRE ALARM SYSTEM	MANUAL HALON SPRINKLER	
EMERGENCY LIGHTS		
UNIT HEATER		
STRIP HEATER		
COOLING TOWER		
WALK-IN COOLER		
AIR CURTAIN		
EYE WASH		
SHOWERS		
BOILER	GAS FIRED OIL FIRED STEAM	
FUEL TANK	UNDERGROUND OUTSIDE	

REAL PROPERTY INVENTORY

ITEM	TALLY	TOTAL
WASH BASIN		
AIR COMPRESSOR		
HOISTS		
INVENTORY BY:		DATA:
RECONCILED BY:		DATA:

REAL PROPERTY INVENTORY

ITEM	TALLY	TOTAL
INVENTORIED BY:		DATE:
RECONCILED BY:		DATE:

PROJECT TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

01310 PROGRESS SCHEDULES
01330 SUBMITTAL PROCEDURES
01355A ENVIRONMENTAL PROTECTION
01420 SOURCES FOR REFERENCE PUBLICATIONS
01451A CONTRACTOR QUALITY CONTROL
01500 TEMPORARY CONSTRUCTION FACILITIES
01780 AS-BUILT DRAWINGS SUBMITTALS

DIVISION 02 - SITE WORK

02000 SITEWORK
02140 DEWATERING
02231 CLEARING AND GRUBBING
02235 INCLINOMETERS
02240R *4 SOIL STABILIZATION BY SOIL-CEMENT MIXING
02241R *4 SOIL-CEMENT MIXING TEST SECTIONS
02250R *4 DRAINS
02300 EARTHWORK
02821a FENCING
02921a SEEDING

-- End of Project Table of Contents --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01310

PROGRESS SCHEDULES

04/03

PART 1 GENERAL

1.1 REFERENCES (Not applicable)
1.2 SUBMITTALS

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 CONSTRUCTION PROGRESS CHART

-- End of Section Table of Contents --

CEGS-01310 (04/03)

SECTION 01310

PROGRESS SCHEDULES
04/03

PART 1 GENERAL

1.1 REFERENCES (Not applicable)

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 will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-05 Design Data

Construction Progress Chart; G, RE

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 CONSTRUCTION PROGRESS CHART

Pursuant to the contract clause entitled "SCHEDULE FOR CONSTRUCTION CONTRACTS" the Contractor shall, within 5 days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare a schedule of construction utilizing a construction progress chart as described herein. Construction progress charts shall be prepared on ENG Form 2454, or on a similar form subject to the approval of the Contracting Officer. The Contractor shall submit five copies of the Construction Progress Chart for approval. No progress payments for work will be made without an approved progress chart.

The Contractor shall prepare the chart with the following considerations. The contract work shall be divided into definable contract features. As a minimum, the Contractor shall address each specification section as a principal contract feature. The weighted value (WT.) column should indicate the percentage of the contract for which each principal contract feature accounts. The vertical lines shall be identified by specific time frames, (i.e., weekly, bi?weekly, monthly) with one space accounting for no more than 1 month. The Contractor shall identify the date when Notice to Proceed is acknowledged on the chart. The Contractor shall also identify the contract completion date on the chart.

The Contractor shall place bars on the chart to indicate scheduled progress for each feature of work. The Contractor shall note the anticipated percentage complete for each item at the end of each month and at the end of each scheduled block. Activities shall be identifiable by bid item if applicable.

The Contractor shall submit monthly a revised progress chart showing both the proposed and actual progress for each of the construction features. The revised progress chart shall be submitted with the monthly pay estimate.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01330

SUBMITTAL PROCEDURES

09/00

PART 1 GENERAL

1.1 SUBMITTAL IDENTIFICATION
1.2 SUBMITTAL CLASSIFICATION
1.2.1 Government Approved
1.2.2 Information Only
1.3 APPROVED SUBMITTALS
1.4 DISAPPROVED SUBMITTALS
1.5 WITHHOLDING OF PAYMENT

PART 2 PRODUCTS (Not used)

PART 3 EXECUTION

3.1 GENERAL
3.2 SUBMITTAL REGISTER
3.3 SCHEDULING
3.4 TRANSMITTAL FORM (ENG FORM 4025)
3.5 SUBMITTAL PROCEDURE
3.5.1 Procedures
3.5.2 Deviations
3.6 CONTROL OF SUBMITTALS
3.7 GOVERNMENT APPROVED SUBMITTALS
3.8 INFORMATION ONLY SUBMITTALS
3.9 STAMPS

-- End of Section Table of Contents --

CEGS-01330/S (September 2000)

SECTION 01330

SUBMITTAL PROCEDURES
09/00

PART 1 GENERAL
1.1 SUBMITTAL IDENTIFICATION

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

SD-01 Preconstruction Submittals

SD-02 Shop Drawings

SD-03 Product Data

SD-04 Samples

SD-05 Design Data

SD-06 Test Reports

SD-07 Certificates

SD-08 Manufacturer's Instructions

SD-09 Manufacturer's Field Reports

SD-10 Operation and Maintenance Data

SD-11 Closeout Submittals

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 resubmittal 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.

PART 2 PRODUCTS (Not used)

PART 3 EXECUTION

3.1 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 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.

3.2 SUBMITTAL REGISTER

At the end of this section is a submittal register 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. Columns "c" through "f" have beem completed by the Government; the Contractor shall complete columns "a" and "g" through

"i" and submit the forms to the Contracting Officer for approval within 20 calendar days after Notice to Proceed. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated.

3.3 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.

3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) included in Attachment 1 to Section 00800 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 will be furnished to the Contractor. 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.

3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

3.5.1 Procedures

The Contractor shall be responsible for the scheduling and control of all submittals. The Contractor is responsible for confirming that the submittal register includes all submittals required by the contract documents.

In addition to those items listed on ENG Form 4288, the Contractor will 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 and critical items must be tied to the Contractor's approved schedule where applicable.

The Contractor shall submit to the Contracting Officer for approval a minimum of five copies of all G/RE (Resident/Area Office Review), G/ED (Engineering Division Review) or G/AE (Architect-Engineer Review) level submittals. Three copies of all FIO level submittals shall be provided. The number of copies of submittals specified in this portion of the contract shall be complied with in lieu of four copies as specified by FAR 52.236-21.

Where ENG Form 4025 must be submitted prior to approval of the Construction Progress Schedule, the Contractor shall submit an initial annotated ENG Form 4288 upon which dates for submittal, approval and delivery of procurement items shall be included for the first 60 days of the work. Upon approval of the Construction Progress Schedule, or no later than 60 days after Notice to Proceed, the Contractor shall submit final annotated

copies of ENG Form 4288. Dates shall be coordinated with the approved Construction Progress Schedule to logically interface with the sequence of construction. Critical item numbers will be shown on the listing if NAS is required.

Furnishing the schedule shall not be interpreted as relieving the Contractor of his obligation to comply with all the specification requirements for the items on the schedule. Contractor's Quality Control representative shall review the listing at least every 30 days and take appropriate action to maintain an effective system. The Contractor shall furnish a list each 30 days of all submittals on which either Government's or Contractor's action is past due. He shall also furnish revised due dates in those cases when the original submittal schedule is no longer realistic. This monthly list of delayed items shall also be annotated by the Contractor to show what corrective action he is taking with regard to slippages in submittal schedule which are attributable to actions by him, his subcontractors, or suppliers.

The Contractor shall provide a complete updated submittal register indicating the current status of all submittals when requested by the Contracting Officer in order to assure himself the schedule is being maintained.

The Contractor shall certify that each submittal is correct and in strict conformance with the contract drawings and specifications. All submittals not subject to the approval of the Contracting Officer will be submitted for information purposes only.

No Corps of Engineers action will be required prior to incorporating these items into the work, but the submittal shall be furnished to the Area/Resident Engineer not less than 2 weeks prior to procurement of Contractor certified material, equipment, etc.

These Contractor approved submittals will be used to verify that material received and used in the job is the same as that described and approved and will be used as record copies. All samples of materials submitted as required by these specifications shall be properly identified and labeled for ready identification, and upon being certified by the Contractor and reviewed by the Contracting Officer, shall be stored at the site of the work for job site use until all work has been completed and accepted by the Contracting Officer. Delegation of this approval authority to Contractor Quality Control does not relieve the Contractor from the obligation to conform to any contract requirement and will not prevent the Contracting Officer from requiring removal and replacement of construction not in contract conformance; nor does it relieve the Contractor from the requirement to furnish "samples" for testing by the Government Laboratory or check testing by the Government in those instances where the technical specifications so prescribe.

Contractor certified drawings will be subject to quality assurance review by the Government at any time during the duration of the contract. No adjustment for time or money will be allowed for corrections required as a result of noncompliance with plans and specifications.

Submittals Requiring Government Approval (G/ED Level, G/RE Level or G/AE level). Where the review authority is designated to the Government, the Contractor is required to sign the certification on ENG Form 4025 in the box beside the remarks block in Section I. The Government will code the items in block h and sign the approval action block in Section II as the

approving authority.

3.5.2 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.

3.6 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."

3.7 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.

3.8 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.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall 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: _____

-- End of Section --

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Seismic Remediation - Clemson Diversion Dams, Hartwell Lake

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01310	SD-05 Design Data															
			Construction Progress Chart		G													
			RE															
		01355A	SD-01 Preconstruction Submittals															
			Environmental Protection Plan	1.7	G													
			RE															
		01500	SD-01 Preconstruction Submittals															
			Site Utilization Plan		G	RE												
			Safety Surveillance Plan		G	RE												
			Temporary Water Withdrawal		G	RE												
			Permit															
		01780	SD-02 Shop Drawings															
			As-Built Drawings		G	RE												
			SD-03 Product Data															
			As-Built Record of Equipment and		G	RE												
			Materials															
		02000	SD-01 Preconstruction Submittals															
			Routing of Temporary Utilities		G	RE												
			Plan of Widening and Paving		G	RE												
			Abandonment of Instruments and		G	RE												
			Wells															
			SD-02 Shop Drawings															
			Pedestrians Walk-through		G	RE												
			Gate and Fencing		G	RE												
			Entrance Gates and Fencing		G	RE												
			SD-06 Test Reports															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Seismic Remediation - Clemson Diversion Dams, Hartwell Lake

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02000	Testing		G	RE												
			SD-11 Closeout Submittals															
			Abandonment Records		G	RE												
		02140	SD-01 Preconstruction Submittals															
			Dewatering Plan		G	ED												
			SD-06 Test Reports															
			Readings		G	RE												
		02231	SD-03 Product Data															
			Materials Other Than Salable															
			Timber															
		02235	SD-01 Preconstruction Submittals															
			Materials and Equipment		G	RE												
			Qualifications		G	RE												
			Installation of Casings		G	RE												
			SD-06 Test Reports															
			Readings		G	RE												
		02240R	SD-02 Shop Drawings *4															
			Soil-Cement Mixing Construction		G													
			ED															
			Mixing Spoils		G													
			SD-03 Product Data															
			Qualifications, Soil-Cement Mixing		G													
			Contractor															
			ED															
			Qualifications, Soil-Cement Mixing		G	ED												
			Contractor Personnel															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Seismic Remediation - Clemson Diversion Dams, Hartwell Lake

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02240R	Qualifications, Independent		G	ED												
			Quality Control Testing Laboratory															
			Mix Design		G													
			Water		G													
			Equipment		G													
			Procedure		G													
			Revisions to		G													
			Equipment/Procedures/Mix Design															
			SD-06 Test Reports															
			Daily Production Report		G													
			RE															
			Test Results		G													
			As-Built Plans and Test Data		G													
			ED															
		02241R	SD-02 Shop Drawings *4															
			Soil-Cement Mixing Construction		G													
			ED															
			Mixing Spoils		G													
			SD-03 Product Data															
			Qualifications, Soil-Cement Mixing		G													
			Contractor															
			ED															
			Qualifications, Soil-Cement Mixing		G	ED												
			Contractor Personnel															
			Qualifications, Independent		G	ED												
			Quality Control Testing Laboratory															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Seismic Remediation - Clemson Diversion Dams, Hartwell Lake

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02241R	Mix Design		G													
			Water		G													
			Equipment		G													
			Procedure		G													
			Revisions to		G													
			Equipment/Procedures/Mix Design															
			SD-06 Test Reports															
			Logs of Exploratory Borings		G	ED												
			Daily Production Report		G													
			RE															
			Test Results		G													
			As-Built Plans and Test Data		G													
			ED															
		02250R	SD-02 Shop Drawings *4															
			Construction Plan		G	ED												
			Shoring and Sheeting Plan		G	ED												
			Details of Surface Roadway Box		G	ED												
			SD-03 Product Data															
			Certificate of Compliance, Pipe		G	ED												
			Certificate of Compliance, Fine		G	ED												
			and Coarse Aggregates															
			Certificates of Compliance,		G	ED												
			Geotextile Fabrics for Riprap and															
			for Drain															
			Certificate of Compliance,		G	ED												
			Concrete															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Seismic Remediation - Clemson Diversion Dams, Hartwell Lake

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02250R	Certificate of Compliance, Riprap		G	ED												
			SD-04 Samples															
			Samples of Geotextiles and Sewn		G	ED												
			Seam															
		02300	SD-02 Shop Drawings															
			Earthwork Plan		G	ED												
			SD-03 Product Data															
			Borrow Source		G	ED												
		02821a	SD-02 Shop Drawings															
			Details		G													
			RE															
			SD-07 Certificates															
			Chain Link Fence	2.1.1	G													
			RE															
		02921a	SD-03 Product Data															
			Equipment		G	RE												
			Surface Erosion Control Material	2.8	G	RE												
			Chemical Treatment Material	1.5.3	G	RE												
			Delivery	1.5.1	G	RE												
			Finished Grade and Topsoil	3.2.1	G	RE												
			Topsoil	2.2	G	RE												
			Quantity Check	3.5	G	RE												
			Seed Establishment Period	3.9	G	RE												
			Maintenance Record	3.9.3.5	G	RE												
			Application of Pesticide	3.6	G	RE												
			SD-04 Samples															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Seismic Remediation - Clemson Diversion Dams, Hartwell Lake

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02921a	Delivered Topsoil	1.5.1.1	G	RE												
			Soil Amendments	2.3	G	RE												
			Mulch	2.4	G	RE												
			SD-06 Test Reports															
			Equipment Calibration	3.1.3	G	RE												
			Soil Test	3.1.4	G	RE												
			SD-07 Certificates															
			Seed	2.1	G	RE												
			Topsoil	2.2	G	RE												
			pH Adjuster	2.3.1	G	RE												
			Fertilizer	2.3.2	G	RE												
			Organic Material	2.3.4	G	RE												
			Soil Conditioner	2.3.5	G	RE												
			Mulch	2.4	G	RE												
			Asphalt Adhesive	2.5	G	RE												
			Pesticide	2.7	G	RE												

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01355A

ENVIRONMENTAL PROTECTION

02/02

PART 1 GENERAL

1.1 REFERENCES
1.2 DEFINITIONS
1.2.1 Environmental Pollution and Damage
1.2.2 Environmental Protection
1.2.3 Contractor Generated Hazardous Waste
1.3 GENERAL REQUIREMENTS
1.4 SUBCONTRACTORS
1.5 PAYMENT
1.6 SUBMITTALS
1.7 ENVIRONMENTAL PROTECTION PLAN
1.7.1 Compliance
1.7.2 Contents
1.7.3 Appendix
1.8 PROTECTION FEATURES
1.9 OMITTED
1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS
1.11 NOTIFICATION

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS
3.2 LAND RESOURCES
3.2.1 Work Area Limits
3.2.2 Landscape
3.2.3 Omitted
3.2.4 Contractor Facilities and Work Areas
3.3 WATER RESOURCES
3.3.1 Dewatering Operations
3.4 AIR RESOURCES
3.4.1 Particulates
3.4.2 Odors
3.4.3 Sound Intrusions
3.4.4 Burning
3.5 OMITTED
3.6 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL
3.6.1 Solid Wastes
3.6.2 Chemicals and Chemical Wastes
3.6.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials
3.6.4 Fuel and Lubricants
3.6.5 Waste Water
3.7 OMITTED
3.8 OMITTED
3.9 OMITTED

3.10 BIOLOGICAL RESOURCES
3.11 OMITTED
3.12 OMITTED
3.13 OMITTED
3.14 OMITTED
3.15 TRAINING OF CONTRACTOR PERSONNEL
3.16 OMITTED
3.17 POST CONSTRUCTION CLEANUP

-- End of Section Table of Contents --

UFGS-01355A (February 2002)

SECTION 01355A

ENVIRONMENTAL PROTECTION
02/02

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 in the text by basic designation only.

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

40 CFR 68	Chemical Accident Prevention Provisions
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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps on Engineers Safety and Health Requirements Manual

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.

1.3 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 bid for sitework. 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 "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G, RE

The environmental protection plan.

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the

site, the Contractor shall 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 shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall 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 which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall 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 shall be current and maintained onsite by the Contractor.

1.7.1 Compliance

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

1.7.2 Contents

The environmental protection plan shall include, but shall not be limited 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. Omitted.

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 68, 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. Omitted.

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. The plan shall specifically address dust control measures to be used at the grout batch plant and during transfer of cement from cement tanker trucks to storage silos.

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 clean-up water, dewatering of ground water, and water used in flushing of grout lines. 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.

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 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 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 OMITTED

1.10 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.

1.11 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 uncleared 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 Omitted

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 of Contractor facilities shall be made only when 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 Dewatering Operations

Construction operations for dewatering shall be controlled at all times to maintain compliance with existing State water quality standards and designated uses of the surface water body.

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 concrete and grout 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 shall be utilized 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 South Carolina rules.

3.4.4 Burning

Burning shall be prohibited on the Government premises.

3.5 OMITTED

3.6 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.

3.6.1 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 comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

3.6.2 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.

3.6.3 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. 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 berming 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. The Contractor shall coordinate the disposition of hazardous waste with the Contracting Officer.

3.6.4 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.

3.6.5 Waste Water

Disposal of waste water shall be as specified below.

a. Waste water from construction activities, such as onsite material processing and soil-cement mixing 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 by collecting and placing it in a retention pond where suspended material can be settled out and/or the water can evaporate to separate solids and pollutants from the water. The site for the retention pond shall be coordinated and approved with the Contracting Officer. The residue left in the pond prior to completion of the project shall be removed, tested, and disposed off-Government property in accordance with Federal, State, and local laws and regulations. The area shall be backfilled to the original grade, top-soiled and seeded/sodded.

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

3.7 OMITTED
3.8 OMITTED
3.9 OMITTED

3.10 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.

3.11 OMITTED
3.12 OMITTED
3.13 OMITTED
3.14 OMITTED

3.15 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; and endangered species and their habitat that are known to be in the area.

3.16 OMITTED

3.17 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 TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS

08/02

PART 1 GENERAL

1.1 REFERENCES
1.2 ORDERING INFORMATION

-- End of Section Table of Contents --

SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS
08/02

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.

ACI INTERNATIONAL (ACI)
P.O. Box 9094
Farmington Hills, MI 48333-9094
Ph: 248-848-3700
Fax: 248-848-3701
Internet: http://www.aci-int.org

AIR CONDITIONING AND REFRIGERATION INSTITUTE (ARI)
4301 North Fairfax Dr., Suite 425
ATTN: Pubs Dept.
Arlington, VA 22203
Ph: 703-524-8800
Fax: 703-528-3816
E-mail: ari@ari.org
Internet: http://www.ari.org

AIR CONDITIONING CONTRACTORS OF AMERICA (ACCA)
2800 Shirlington Road, Suite 300
Arlington, VA 22206
Ph: 703-575-4477
FAX: 703-575-4449
Internet: http://www.acca.org

AIR DIFFUSION COUNCIL (ADC)
1000 East Woodfield Road, Suite 102
Shaumburg, IL 60173-5921
Ph: 847-706-6750
Fax: 847-706-6751
Internet: http://www.flexibleduct.org

AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA)
30 W. University Dr.
Arlington Heights, IL 60004-1893
Ph: 847-394-0150
Fax: 847-253-0088
Internet: http://www.amca.org

ALUMINUM ASSOCIATION (AA)

900 19th Street N.W.
Washington, DC 20006
Ph: 202-862-5100
Fax: 202-862-5164
Internet: http://www.aluminum.org

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
1827 Walden Ofc. Sq.
Suite 104
Schaumburg, IL 60173-4268
Ph: 847-303-5664
Fax: 847-303-5774
Internet: http://www.aamanet.org

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
444 N. Capital St., NW, Suite 249
Washington, DC 20001
Ph: 800-231-3475 202-624-5800
Fax: 800-525-5562 202-624-5806
Internet: http://www.aashto.org

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)
P.O. Box 12215
Research Triangle Park, NC 27709-2215
Ph: 919-549-8141
Fax: 919-549-8933
Internet: http://www.aatcc.org

AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)
2025 M Street, NW, Suite 800
Washington, DC 20036
Ph: 202-367-1155
Fax: 202-367-2155
Internet: http://www.abma-dc.org

AMERICAN BOILER MANUFACTURERS ASSOCIATION (ABMA)
4001 North 9th Street, Suite 226
Arlington, VA 22203-1900
Ph: 703-522-7350
Fax: 703-522-2665
Internet: http://www.abma.com

AMERICAN CONCRETE PIPE ASSOCIATION (ACPA)
222 West Las Colinas Blvd., Suite 641
Irving, TX 75039-5423
Ph: 972-506-7216 or 800-290-2272
Fax: 972-506-7682
Internet: http://www.concrete-pipe.org

e-mail: info@concrete-pipe.org

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)
1330 Kemper Meadow Dr.
Suite 600
Cincinnati, OH 45240
Ph: 513-742-2020
Fax: 513-742-3355
Internet: http://www.acgih.org
E-mail: pubs@acgih.org

AMERICAN FOREST & PAPER ASSOCIATION (AF&PA)
American Wood Council
ATTN: Publications Dept.
1111 Nineteenth St. NW, Suite 800
Washington, DC 20036
Ph: 800-294-2372 or 202-463-2700
Fax: 202-463-2471
Internet: http://www.afandpa.org/awc/

AMERICAN GAS ASSOCIATION (AGA)
400 N. Capitol St. N.W.Suite 450
Washington, D.C. 20001
Ph: 202-824-7000
Fax: 202-824-7115
Internet: http://www.aga.org

AMERICAN GAS ASSOCIATION LABORATORIES (AGAL)
400 N. Capitol St. N.W.Suite 450
Washington, D.C. 20001
Ph: 202-824-7000
Fax: 202-824-7115
Internet: http://www.aga.org

AMERICAN GEAR MANUFACTURERS ASSOCIATION (AGMA)
1500 King St., Suite 201
Alexandria, VA 22314-2730
Ph: 703-684-0211
Fax: 703-684-0242
Internet: http://www.agma.org

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
One East Wacker Dr., Suite 3100
Chicago, IL 60601-2001
Ph: 312-670-2400
Publications: 800-644-2400
Fax: 312-670-5403
Internet: http://www.aisc.org

AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC)
7012 So. Revere Parkway, Suite 140
Englewood, CO 80112
Ph: 303-792-9559
Fax: 303-792-0669
Internet: http://www.aitc-glulam.org

AMERICAN IRON AND STEEL INSTITUTE (AISI)
1101 17th St., NW Suite 1300
Washington, DC 20036

Ph: 202-452-7100
Internet: http://www.steel.org

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
1819 L Street, NW, 6th Floor
Washington, DC 20036
Ph: 202-293-8020
Fax: 202-293-9287
Internet: http://www.ansi.org/

Note --- Documents beginning with the letter "S" can be ordered from:

Acoustical Society of America
Standards and Publications Fulfillment Center
P. O. Box 1020
Sewickley, PA 15143-9998
Ph: 412-741-1979
Fax: 412-741-0609
Internet: http://asa.aip.org
General e-mail: asa@aip.org
Publications e-mail: asapubs@abdintl.com

AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA)
1250 I St., NW, Suite 500
Washington, DC 20005-3922
Ph: 202-789-2900
FAX: 202-789-1893
Internet: http://www.anla.org

AMERICAN PETROLEUM INSTITUTE (API)
1220 L St., NW
Washington, DC 20005-4070
Ph: 202-682-8000
Fax: 202-682-8223
Internet: http://www.api.org

AMERICAN PUBLIC HEALTH ASSOCIATION (APHA)
800 I Street, NW
Washington, DC 20001
PH: 202-777-2742
FAX: 202-777-2534
Internet: http://www.apha.org

AMERICAN RAILWAY ENGINEERING & MAINTENANCE-OF-WAY ASSOCIATION (AREMA)
8201 Corporate Dr., Suite 1125
Landover, MD 20785-2230
Ph: 301-459-3200
Fax: 301-459-8077
Internet: http://www.arema.org

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)
1711 Arlingate Lane
P.O. Box 28518
Columbus, OH 43228-0518
Ph: 800-222-2768
Fax: 614-274-6899
Internet: http://www.asnt.org

AMERICAN SOCIETY FOR QUALITY (ASQ)
600 North Plankinton Avenue
Milwaukee, WI 53202-3005
Ph: 800-248-1946
Fax: 414-272-1734
Internet: http://www.asq.org

ASTM INTERNATIONAL (ASTM)

100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Ph: 610-832-9585
Fax: 610-832-9555
Internet: http://www.astm.org

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
1801 Alexander Bell Drive
Reston, VA 20191-4400
Ph: 703-295-6300 - 800-548-2723
Fax: 703-295-6222
Internet: http://www.asce.org
e-mail: marketing@asce.org

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)
1791 Tullie Circle, NE
Atlanta, GA 30329
Ph: 800-527-4723 or 404-636-8400
Fax: 404-321-5478
Internet: http://www.ashrae.org

AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)
901 Canterbury, Suite A
Westlake, OH 44145
Ph: 440-835-3040
Fax: 440-835-3488
E-mail: asse@ix.netcom.com
Internet: http://www.asse-plumbing.org

AMERICAN WATER WORKS ASSOCIATION(AWWA)
6666 West Quincy
Denver, CO 80235
Ph: 800-926-7337 - 303-794-7711
Fax: 303-794-7310
Internet: http://www.awwa.org

AMERICAN WELDING SOCIETY (AWS)
550 N.W. LeJeune Road
Miami, FL 33126
Ph: 800-443-9353 - 305-443-9353
Fax: 305-443-7559
Internet: http://www.amweld.org

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)
P.O. Box 5690
Grandbury, TX 76049-0690
Ph: 817-326-6300
Fax: 817-326-6306

Internet: http://www.awpa.com

APA - THE ENGINEERED WOOD ASSOCIATION (APA)
P.O.Box 11700
Tacoma, WA 98411-0700
Ph: 253-565-6600
Fax: 253-565-7265
Internet: http://www.apawood.org

ARCHITECTURAL & TRANSPORTATION BARRIERS COMPLIANCE BOARD (ATBCB)

The Access Board
1331 F Street, NW, Suite 1000
Washington, DC 20004-1111
PH: 202-272-5434
FAX: 202-272-5447
Internet: http://www.access-board.gov

ARCHITECTURAL WOODWORK INSTITUTE (AWI)
1952 Isaac Newton Square West
Reston, VA 20190
Ph: 703-733-0600
Fax: 703-733-0584
Internet: http://www.awinet.org

ASBESTOS CEMENT PIPE PRODUCERS ASSOCIATION (ACPPA)
PMB114-1745 Jefferson Davis Highway
Arlington, VA 22202
Ph: 514-861-1153
Fax: 514-861-1152
Internet: None

ASM INTERNATIONAL (ASM)
9639 Kinsman Road
Materials Park, OH 44073-0002
Ph: 440-338-5151
Fax: 440-338-4634
Internet: http://www.asm-intl.org
Order Publications From:
ASM International
ATTN: MSC/Book Order
P.O. Box 473
Novelty, OH 44072-9901

ASME INTERNATIONAL (ASME)
Three Park Avenue
New York, NY 10016-5990
Ph: 212-591-7722
Fax: 212-591-7674
Internet: http://www.asme.org

ASPHALT INSTITUTE (AI)
Research Park Dr.
P.O. Box 14052
Lexington, KY 40512-4052
Ph: 859-288-4960
Fax: 859-288-4999
Internet: http://www.asphaltinstitute.org

ASSOCIATED AIR BALANCE COUNCIL (AABC)
1518 K St., NW, Suite 503
Washington, DC 20005
Ph: 202-737-0202
Fax: 202-638-4833
Internet: http://www.aabchq.com
E-mail: aabchq@aol.com

ASSOCIATION FOR THE ADVANCEMENT OF MEDICAL INSTRUMENTATION (AAMI)
1110 N. Glebe Rd., Suite 220
Arlington, VA 22201-5762
Ph: 1-800l-332-2264 or 703-525-4890
Fax: 703-276-0793
Internet: http://www.aami.org

ASSOCIATION OF EDISON ILLUMINATING COMPANIES (AEIC)
600 No. 18th St.
P.O. Box 2641
Birmingham, AL 35291
Ph: 205-257-2530
Fax: 205-257-2540
Internet: http://www.aeic.org

ASSOCIATION OF HOME APPLIANCE MANUFACTURERS (AHAM)
1111 19th St. NW., Suite 402
Washington, DC 20036
Ph: 202-872-5955
Fax: 202-872-9354
Internet: http://www.aham.org

BIFMA INTERNATIONAL (BIFMA)
2680 Horizon Drive SE, Suite A-1
Grand Rapids, MI 49546-7500
Ph: 616-285-3963
Fax: 616-285-3765
Internet: http://www.bifma.com
E-mail: email@bifma.com

BIOCYCLE, JOURNAL OF COMPOSTING AND RECYCLING (BIOCYCLE)
The JG Press Inc.
419 State Avenue
Emmaus PA. 18049
Ph: 610-967-4135
Internet: http://www.biocycle.net
E-mail: jgpress@jgpress.com

BRICK INDUSTRY ASSOCIATION (BIA)
11490 Commerce Park Dr., Suite 308
Reston, VA 22091-1525
Ph: 703-620-0010
Fax: 703-620-3928
Internet: http://www.brickinfo.org

BRITISH STANDARDS INSTITUTE (BSI)
389 Chiswick High Road
London W4 4AL
United Kingdom
Phone: +44 (0)20 8996 9000
Fax: +44 (0)20 8996 7400

Email: Info@bsi-global.com
Website: http://www.bsi-global.com

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)
355 Lexington Ave.
17th floor
New York, NY 10017-6603
Ph: 212-297-2122
Fax: 212-370-9047
Internet: http://www.buildershardware.com

CARPET AND RUG INSTITUTE (CRI)
310 Holiday Ave.
Dalton, GA 30720
P.O. Box 2048
Dalton, GA 30722-2048
Ph: 1-800-882-3176 or 706-278-0232
Fax: 706-278-8835
Internet: http://www.carpet-rug.com

CAST IRON SOIL PIPE INSTITUTE (CISPI)
5959 Shallowford Rd., Suite 419
Chattanooga, TN 37421
Ph: 423-892-0137
Fax: 423-892-0817
Internet: http://www.cispi.org

CEILINGS & INTERIOR SYSTEMS CONSTRUCTION ASSOCIATION (CISCA)
1500 Lincoln Highway, Suite 202
St. Charles, IL 60174
Ph: 630-584-1919
Fax: 630-584-2003
Internet: http://www.cisca.org

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

1600 Clifton Road
Atlanta, GA 30333
PH: 404-639-3311
FAX:
Internet: http://www.cdc.gov

CHEMICAL FABRICS & FILM ASSOCIATION (CFFA)

1300 Sumner Ave.
Cleveland OH 44115-2851
PH: 216-241-7333
FAX: 216-241-0105
Internet: http://www.chemicalfabricsandfilm.com/
OK 4/02

CHLORINE INSTITUTE (CI)
2001 L St., NW Suite 506
Washington, DC 20036
Ph: 202-775-2790
Fax: 202-223-7225
Internet: http://www.cl2.com

COMPRESSED AIR AND GAS INSTITUTE (CAGI)

1300 Sumner Ave.
Cleveland OH 44115-2851
PH: 216-241-7333
FAX: 216-241-0105
Internet: http://www.cagi.org/

COMPRESSED GAS ASSOCIATION (CGA)
4221 Walney Road, 5th Floor
Chantilly, VA 20151-2923
Ph: 703-788-2700
Fax: 703-961-1831
Internet: http://www.cganet.com
e-mail: Customer_Service@cganet.com

CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
933 N. Plum Grove Rd.
Schaumburg, IL 60173-4758
Ph: 847-517-1200
Fax: 847-517-1206
Internet: http://www.crsi.org/

CONSUMER PRODUCT SAFETY COMMISSION (CPSC)
4330 East-West Highway
Bethesda, Maryland 20814-4408
Ph: 301-504-0990
Fx: 301-504-0124 and 301-504-0025
Internet: http://www.cpsc.gov

CONVEYOR EQUIPMENT MANUFACTURERS ASSOCIATION (CEMA)
6724 Lone Oak Blvd.
Naples, Florida 34109
Ph: 941-514-3441
Fax: 941-514-3470
Internet: http://www.cemanet.org

COOLING TECHNOLOGY INSTITUTE (CTI)
2611 FM 1960 West
Suite H-200
Houston, TX 77068-3730
Ph: 281-583-4087
Fax: 281-537-1721
Internet: http://www.cti.org

COPPER DEVELOPMENT ASSOCIATION (CDA)
260 Madison Ave.
New York, NY 10016
Ph: 212-251-7200
Fax: 212-251-7234
Internet: http://www.copper.org
E-mail: staff@cda.copper.org

CRANE MANUFACTURERS ASSOCIATION OF AMERICA (CMAA)
8720 Red Oak Blvd., Ste, 201
Charlotte, NC 28217 USA
Ph: 704-676-1190 or 800-722-6832
Fx: 704-676-1199
Internet: http://www.mhia.org/psc/psc_products_cranes.cfm

DISTRICT OF COLUMBIA MUNICIPAL REGULATIONS (DCMR)

441 4th Street NW
Wacsington DC 20001
PH: 202-727-1000
Internet: http://www.abfa.com/dcdocs/dcmrlist.htm

DOOR AND ACCESS SYSTEM MANUFACTURERS ASSOCIATION (DASMA)
1300 Sumner Avenue
Cleveland, OH 44115-2851
Ph: 216-241-7333
Fax: 216-241-0105
Internet: http://www.dasma.com
e-mail: dasma@dasma.com

DOOR AND HARDWARE INSTITUTE (DHI)
14150 Newbrook Dr.Suite 200
Chantilly, VA 20151-2223
Ph: 703-222-2010
Fax: 703-222-2410
Internet: http://www.dhi.org
e-mail: techdept@dhi.org

DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA)
245 Riverchase Parkway East, Suite 0
Birmingham, AL 35244
Ph: 205-402-8700
Fax: 205-402-8730
Internet: http://www.dipra.org
E-mail: info@dipra.org

EIFS INDUSTRY MEMBERS ASSOCIATION (EIMA)
3000 Corporate Center Drive, Suite 270
Morrow, GA 30260
Ph: 800-294-3462
Fax: 770-968-5818
Internet: http://www.eima.com

ELECTRICAL GENERATING SYSTEMS ASSOCIATION (EGSA)
1650 South Dixie Highway, Ste. 500
Boca Raton, FL 33432
Ph: 561-750-5575
Fax: 561-395-8557
Internet: http://www.egsa.org

ELECTRONIC INDUSTRIES ALLIANCE (EIA)
2500 Wilson Blvd.
Arlington, VA 22201-3834
Ph: 703-907-7500
Fax: 703-907-7501
Internet: http://www.eia.org

ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION (ERDA)
Organization abolished by Dept of Energy Act
(91 Stat 577)4 Aug 1977
Successor Organization is Department of Energy
PH:
FAX:

Internet: http://www.mbe.doe.gov/

ENGINE MANUFACTURERS ASSOCIATION (EMA)

Two North LaSalle Street, Suite 2200
Chicago, Il 60602
PH: 312-827-8700
FAX: 312-827-8737
Internet: http://www.engine-manufacturers.org/

ETL TESTING LABORATORIES (ETL)
Intertek Testing Services, ETL SEMKO
70 Codman Hill Road
Boxborough, MA 01719
PH: 1-800-967-5352
FAX: 1-800-813-9442
Internet: http://www.etlsemko.com
E-mail: info@etlsemko.com

EUROPEAN COMMITTEE FOR ELECTROTECHNICAL STANDARDIZATION (CENELEC)
CENELEC CS Info & Publications Department
Rue de Stassartstraat 35
1050 Brussels
Phone: + 32 2 519 68 71
Fax: + 32 2 519 69 19
Internet: http://www.cenelec.org

EXPANSION JOINT MANUFACTURERS ASSOCIATION (EJMA)
25 N Broadway
Tarrytown, NY 10591
Ph: 914-332-0040
Fax: 914-332-1541
Internet: http://www.ejma.org

FM GLOBAL (FM)
1301 Atwood Avenue
P.O. Box 7500
Johnston, RI 02919
Ph: (for publications) 781-255-6681
Ph: (Toll-Free): 877-364-6726
Fax: 781-255-0181
Internet: http://www.fmglobal.com

FLUID SEALING ASSOCIATION (FSA)
994 Old Eagle School Road #1019
Wayne, PA 19087
PH: 610-971-4850
FAX: 610-9971-4859
Internet: http://www.fluidsealing.com
E-mail: info@fluidsealing.com

FORESTRY SUPPLIERS (FSUP)
205 West Rankin St.
P.O. Box 8397
Jackson, MS 39284-8397
Ph: 601-354-3565
Fax: 601-292-0165
Internet: http://www.forestry-suppliers.com

FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH (FCCCHR)
University of South California
Kaprielian Hall 200
Los Angeles, CA 90089-2531
Ph: 213-740-2032
Fax: 213-740-8399
Internet: http://www.usc.edu/dept/fccchr

GEOLOGICAL SOCIETY OF AMERICA (GSA)
P.O. Box 9140
Boulder, CO 80301-9140
Ph: 800-443-4472
Fax: 303-357-1070
Internet: http://www.geosociety.org

GEOSYNTHETIC INSTITUTE (GSI)
475 Kedron Ave.
Folsom, PA 19033-1208
Ph: 610-522-8440
Fax: 610-522-8441
Internet: http://www.geosynthetic-institute.org

GLASS ASSOCIATION OF NORTH AMERICA (GANA)
2945 SW Wanamaker Drive, Suite A
Topeka, KS 66614-5321
Ph: 785-271-0208
Fax: 785-271-0166
Internet: http://www.glasswebsite.com/GANA

GYPSUM ASSOCIATION (GA)
810 First St. NE, Suite 510
Washington, DC 20002
Ph: 202-289-5440
Fax: 202-289-3707
Internet: http://www.gypsum.org

HARDWOOD PLYWOOD & VENEER ASSOCIATION (HPVA)
1825 Michael Faraday Dr.
P.O. Box 2789
Reston, VA 20195-0789
Ph: 703-435-2900
Fax: 703-435-2537
Internet: http://www.hpva.org

HEAT EXCHANGE INSTITUTE (HEI)
1300 Sumner Ave
Cleveland, OH 44115-2851
Ph: 216-241-7333
Fax: 216-241-0105
Internet: http://www.heatexchange.org
email: hei@heatexchange.org

HOIST MANUFACTURERS INSTITUTE (HMI)

8720 Red Oak Blvd., Suite 201
Charlotte, NC 28217
PH: 704-676-1190
FAX: 704-676-1199

Internet: http://www.mhia.org/psc/PSC_Products_Hoists.cfm

HOLLOW METAL MANUFACTURERS ASSOCIATION (HMMA)

NAAMM Headquarters
8 South Michigan Avenue, Suite 1000
Chicago, IL 60603
PH: 312-332-0405
FAX: 312-332-0706
Internet: http://www.naamm.org/hmma.htm

NOTE --- HMMA has merged with NAAAM.

H.P. WHITE LABORATORY (HPW)
3114 Scarboro Rd.
Street, MD 21154
Ph: 410-838-6550
fax: 410-838-2802
Internet: http://www.hpwhite.com

HYDRAULIC INSTITUTE (HI)
9 Sylvan Way, Suite 180
Parsippany, NJ 07054-3802
Ph: 888-786-7744 or 973-267-9700
Fax: 973-267-9055
Internet: http://www.pumps.org

HYDRONICS INSTITUTE DIVISION OF GAMA (HYI)
35 Russo Pl.
P.O. Box 218
Berkeley Heights, NJ 07922-0218
Ph: 908-464-8200
Fax: 908-464-7818
Internet: http://www.gamanet.org/publist/hydroordr.htm

IBM CORPORATION (IBM)
Publications
4800 Falls of the Neuse
Raleigh, NC 27609
Ph: 800-879-2755, Option 1
Fax: 800-445-9269
Internet: http://www.ibm.com/shop/publications/order

ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA)
120 Wall St., 17th Floor
New York, NY 10005-4001
Ph: 212-248-5000
Fax: 212-248-5017
Internet: http://www.iesna.org

INDUSTRIAL FASTENERS INSTITUTE (IFI)
1717 East 9th St., Suite 1105
Cleveland, OH 44114-2879
Ph: 216-241-1482
Fax: 216-241-5901
Internet: http://www.industrial-fasteners.org
e-mail: indfast@aol.com

INSECT SCREENING WEAVERS ASSOCIATION (ISWA)

DEFUNCT in 1997

INSTITUTE OF CLEAN AIR COMPANIES (ICAC)
1660 L St., NW, Suite 1100
Washington, DC 20036-5603
Ph: 202-457-0911
Fax: 202-331-1388
E-mail: jsmith@icac.com
Internet: http://icac.com

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
445 Hoes Ln, P. O. Box 1331
Piscataway, NJ 08855-1331
Ph: 732-981-0060 OR 800-701-4333
Fax: 732-981-9667
Internet: http://www.ieee.org
E-mail: customer.services@ieee.org

INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY (IEST)
940 East Northwest Highway
Mount Prospect, IL 60056
Ph: 847-255-1561
Fax: 847-255-1699
Internet: http://www.iest.org

INSULATED CABLE ENGINEERS ASSOCIATION (ICEA)
P.O. Box 1568
Carrollton, GA 30117
Ph: 770-830-0369
Fax: 770-830-8501
E-mail:
Internet: http://www.icea.net

INTERNATIONAL APPROVAL SERVICES (IAS)
8501 East Pleasant Valley Rd.
Cleveland, OH 44131
Ph: 216-524-4990
Fax: 216-328-8118
Internet: http://www.csa-international.org

INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO)
20001 East Walnut Dr., So.
Walnut, CA 91789-2825
Ph: 909-595-8449
Fax: 909-594-3690
Fax for Stds: 909-594-5265
Internet: http://www.iapmo.org

INTERNATIONAL CODE COUNCIL (ICC)
5203 Leesburg Pike, Suite 600
Falls Church, VA 22041
Ph: 703-931-4533
Fax: 703-379-1546
Internet: http://www.intlcode.org

INTERNATIONAL CONCRETE REPAIR INSTITUTE (ICRI)

3166 S. River Road, Suite 132

Des Plaines, IL 60018
Phone: 847-827-0830
Fax: 847-827-0832
Internet: http://www.icri.org

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO)
5360 Workman Mill Rd.
Whittier, CA 90601-2298
Ph: 800-284-4406
Ph: 562-699-0541
Fax: 562-692-3853
Internet: http://www.icbo.org

INTERNATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)

P.O. Box 687
106 Stone Street
Morrison, Colorado 80465
PH: 303-697-8441
FAX: 303-697-8431
Internet: http://www.netaworld.org

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
3, rue de Varembe, P.O. Box 131
CH-1211 Geneva 20, Switzerland
Ph: 41-22-919-0211
Fax: 41-22-919-0300
Internet: http://www.iec.ch
e-mail: info@iec.ch

INTERNATIONAL GROUND SOURCE HEAT PUMP ASSOCIATION (IGSHPA)

Oklahoma State University
490 Cordell South
Stillwater OK 74078-8018
PH: 800-626-4747
FAX: 405-744-5283
Internet: http://www.igshpa.okstate.edu/

INTERNATIONAL INSTITUTE OF AMMONIA REFRIGERATION (IIAR)
1110 N. Glebe Rd., Suite 250
Arlington, VA 22201
Ph: 703-312-4200
Fax: 703-312-0065
Internet: http://www.iiar.org
e-mail: iiar@iiar.org

INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION (IMSA)
P.O. Box 539
165 East Union St.
Newark, NY 14513-0539
Ph: 315-331-2182
Ph: 800-723-4672
Fax: 315-331-8205
Internet: http://www.imsasafety.org/

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
1, rue de Varembe'
Case Postale 56

CH-1211 Geneve 20 Switzerland
Ph: 41-22-749-0111
Fax: 41-22-733-3430
Internet: http://www.iso.ch
e-mail: central@iso.ch

INTERNATIONAL SLURRY SURFACING ASSOCIATION (ISSA)
3 Church Circle, PMB 250
Annapolis, MD 21401
Ph: 410-267-0023
Fax: 410-267-7546
Internet: http://www.slurry.org
e-mail: krissoff@slurry.org

INTERNATIONAL TELECOMMUNICATION UNION (ITU)
Order from:
U.S. Dept of Commerce
National Technical Information Service
5285 Port Royal Road.
Springfield, VA 22161
Ph: 703-605-6040
FAX: 703-605-6887
Internet: http://www.ntis.gov

For documents not avail from Dept of Commerce:
Sales Service
International Telecommunication Union
Place des Nations
CH-1211 Geneve 20
Switzerland
E-Mail: sales@itu.ch
Ph: 41.22.730.6141
Fax: 41.22.730.5194
Internet: http://www.itu.org

IPC - ASSOCIATION CONNECTING ELECTRONICS INDUSTRIES (IPC)
2215 Sanders Rd.
Northbrook, IL 60062-6135
Ph: 847-509-9700
Fax: 847-509-9798
Internet: http://www.ipc.org
e-mail: orderipc@ipc.org

IRON & STEEL SOCIETY (ISS)
186 Thorn Hill Road
Warrendale, PA 15086-7528
Ph: 724-776-1535 Ext 1
Fax: 724-776-0430
E-Mail: dennisf@iss.org
Internet: http://www.issource.org

ISA - THE INSTRUMENTATION, SYSTEMS AND AUTOMATION SOCIETY (ISA)
67 Alexander Drive
P.O. Box 12277
Research Triangle Park, NC 27709
Ph: 919-549-8411
Fax: 919-549-8288
e-mail: info@isa.org
Internet: http://www.isa.org

KITCHEN CABINET MANUFACTURERS ASSOCIATION (KCMA)
1899 Preston White Dr.
Reston, VA 20191-5435
Ph: 703-264-1690
Fax: 703-620-6530
Internet: http://www.kcma.org

L.H. BAILEY HORTORIUM (LHBH)

c/o Cornell University
Information and Referral Center
Day Hall Lobby
Ithaca, NY 14853-2801
PH: 607-254-INFO (4636)
Internet: http://www.plantbio.cornell.edu/Hortorium

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)
127 Park St., NE
Vienna, VA 22180-4602
Ph: 703-281-6613
Fax: 703-281-6671
Internet: http://www.mss-hq.com
e-mail: info@mss-hq.com

MAPLE FLOORING MANUFACTURERS ASSOCIATION (MFMA)
60 Revere Dr., Suite 500
Northbrook, IL 60062
Ph: 847-480-9138
Fax: 847-480-9282
Internet: http://www.maplefloor.org

MARBLE INSTITUTE OF AMERICA (MIA)
30 Eden Alley, Suite 301
Columbus, OH 43215
Ph: 614-228-6194
Fax: 614-461-1497
Internet: http://www.marble-institute.com
e-mail: info@marble-institute.com

MASTER PAINTERS INSTITUTE (MPI)
4090 Graveley Street
Burnaby, BC CANADA V5C 3T6
PH: 888-674-8937
Fx: 888-211-8708
Internet: http://www.paintinfo.com/mpi

METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA)
1300 Sumner Ave.
Cleveland, OH 44115-2851
Ph: 216-241-7333
Fax: 216-241-0105
Internet: http://www.mbma.com
e-mail: mbma@mbma.com

METAL LATH/STEEL FRAMING ASSOCIATION (ML/SFA)

NAAMM Headquarters

8 South Michigan Avenue, Suite 1000
Chicago, IL 60603
PH: 312-332-0405
FAX: 312-332-0706
Internet: http://www.naamm.org/mlsfa.htm
NOTE --- ML/SFA has merged with NAAMM.

MIDWEST INSULATION CONTRACTORS ASSOCIATION (MICA)
2017 So. 139th Cir.
Omaha, NE 68144
Ph: 402-342-3463
Fax: 402-330-9702
Internet: http://www.micainsulation.org
e-mail: info@micainsulation.org

MONORAIL MANUFACTURERS ASSOCIATION (MMA)

8720 Red Oak Blvd., Suite 201
Charlotte, NC 28217
PH: 704-676-1190
FAX: 704-676-1199
Internet: http://www.mhia.org/

NACE INTERNATIONAL (NACE)
1440 South Creek Drive
Houston, TX 77084-4906
Ph: 281-228-6200
Fax: 281-228-6300
Internet: http://www.nace.org

NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)
8 S. Michigan Ave, Suite 1000
Chicago, IL 60603
Ph: 312-322-0405
Fax: 312-332-0706
Internet: http://www.naamm.org
e-mail: naamm@gss.net

NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS (NBBPVI)
1055 Crupper Ave.
Columbus, OH 43229-1183
Ph: 614-888-8320
Fax: 614-847-1147
Internet: http://www.nationalboard.org
e-mail: tbecker@nationalboard.org

NATIONAL CABLE TELEVISION ASSOCIATION (NCTA)
Now: National Cable Telecommunications Association
1724 Massachusetts Ave. NW
Washington, DC 20036-1969
Ph: 202-775-3550
Fax: 202-775-1055
Internet: http://www.ncta.com

NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
13750 Sunrise Valley Drive
Herndon, VA 20171
Ph: 703-713-1900
Fax: 703-713-1910

Internet: http://www.ncma.org

NATIONAL COUNCIL ON RADIATION PROTECTION AND MEASUREMENTS (NCRP)
7910 Woodmont Ave., Suite 800
Bethesda, MD 20814-3095
Ph: 800-229-2652
Ph. 301-657-2652
Fax: 301-907-8768
Internet: http://www.ncrp.com

NATIONAL DRILLING ASSOCIATION (NDA)

10901D Roosevelt Boulevard North, Suite 100
St. Petersburg, FL 33716
Ph: 727-577-5006
FAX: 727-577-5012
Internet: http://www.nda4u.com/
E-mail: info@nda4u.com

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
1300 N. 17th St., Suite 1847
Rosslyn, VA 22209
Ph: 703-841-3200
Fax: 703-841-3300
Internet: http://www.nema.org/
E-mail: jas_peak@nema.org

NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)
8575 Grovemont Circle
Gaithersburg, MD 20877-4121
Ph: 301-977-3698
Fax: 301-977-9589
Internet: http://www.nebb.org

NATIONAL FENESTRATION RATING COUNCIL (NFRC)
1300 Spring Street, Suite 500
Silver Spring, MD 20910
Ph: 301-589-6372
Fax: 303-588-6342
Internet: http://www.nfrc.org
E-Mail: nfrcusa@aol.com or info@nfrc.com

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
1 Batterymarch Park
P.O. Box 9101
Quincy, MA 02269-9101
Ph: 617-770-3000
Fax: 617-770-0700
Internet: http://www.nfpa.org

NATIONAL FLUID POWER ASSOCIATION (NFLPA)
3333 N. Mayfair Rd.
Milwaukee, WI 53222-3219
Ph: 414-778-3344
Fax: 414-778-3361
Internet: http://www.nfpa.com
E-mail: nfpa@nfpa.com

NATIONAL HARDWOOD LUMBER ASSOCIATION (NHLA)

6830 Raleigh LaGrange Road
P.O. Box 34518
Memphis, TN 38184-0518
Ph: 901-377-1818
Fax: 901-382-6419
e-mail: info@natlhardwood.org
Internet: http://www.natlhardwood.org

NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET)
1420 King Street
Alexandria, VA 22314-2794
Ph: 888-476-4238
Internet: http://www.nicet.org

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)
Mail Stop C-13
4676 Columbia Parkway
Cincinnati, OH 45226-1998
Ph: 800-356-4674
Fx: 513-533-8573
Internet: http://www.cdc.gov/niosh/homepage.html
To order pubs for which a fee is charged, order from:
Superintendent of Documents
U.S. Government Printing Office
732 North Capitol Street, NW
Mailstop: SDE
Washington, DC 20401
Ph: 866-512-2800 or 202-512-1800
Fax: 202-512-2250
Internet: http://www.gpo.gov

NATIONAL INSTITUTE OF JUSTICE (NIJ)
National Law Enforcement and Corrections Technology Center
2277 Research Blvd. - Mailstop 1E
Rockville, MD 20850
Ph: 800-248-2742 or 301-519-5060
Fax: 301-519-5149
Internet: http://www.nlectc.org
e-mail: asknlectc@nlectc.org

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)
100 Bureau Drive
Stop 3460
Gaithersburg, MD 20899-3460
Ph: 301-975-NIST
Internet: http://www.nist.gov
Order Publications From:
Superintendent of Documents
U.S. Government Printing Office
732 North Capitol Street, NW
Mailstop: SDE
Washington, DC 20401
Ph: 866-512-1800 or 202-512-1800
Fax: 202-512-2250
Internet: http://www.gpo.gov
or
National Technical Information Services (NTIS)
5285 Port Royal Rd.

Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

NATIONAL LIME ASSOCIATION (NLA)

200 North Glebe Road, Suite 800
Arlington, VA 22203
PH: 703-243-5463
FAX: 703-243-5489
Internet: http://www.lime.org

NATIONAL OAK FLOORING MANUFACTURERS ASSOCIATION (NOFMA)
P.O. Box 3009
Memphis, TN 38173-0009
Ph: 901-526-5016
Fax: 901-526-7022
Internet: http://www.nofma.org

NATIONAL READY-MIXED CONCRETE ASSOCIATION (NRMCA)
900 Spring St.
Silver Spring, MD 20910
Ph: 301-587-1400
Fax: 301-585-4219
Internet: http://www.nrmca.org

NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
10255 W. higgins Rd., Suite 600
Rosemont, IL 60018
Ph: 847-299-9070
Fax: 847-299-1183
Internet: http://www.nrca.net

NATIONAL TERRAZZO & MOSAIC ASSOCIATION (NTMA)
110 East Market St., Suite 200 A
Leesburg, Virginia 20176
Ph: 703-779-1022 or 800-323-9736
Fax: 703-779-1026
Internet: http://www.ntma.com
e-mail: info@ntma.com

NATURAL RESOURCE, AGRICULTURAL AND ENGINEERING SERVICE (NRAES)

Cooperative Extension
152 Riley-Robb Hall
Ithaca, NY 14853-5701
Ph: 607-255-7654
Fax: 607-254-8770
Internet: http://www.nraes.org
E-mail: nraes@cornell.edu

NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION (NAIMA)
44 Canal Center Plaza, Suite 310
Alexandria, VA 22314
Ph: 703-684-0084
Fax: 703-684-0427
Internet: http://www.naima.org
e-mail: insulation@naima.org

NORTHEASTERN LUMBER MANUFACTURERS ASSOCIATION (NELMA)
272 Tuttle Road
P.O. Box 87A
Cumberland Center, ME 04021
Ph: 207-829-6901
Fax: 207-829-4293
Internet: http://www.nelma.org
e-mail: info@nelma.org

NSF INTERNATIONAL (NSF)
ATTN: Publications
789 North Dixboro Rd.
P.O. Box 130140
Ann Arbor, MI 48113-0140
Ph: 734-769-8010
Fax: 734-769-0109
Toll Free: 800-NSF-MARK
Internet: http://www.nsf.org

PIPE FABRICATION INSTITUTE (PFI)
655 32nd Avenue, Suite 201
Lachine, QC, Canada H8T 3G6
Ph: 514-634-3434
Fax: 514-634-9736
Internet: http://www.pfi-institute.org
e-mail: pfi@pfi-institute.org

PLASTIC PIPE AND FITTINGS ASSOCIATION (PPFA)
800 Roosevelt Rd., Bldg C, Suite 20
Glen Ellyn, IL 60137
Ph: 630-858-6540
Fax: 630-790-3095
Internet: http://www.ppfahome.org

PLASTICS PIPE INSTITUTE (PPI)
1825 Connecticut Ave. NW
Washington, D. C. 20009
Ph: 202-462-9607
Fax: 202-462-9779
Internet: http://www.plasticpipe.org

PLUMBING AND DRAINAGE INSTITUTE (PDI)
45 Bristol Dr.
South Easton, MA 02375
Ph: 508-230-3516 or 800-589-8956
Fax: 508-230-3529
Internet: http://www.pdionline.org
E-Mail: info@pdionline.org

PLUMBING AND MECHANICAL CONTRACTORS ASSOCIATION (PMCA)
9450 SW Commerce Circle, Suite 310
Wilsonville, OR 97070-9626
Ph: 503-682-7919
Fax: 503-682-6241
Internet: http://www.pmcaoregon.com/

PLUMBING-HEATING-COOLING CONTRACTORS NATIONAL ASSOCIATION (PHCC)
180 S. Washington Street

P.O. Box 6808
Falls Church, VA 22040
Ph: 800-533-7694
Fax: 703-237-7442
Internet: http://www.phccweb.org

PORCELAIN ENAMEL INSTITUTE (PEI)
5696 Peachtree Parkway, PO Box 920220
Norcross, GA 30092
Ph: 770-242-2632
Fax: 770-446-1452
Internet: http://www.porcelainenamel.com
e-mail: penamel@aol.com

POST-TENSIONING INSTITUTE (PTI)
1717 West Northern Avenue, Suite 114
Phoenix, AZ 85021
Ph: 602-870-7540
Fax: 602-870-7541
Internet: http://www.post-tensioning.org/

PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI)
209 West Jackson Blvd.
Chicago, IL 60606-6938
Ph: 312-786-0300
Fax: 312-786-0353
Internet: http://www.pci.org
e-mail: info@pci.org

REDWOOD INSPECTION SERVICE (RIS)

405 Efrente Drive, Suite 200
Novato, CA 94949
Ph: 415-382-0662
Fax: 415-382-8531
Internet: http://www.calredwood.org
E-Mail: cjjourdain@worldnet.att.net

RUBBER MANUFACTURERS ASSOCIATION (RMA)

1400 K St., NW, Suite 900
Washington, DC 20005
Ph: 202-682-4846
Fax: 202-682-4854
Internet: http://www.rma.org
Order Publications from:
The Mail Room
P. O. Box 3147
Medina, OH 44258
Ph: 800-325-5095 EXT 242 or 330-723-2978
Fax: 330-725-0576

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

1939 Harrison Street, Suite 400
Oakland, CA 94612
Ph: 510-832-1415
FAX: 510-832-0359
Internet: http://www.scs1.com

SCREEN MANUFACTURERS ASSOCIATION (SMA)
2850 South Ocean Boulevard, Suite 114
Palm Beach, FL 33480-5535
Ph: 561-533-0991
Fax: 561-533-7466
e-mail: fitzgeraldfscott@aol.com
Internet: http://www.smacentral.org

SEMICONDUCTOR EQUIPMENT AND MATERIALS INTERNATIONAL (SEMI)

3081 Zanker Road
San Jose, CA 95134
Phone: 1.408.943.6900
Fax: 1.408.428.9600
Internet: http://www.semi.org
E-mail: semihq@semi.org

SHEET METAL & AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
4201 Lafayette Center Dr.,
Chantilly, VA 20151-1209
Ph: 703-803-2980
Fax: 703-803-3732
Internet: http://www.smacna.org
e-mail: info@smacna.org

SPRI (SPRI)
200 Reservoir St., Suite 309A
Needham, MA 02494
Ph: 781-444-0242
Fax: 781-444-6111
Internet: http://www.spri.org
e-mail: spri@spri.org

SOCIETY OF AUTOMOTIVE ENGINEERS INTERNATIONAL (SAE)
400 Commonwealth Dr.
Warrendale, PA 15096-0001
Ph: 724-776-4841
Fax: 724-776-5760
Internet: http://www.sae.org
e-mail: custsvc@sae.org

SOCIETY OF MOTION PICTURE & TELEVISION ENGINEERS (SMPTE)

595 West Hartsdale Avenue
WhitePlains, New York 10607
PH: 914-761-1100
FAX: 914-761-3115
Internet: http://www.smpte.org

SPRAY POLYURETHANE FOAM ALLIANCE (SPFA)

American Plastics Council
1300 Wilson Boulevard, Suite 800
Arlington Virginia 22209
PH: 800-523-6154
FX: 703-252-0664

E-mail: feedback@sprayfoam.org
Internet: http://www.sprayfoam.org

SOLAR RATING AND CERTIFICATION CORPORATION (SRCC)

c/o FSEC, 1679 Clearlake Road
Cocoa, FL 32922-5703
PH: 321-638-1537
FAX: 321-638-1010
Internet: http://www.solar-rating.org

SOUTHERN CYPRESS MANUFACTURERS ASSOCIATION (SCMA)
400 Penn Center Boulevard, Suite 530
Pittsburgh, PA 15235
Ph: 412-829-0770
Fax: 412-829-0844
Internet: http://www.cypressinfo.org

SOUTHERN PINE INSPECTION BUREAU (SPIB)
4709 Scenic Highway
Pensacola, FL 32504-9094
Ph: 850-434-2611
Fax: 850-433-5594
e-mail: spib@spib.org
Internet: http://www.spib.org

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CDT)
Publication Distribution Unit
1900 Royal Oaks Dr.
Sacramento, CA 95815
Ph: 916-445-3520 or 916-227-7000 (CA Transportation Lab)
Fax: 916-324-8997
Internet: http://www.dot.ca.gov

STATE OF MARYLAND CODE OF MARYLAND REGULATIONS (COMAR)
1700 Margaret Avenue
Annapolis, MD 21401
phone: 410-974-2486
fax: 410-974-2546
Internet:
http://www.sos.state.md.us/sos/dsd/comar/html/comar.html

STATE OF NORTH CAROLINA ADMINISTRATIVE CODE

Internet: http://ncrules.state/nc.us

STATE OF VIRGINIA ADMINISTRATIVE CODE (VAC)
Virginia Code Commission
General Assembly Building, 2nd Floor
910 Capitol Street
Richmond, Virginia 23219
Phone: 804-786-3591
Fax: 804-692-0625
Internet:
http://legis.state.va.us/statutesandregulations/admincode.htm

STATE OF CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

Plant Health and Pest Prevention Services

Pest Exclusion Branch/Nursery, Seed and Cotton Program
1220 N Street, Room A-372
Sacramento CA 95814
PH: 916-653-0435
Internet: http://www.cdfa.ca.gov/phpps/nipm.htm

STEEL DECK INSTITUTE (SDI)
P.O. Box 25
Fox River Grove, IL 60021-0025
Ph: 847-462-1930
Fax: 847-462-1940
Internet: http://www.sdi.org
e-mail: Steve@sdi.org

STEEL DOOR INSTITUTE (SDOI)
30200 Detroit Rd.
Cleveland, OH 44145-1967
Ph: 440-899-0010
Fax: 440-892-1404
Internet: http://www.steeldoor.org

STEEL JOIST INSTITUTE (SJI)
3127 Tenth Ave., North Ext.
Myrtle Beach, SC 29577-6760
Ph: 843-626-1995
Fax: 843-626-5565
Internet: http://www.steeljoist.org

STEEL TANK INSTITUTE (STI)
570 Oakwood Rd.
Lake Zurich, IL 60047
Ph: 847-438-8265
Fax: 847-438-8766
Internet: http://www.steeltank.com

STEEL WINDOW INSTITUTE (SWI)
1300 Sumner Ave.
Cleveland, OH 44115-2851
Ph: 216-241-7333
Fax: 216-241-0105
Internet: http://www.steelwindows.com

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY (TAPPI)

P.O. Box 105113
Atlanta, GA 30348-5113
PH: 800-322-8686
FAX: 770-446-6947
Internet: http://www.tappi.org

ASSOCIATION OF THE WALL AND CEILING INDUSTRIES - INTERNATIONAL (AWCI)

803 West Broad Street
Falls Church, VA 22046
PH: 703-534-8300
FAX: 703-534-8307
Internet: http://www.awci.org

INSULATING GLASS MANUFACTURERS ALLIANCE (IGMA)

27 ave Goulburn Avenue
Ottawa, Ontario. CANADA
K1N 8C7
Phone: 613-233-1510
Fax: 613-233-1929
e-mail: info@igmaonline.org
Internet: http://www.igmaonline.org

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)
40 24th Street, 6th Floor
Pittsburgh, PA 15222-4656
Ph: 412-281-2331
Fax: 412-281-9992
Internet: http://www.sspc.org

TILE COUNCIL OF AMERICA (TCA)
100 Clemson Research Blvd
Anderson, SC 29625
Ph: 864-646-8453
FAX: 864-646-2821
Internet: http://www.tileusa.com
e-mail: literature@tileusa.com

TRUSS PLATE INSTITUTE (TPI)
583 D'Onofrio Dr., Suite 200
Madison, WI 53719
Ph: 608-833-5900
Fax: 608-833-4360
Internet: http://www.tpinst.org

TUBULAR EXCHANGER MANUFACTURERS ASSOCIATION (TEMA)
25 N. Broadway
Tarrytown, NY 10591
Ph: 914-332-0040
Fax: 914-332-1541
Internet: http://www.tema.org

TURFGRASS PRODUCERS INTERNATIONAL (TPI)
1855-A Hicks Road
Rolling Meadows, IL 60008
PH: 800-405-8873
FAX: 847-705-8347
Internet: http://www.turfgrasssod.org

UNDERWRITERS LABORATORIES (UL)
333 Pfingsten Rd.
Northbrook, IL 60062-2096
Ph: 847-272-8800
Fax: 847-272-8129
Internet: http://www.ul.com/
e-mail: northbrook@us.ul.com

UNI-BELL PVC PIPE ASSOCIATION (UBPPA)
2655 Villa Creek Dr., Suite 155
Dallas, TX 75234
Ph: 214-243-3902
Fax: 214-243-3907

Internet: http://www.uni-bell.org
e-mail: info@uni-bell.org

UNIVERSITY OF CALIFORNIA DIVISION OF AGRICULTURE AND NATURAL RESOURCES (UCDANR)
FRANKLIN BUILDING
1111 Franklin St., 6th floor
Oakland, CA 94607-5200
Internet: http://http://www.ucanr.org

U.S. AIR FORCE (USAF)
Air Force Publishing Distribution Center
Ph: 410-687-3330
E-mail: afpdc-service@pentagon.af.mil
Internet: http://www.e-publishing.af.mil/

U.S. ARMY (DA)

U.S. Army Publications Agency
Internet: http://www.usapa.army.mil/
AOK: 4/02
LOK: 7/02

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
3909 Halls Ferry Rd.
Vicksburg, MS 39180-6199
Ph: 601-634-2664
Fax: 601-634-2388
Internet: http://www.wes.army.mil/SL/MTC/handbook/handbook.htm

Order Other Documents from:
USACE Publications Depot
Attn: CEIM-SP-D
2803 52nd Avenue
Hyattsville, MD 20781-1102
Ph: 301-394-0081
Fax: 301-394-0084
Internet: http://www.usace.army.mil/publications
or http://www.hnd.usace.army.mil/techinfo/index.htm

U. S. ARMY EDGEWOOD RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER (EA)

Aberdeen Proving Ground, MD
Internet: Unknown

U.S. ARMY ENVIRONMENTAL CENTER (AEC)

5179 Hoadley Road
Aberdeen Proving Ground, MD 21010-5401
Internet: http://aec.army.mil
Order from:
National Technical Information Services (NTIS)
5285 Port Royal Rd.

Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY (USAEHA)

Now: U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM)
5158 Blackhawk Road
Aberdeen Proving Ground
MD 21010-5403
PH: 800-222-9698; website
Internet: http://chppm-www.apgea.army.mil

U.S. BUREAU OF RECLAMATION (BOR)

Denver Federal Center
P.O. Box 25007
Denver, CO 80225
Ph: 303-445-2080
Internet: http://www.usbr.gov
Order from:
National Technical Information
Services (NTIS)
5285 Port Royal Rd.
Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

U.S. DEFENSE COMMUNICATIONS AGENCY (DCA)

Now: Information Systems Agency (DISA)
Washington, D.C. 20305-2000
Telephone:
FAX:
Internet: Not found

U.S. DEFENSE INTELLIGENCE AGENCY (DIA)

Defense Intelligence Analysis Center (DIAC)
MacDill Boulevard and Luke Avenue
Bolling AFB, MD
Internet: http://www.dia.mil

U.S. DEFENSE LOGISTICS AGENCY (DLA)

Andrew T. McNamara Building
8725 John J. Kingman Road
Fort Belvoir, VA 22060
Internet: http://www.dla.mil

U.S. DEPARTMENT OF AGRICULTURE (USDA)

Order AMS Publications from:
AGRICULTURAL MARKETING SERVICE (AMS)
Seed Regulatory and Testing Branch

USDA, AMS, LS Div.
Room 209, Bldg. 306, BARC-East
Beltsville, MD 20705-2325
Ph: 301-504-9430
Fax: 301-504-8098
Internet: http://www.ams.usda.gov/lsg/seed.htm
e-mail: jeri.irwin@usda.gov

Order Other Publications from:
U.S. Department of Agriculture
14th and Independence Ave., SW, Room 4028-S
Washington, DC 20250
Ph: 202-720-2791
Fax: 202-720-2166
Internet: http://www.usda.gov

U.S. DEPARTMENT OF COMMERCE (DOC)

1401 Constitution Avenue, NW
Washington, DC 20230
Internet: http://www.commerce.gov/

Order Publications From:
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

U.S. DEPARTMENT OF DEFENSE (DOD)

Order DOD Documents from:
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Ph: 703-605-6000
FAX: 703-605-6900
Internet: http://www.ntis.gov

Order Military Specifications, Standards and Related Publications from:
Department of Defense Single Stock Point for (DODSSP)
Defense Automation and Production Service (DAPS)
Bldg 4D
700 Robbins AV
Philadelphia, PA 19111-5094
Ph: 215-697-2179
Fax: 215-697-1462
Internet: http://www.dodssp.daps.mil

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)
Order from:
HUD User
P.O. Box 6091
Rockville, MD 20849
Ph: 800-245-2691
Fax: 301-519-5767
Internet: http://www.huduser.org

e-mail: Huduser@aspensys.com

U.S. DEPARTMENT OF STATE (SD)

2201 C Street, NW
Washington, DC 20520
Ph: 202-647-4000
Internet: http://www.state.gov

U.S. DEPARTMENT OF TRANSPORTATION (DOT)
400 7th Street, SW
Washington, DC 20590
PH: 202-366-4000
Internet: http://www.dot.gov

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Ph: 202-260-2090
FAX: 202-260-6257
Internet: http://www.epa.gov

NOTE --- Some documents are available only from:
National Technical Information Services (NTIS)
5285 Port Royal Rd.
Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

U.S. FEDERAL AVIATION ADMINISTRATION (FAA)
Order for sale documents from:
Superintendant of Documents
P.O. Box 371954
Pittsburgh, PA 15250-7954
PH: 202-512-1800 (order desk)
Internet: http://www.gpo.gov

Order free documents from:
Federal Aviation Administration
Dept. of Transportation
Ardmore East Business Center
33410 75th Avenue
Landover, MD 20785
Ph:
FAX: 301-386-5394

Internet: http://www.faa.gov

U.S. FEDERAL COMMUNICATIONS COMMISSION (FCC)
445 12th Street SW
Washington, DC 20554
Phone: 888-CALL-FCC
Fax: 202-418-0232
Internet: http://www.fcc.gov
E-mail: fccinfo@fcc.gov

U.S. FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)
500 C Street, SW
Washington, D.C. 20472
Phone: 202-566-1600
Internet: http://www.fema.gov

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)
Office of Highway Safety (HHS-31)
400 Seventh St., SW
Washington, DC 20590-0001
Ph: 202-366-0411
Fax: 202-366-2249
Internet: http://www.fhwa.dot.gov
Order from:

Superintendant of Documents
U. S. Government Printing Office
732 North Capitol Street, NW
Mailstop: SDE
Washington, DC 20401
Ph: 866-512-1800 or 202-512-1800
Fax: 202-512-2250
Internet: http://www.gpo.gov

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

General Services Administration
1800 F Street, NW
Washington, DC 20405
PH: 202-501-0705

Order from:
General Services Administration
Federal Supply Service Bureau
1941 Jefferson Davis Highway
Arlington, VA 22202
PH: 703-605-5400
Internet: http://www.fss.gsa.gov/pub/fed-specs.cfm

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
700 Pennsylvania Avenue, N.W.
Washington, D.C. 20408
Phone: 866-325-7208
Internet: http://www.archives.gov

Order documents from:
Superintendent of Documents
U.S.Government Printing Office
732 North Capitol Street, NW
Washington, DC 20401
Mailstop: SDE
Ph: 866-512-1800 or 202-512-1800
Fax: 202-512-2250
Internet: http://www.gpo.gov
E-mail: gpoaccess@gpo.gov

U.S. NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)
1510 Gilbert St.
Norfolk, VA 23511-2699

Ph: 757-322-4200
Fax: 757-322-4416
Internet: http://www.efdlant.navfac.navy.mil/LANTOPS_15

U.S. NAVAL FACILITIES ENGINEERING SERVICE CENTER (NFESC)
1100 23rd Avenue
Port Hueneme, CA 93043-4370
Ph: 805-982-4980
Internet: http://www.nfesc.navy.mil

WATER ENVIRONMENT FEDERATION (WEF)
601 Wythe St.
Alexandria, VA 22314-1994
Ph: 703-684-2452
Fax: 703-684-2492
Internet: http://www.wef.org

WATER QUALITY ASSOCIATION (WQA)
4151 Naperville Rd.
Lisle, IL 60532
Ph: 630-505-0160
Fax: 630-505-9637
Internet: http://www.wqa.org
e-mail: info@mail.wqa.org

WEST COAST LUMBER INSPECTION BUREAU (WCLIB)
P.O. Box 23145
Portland, OR 97281
Ph: 503-639-0651
Fax: 503-684-8928
Internet: http://www.wclib.org
e-mail: info@wclib.org

WESTERN WOOD PRESERVERS INSTITUTE (WWPI)
7017 N.E. Highway 99 # 108
Vancover, WA 98665
Ph: 360-693-9958
Fax: 360-693-9967
Internet: http://www.wwpinstitute.org
e-mail: info@wwpinstitute.org

WESTERN WOOD PRODUCTS ASSOCIATION (WWPA)
Yeon Bldg.
522 SW 5th Ave.
Suite 500
Portland, OR 97204-2122
Ph: 503-224-3930
Fax: 503-224-3934
Internet: http://www.wwpa.org
e-mail: info@wwpa.org

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)
1400 East Touhy Ave., Suite 470
Des Plaines, IL 60018
Ph: 847-299-5200 or 800-223-2301
Fax: 708-299-1286
Internet: http://www.wdma.com
e-mail: admin@wdma.com

WOOD MOULDING AND MILLWORK PRODUCERS ASSOCIATION (WMMPA)
507 First Street
Woodland, CA 95695
Ph: 530-661-9591 or 800-550-7889
Fax: 530-661-9586
Internet: http://www.wmmpa.com

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01451A

CONTRACTOR QUALITY CONTROL

05/02

PART 1 GENERAL

1.1 REFERENCES
1.2 PAYMENT

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS
3.2 QUALITY CONTROL PLAN
3.2.1 General
3.2.2 Content of the CQC Plan
3.2.3 Omitted
3.2.4 Acceptance of Plan
3.2.5 Notification of Changes
3.3 COORDINATION MEETING
3.4 QUALITY CONTROL ORGANIZATION
3.4.1 Personnel Requirements
3.4.2 CQC System Manager
3.4.3 CQC Personnel
3.4.4 Independent Quality Control Testing Laboratory
3.4.5 Organizational Changes
3.5 SUBMITTALS AND DELIVERABLES
3.6 CONTROL
3.6.1 Preparatory Phase
3.6.2 Initial Phase
3.6.3 Follow-up Phase
3.6.4 Additional Preparatory and Initial Phases
3.7 TESTS
3.7.1 Testing Procedure
3.7.2 Testing Laboratories
3.7.2.1 Capability Check
3.7.2.2 Capability Recheck
3.7.3 Onsite Laboratory
3.7.4 Furnishing or Transportation of Samples for Testing
3.8 COMPLETION INSPECTION
3.8.1 Punch-Out Inspection
3.8.2 Pre-Final Inspection
3.8.3 Final Acceptance Inspection
3.9 DOCUMENTATION
3.10 SAMPLE FORMS
3.11 NOTIFICATION OF NONCOMPLIANCE

-- End of Section Table of Contents --

UFGS-01451A (May 2002)

SECTION 01451A

CONTRACTOR QUALITY CONTROL
05/02

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 in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740	(2001) 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	(2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

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 construction operations, both onsite and off site, and shall be keyed to the proposed 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

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 15 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. 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. The CQC plan shall be organized into separate sections for each major component of the work. 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.

3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and off site, including work by subcontractors, 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, off site fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test defined in the technical sections of the specifications 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 must be approved by the Contracting Officer prior to performing quality control testing.)

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

including documentation.

g. Procedures for tracking 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.

3.2.3 Omitted

3.2.4 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of any construction. Acceptance is conditional and will be predicated on satisfactory performance during the 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.

3.2.5 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 Preconstruction Conference, before start of 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, control activities, testing, administration of the system for both onsite and off site 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 and independent Quality Control Testing Laboratory, and sufficient number of additional qualified personnel to ensure safety and contract compliance. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly shall 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, show 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 or a graduate of construction management, with a minimum of 5 years' construction experience on construction comparable to this contract, or with a minimum of 10 years' experience on construction similar to this contract. This 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 as System Manager but may have duties as project superintendent in addition to quality control. 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 in the implementation of the CQC plan as required by the specification requirements.

3.4.4 Independent Quality Control Testing Laboratory

The requirements for the independent Quality Control Testing Laboratory are specified in the technical sections covering the particular work for which the testing is required.

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 shall be made as specified in Section 01330 SUBMITTAL PROCEDURES and as required by other sections of the specifications. 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 48 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, Contracting Officer or Authorized Representative 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.

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 materials testing laboratory which has received an onsite inspection (not just a desk audit) and been validated by the Engineer Research and Development Center Materials Testing Center (MTC) under the Corps of Engineers laboratory inspection program. The laboratory shall be listed on the list of Corps of Engineers validated laboratories. 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. An information copy of tests performed by an off site 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 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 following address:

US Army Engineer District, Savannah
Environmental & Materials Unit
200 North Cobb Parkway
Building 400, Suite 404
Marietta, GA 30062

Coordination for each specific test will be made through the Resident Engineers' 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 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 work, or increment of the work, 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 work is complete. 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 Government can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner at no additional cost to the Government. 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 project 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 the Lake Hartwell Project Office 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 and shall be on an acceptable form that 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. Off site 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.

3.10 SAMPLE FORMS

Sample forms are included in Attachment 1 to Section 00800.

3.11 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.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

02/97

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS
1.1.1 Site Utilization Plan
1.1.2 Identification of Employees
1.1.3 Employee Parking
1.2 SUBMITTALS
1.3 AVAILABILITY AND USE OF UTILITY SERVICES
1.3.1 Electrical Services
1.3.2 Water
1.3.3 Telephone
1.3.4 Sanitation
1.4 BULLETIN BOARD AND PROJECT SIGNS
1.4.1 Bulletin Board
1.4.2 Project Signs
1.5 PROTECTION AND MAINTENANCE OF TRAFFIC
1.5.1 Haul Routes
1.5.2 Barricades
1.6 PHOTOGRAPHIC RECORD OF CONDITION OF PAVEMENT, UPPER DAM
1.7 CONTRACTOR'S TEMPORARY FACILITIES
1.7.1 Administrative Field Offices
1.7.2 Storage Areas
1.7.3 Appearance of Trailers
1.7.4 Security Provisions
1.8 TEMPORARY PROJECT SAFETY FENCING
1.9 SAFETY SURVEILLANCE
1.10 TESTING LABORATORIES
1.10.1 Approved Testing Laboratories
1.10.2 Other Laboratory Services
1.11 CONTRACTOR'S FIELD LABORATORY
1.12 GOVERNMENT FIELD OFFICE TRAILER AND OFFICE EQUIPMENT
1.13 CONSTRUCTION SCHEDULE RESTRAINTS
1.14 COOPERATION WITH OTHERS
1.15 INSPECTION OF SITE
1.16 ONSITE PRE-BID CONFERENCE
1.17 TEMPORARY WATER WITHDRAWAL PERMIT
1.18 DUST ABATEMENT
1.19 PARTNERING
1.20 CLEANUP
1.21 RESTORATION OF STORAGE AREA
1.22 BURNING
1.23 NOTIFICATION OF EXCAVATION
1.24 MANAGEMENT AND COORDINATION MEETINGS

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section Table of Contents --

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES
02/97

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Site Utilization Plan

Within 15 days following Notice to Proceed, the Contractor shall submit to the Contracting Officer, for review and approval, a Site Utilization Plan for the Lower Dam. A Site Utilization Plan for the Upper Dam shall be submitted at least 30 calendar days prior to commencing any work at the Upper Dam. The plan shall include, but not necessarily be limited to, locations of office, equipment plant, and materials storage areas, (Contractor-furnished trailer for Government field office shall be located immediately adjacent to Contractor's field office); Contractors field laboratory facility; locations and design of haul roads; proposed employee parking areas; toilets; proposed haul routes on public highways and roads; stockpile areas for topsoil and excavated material; areas for processing earth materials; routes of temporary utility lines; alterations proposed to fencing and gates at access entrances; and any other information required to accurately portray the Contractor's intended utilization of the designated available areas. The Contractor shall furnish two prints of each drawing. One set of prints with the Contracting Officer's comments will be returned to the Contractor. Review and approval of the Site Utilization Plans will not relieve the Contractor for the full adequacy of the plans. The Contracting Officer shall be advised, by submittal of revised drawings or other means, of any changes in the plant or facilities layout made during the design and erection stages or after work is in progress.

1.1.2 Identification of Employees

The Contractor shall be responsible for furnishing to each employee, and for requiring each employee engaged on the work to display, identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

1.1.3 Employee Parking

Contractor employees shall park privately owned vehicles in an area prepared by the Contractor and approved by the Contracting Officer.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G"

designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Site Utilization Plan; G, RE

Submit Site Utilization Plan for Lower Dam within 15 days following Notice to Proceed. Submit Site Utilization Plan for Upper Dam at least 30 calendar days prior to commencing any work at the dam.

Safety Surveillance Plan; G, RE

Submit Safety Surveillance Plan at least 40 calendar days prior to the start of any excavation for construction of soil-cement mixing.

Temporary Water Withdrawal Permit; G, RE

If Contractor intends to withdraw water from Lake Hartwell for construction purposes, submit request for Temporary Water Withdrawal Permit at least 40 calendar days prior to start of proposed water usage.

1.3 AVAILABILITY AND USE OF UTILITY SERVICES

1.3.1 Electrical Services

*4

a. No electrical services will be provided by the Government. The Contractor shall be responsible for making arrangements and payments for electrical services. In addition, the Contractor shall provide, at no cost to the Government, electrical services to the Government field office for the duration of the contract. All temporary connections for electricity shall be subject to the approval of the Contracting Officer. All temporary lines will be furnished, installed, connected and maintained by the Contractor in a workmanlike manner satisfactory to the Contracting Officer, and shall be removed by the Contractor in like manner at his expense prior to final acceptance of the construction.

b. The Contractor shall obtain his electrical services from Clemson University (CU). The university owns and operates the electrical distribution system that serves the areas surrounding and adjacent to the Upper and Lower Diversion Dams. At the Lower Dam, there is a single-phase 7200 volt primary line serving the Rowing Center. If single-phase is suitable for the Contractor's needs, CU will install a transformer and/or other features as required by the Contractor. If the Contractor requires 3-phase service, CU can and will upgrade the line to 3-phase; however, the costs would be rather significant. The Contractor shall designate the location(s) of the service point to CU.

c. At the Upper Dam, CU has a 3-phase, 12,470 volt line located at the right abutment near the raw water intake and relay station. CU will install transformer and primary extension at the service point requested.

d. All extensions, modifications, or other capital expenditures required to serve loads on the CU system shall be the responsibility of the Contractor. CU's current rate is $0.0414/KWH for all power supplied (updated yearly). For information and costs regarding specific

requirements, bidders should contact the following:

Jeffery T. Hinson, PE
Director, Utility Services
Klugh Avenue, Box 345801
University Facilities
Clemson University
Clemson, SC 29634

Phone: (864) 656-7300
FAX: (864) 656-0793
Mobile: (864) 303-1312

1.3.2 Water
*4

a. The responsibility shall be upon the Contractor to provide and maintain at his own expense an adequate supply of water for his use for construction and domestic consumption, and to install and maintain necessary supply connections and piping for same, but only at such locations and in such manner as may be approved by the Contracting Officer. Before final acceptance, temporary connections and piping installed by the Contractor shall be removed in a manner satisfactory to the Contracting Officer. In addition, the Contractor shall provide, at no cost to the Government, potable water to the Government field office for the duration of the contract. The method of water service to the Government office shall be the same as that to the Contractor's office.

b. CU has water lines at both the Lower and Upper Diversion Dams. CU will provide tap and meter under the same arrangement as described above for electrical service. Current rate for water is $1.40 per 1,000 gallons (updated yearly).

c. All extensions, modifications, or other capital expenditures required to serve loads on the CU system shall be the responsibility of the Contractor. For information on locations of lines and costs of utilizing the CU water system, bidders should contact the individual listed above in paragraph 1.3.1.

1.3.3 Telephone

The Contractor shall make arrangements and pay all costs for telephone facilities desired. The Government will make arrangements and pay for its telephone facilities.

1.3.4 Sanitation

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel. In addition, the Contractor shall provide, at no cost to the Government, separate sanitation facilities to the Government field office for the duration of the contract. The method of sanitation service to the Government office shall be the same as that to the Contractor's office. Field-type sanitary facilities shall be self-contained units with both urinals and stool capabilities. The units shall be sufficiently ventilated to control odors and fumes and shall be emptied and cleaned at least weekly, or more often if directed by the Contracting Officer. The doors shall be self-closing.

1.4 BULLETIN BOARD AND PROJECT SIGNS

1.4.1 Bulletin Board

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work the bulletin board shall be removed by and remain the property of the Contractor.

1.4.2 Project Signs

The Contractor shall furnish and install a project sign at each dam at the location selected by the Contracting Officer. The project sign shall be painted on 1/2 inch thick exterior grade plywood. The sign layout shall be in accordance with the graphic format shown in Attachment 1 to Section 00800. The 4-foot by 4-foot right-hand section shall be painted white (Color No. 37875, Fed. Std. 595a) with black (Color No. 37038, Fed. Std. 595a) lettering. The 2-foot by 4-foot left-hand section shall be painted red (Color No. 12199, Fed. Std. 595a) with white lettering.

1.5 PROTECTION AND MAINTENANCE OF TRAFFIC

The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic; including the provision of watchmen and flagmen, especially during ingress and egress of heavy construction vehicles, erection of barricades; placing of lights around and in front of equipment; and the erection and maintenance of adequate warning, danger, and direction signs shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

1.5.1 Haul Routes

The Contractor will be required to use the haul routes shown on the plans unless otherwise permitted in writing by the Contracting Officer. Where the existing network of Federal, State, and county roads is used as access to and from the construction site, the Contractor must observe and comply with all applicable Federal, State, and local laws, ordinances, regulations, etc. The Contractor shall make his own investigation of the condition of designated access routes including clearances, restrictions, bridge-load limits, bond requirements, and other limitations that affect or may affect transportation and ingress and egress at the project sites. Where haul routes are not designated on the plans, the Contractor must obtain approval of the Contracting Officer of the routes he intends to use. The Contractor shall not allow spilled materials to remain on pavements. Spillage sufficient to create a traffic hazard shall be removed immediately. Other light spillage shall be removed daily. After all

hauling is completed, the Contractor shall, unless otherwise directed in writing by the Contracting Officer, restore the earth areas used for haul routes to original condition by final grading, shaping, compacting and grassing, and shall clean and sweep all paved areas as required. Any pavement damaged as a result of hauling operations under this contract shall be promptly repaired by the Contractor, as approved by the Contracting Officer. The cost of maintenance and repair of the haul routes as mentioned above shall be considered as a subsidiary obligation of the Contractor for which no separate payment will be made except for any items specifically designated for payment under Section SITE WORK

1.5.2 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.6 PHOTOGRAPHIC RECORD OF CONDITION OF PAVEMENT, UPPER DAM

Prior to the start of any work at the Upper Dam, the Contractor shall make a "dated" photographic record (photographs and/or videos) of the access road into the dam and adjacent parking areas and the intersection of South Carolina Highway 93 and Perimeter Road noting the condition of the pavement, particularly with regard to cracks and distressed areas.

1.7 CONTRACTOR'S TEMPORARY FACILITIES

1.7.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction areas at the approved sites. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.7.2 Storage Areas

Trailers, materials, or equipment shall not be placed or stored outside the Government fenced areas. All Contractor equipment shall be parked within the fenced areas at all times.

1.7.3 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on Government property.

1.7.4 Security Provisions
*4
The Contractor shall be responsible for the security of his own equipment and facilities. The entire project area at the Lower Dam is fenced except along the lake shore. The Upper Dam is not fenced along Highway SC 93 and the lake shore. Should the Contractor choose to locate an administrative field office at the Upper Dam, he ~~might consider~~shall install~~ing~~ chain link

fencing around his facilities; the ~~. Should he install~~ fencing~~, it~~ shall also include the Government field office. Adequate outside security lighting shall be provided at the Contractor's temporary administrative field office and the Government's temporary field office. Should the Contractor leave his field office and facilities at the Lower Dam while performing the work at the Upper Dam, he shall erect security chain link fencing around his facilities and the Government field office trailer.

1.8 TEMPORARY PROJECT SAFETY FENCING
*4

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work areas as directed by the Contracting Officer. The safety fencing shall be 4-foot high, orange, rectangular configuration, high density UV stabilized polyethylene. At the Lower Dam, the safety fencing shall be installed along the construction limits shown on the drawings from the right abutment (south end) to the end of the paved road that runs along the toe of the dam. At the Upper Dam, safety fencing shall be installed along the construction limits shown on the drawings which are adjacent to the Highway SC 93 ROW. The fencing shall connect with the existing chain-link fence at the access gate. The safety fencing shall be maintained by the Contractor during the life of the contract (unless its removal is authorized in writing by the Contracting Officer) and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.9 SAFETY SURVEILLANCE

a. During inactive or otherwise unattended periods of excavation and backfilling, from the time a segment of excavation is begun until it is backfilled to original ground as specified, the Contractor shall provide for constant surveillance by a person(s) familiar with the plant, equipment and operations involved with the construction and familiar with earth embankment dams and their inspection to ensure safety. This person(s) shall monitor items such as water levels, proper functioning of dewatering systems, and condition of excavated surfaces and embankment slopes. Such monitoring shall be sufficient to detect any changes in the embankment slopes, and excavations such as bulging, cracking, sloughing, slumping, excessive seepage, "boils," etc. This person(s) shall, in accordance with the Contractor's submitted and approved plan, be capable of initiating on an unassisted basis any emergency actions necessary in the event that critical conditions are observed. Should the Contractor's representative detect any such changes that might affect the stability of the dam embankment, whether considered to be of an emergency nature or not, he shall immediately notify the following:

COE Resident Engineer
or
COE Construction Engineer
or
COE Construction Inspector

b. Prior to beginning any excavation for construction of the soil-cement mixing at a dam, the Contractor shall stockpile at approved locations the following materials, which if not required for an emergency condition meet the requirements for drain materials specified in Section 02250 DRAINS if kept uncontaminated:

(1) 30 tons ASTM C 33 sand.

(2) 30 tons No. 78 stone

c. The Contractor shall prepare and submit for review and comment a plan for providing the safety surveillance services specified above at least 40 calendar days prior to the start of any excavation for construction of soil-cement mixing. Such plan shall include the qualifications of the personnel to be performing the surveillance, the Contractor's planned reaction to any potential emergency conditions and the materials, equipment, and operators to be used.

1.10 TESTING LABORATORIES

Testing is required to be performed by the Contractor as part of his Quality Control Program to verify contract compliance. This Quality Control Testing is to be conducted by a project or commercial laboratory which has received an onsite inspection (not just a desk audit) and been validated by the Engineer Research and Development Center Materials Testing Center (MTC) under the Corps of Engineers laboratory inspection program. The laboratory shall be listed on the list of Corps of Engineers validated laboratories.

1.10.1 Approved Testing Laboratories

A composite listing of approved testing laboratories within the Savannah District is available upon request. The Contractor should engage the services of a laboratory contained in the composite list. Contractors may obtain the list by calling (678) 354-0310. Fax requests can be made to (678) 354-0330.

1.10.2 Other Laboratory Services

The Contractor may engage the services of a laboratory other than those on the listing of approved testing laboratories if they comply with the following:

a. The Contractor identifies and proposes the unapproved laboratory a minimum of 90 days prior to the start of testing. This time is necessary to allow for scheduling an inspection by a Corps of Engineers District laboratory inspection team. The time required for Government inspection will not be the basis for an increase in the contract performance period.

b. All costs of Government inspection shall be the responsibility of the Contractor.

c. The Contractor may request Government inspection and approval prior to award by forwarding a written request to:

US Army Engineer District, Savannah
Environmental and Materials Unit
200 North Cobb Parkway
Building 400, Suite 404
Marietta, GA 30062

1.11 CONTRACTOR'S FIELD LABORATORY

*4

a. The Contractor shall provide at the project site a temporary facility in which he shall house equipment necessary to prepare and store grout

samples, wet-grab samples, and core samples. The Contractor may, at his option, install the equipment necessary to perform the unconfined compression testing of the above samples~~and use the testing equipment necessary to perform all the tests required for the soil-cement mixing construction~~. The facility shall include appropriate moist room or moist cabinet. The temperature of the laboratory shall be maintained between 65 degrees and 85 degrees F and the laboratory shall have electricity and water. The laboratory will be inspected by a Corps of Engineers laboratory inspection team and shall receive its approval prior to start of any testing. The laboratory shall be established and operational and ready for inspection at least 45 calendar days prior to any soil-cement construction.

b. All costs for construction, operation, maintenance and removal of the field laboratory shall be considered incidental to and included in the contract unit prices bid for the soil-cement mixing.

1.12 GOVERNMENT FIELD OFFICE TRAILER AND OFFICE EQUIPMENT

a. The Contractor shall provide one field office trailer, 14 feet by 60 feet minimum for the Government's use during the construction period. The office trailer may be used, but serviceable and subject to the approval of the Contracting Officer. The trailer shall have a 14-foot by 15-foot office at each end with a 14-foot by 30-foot conference area in between. The trailer shall be located adjacent to the Contractor's field office; parking for four vehicles shall be provided adjacent to or in close proximity to the trailers. All setup work shall be in accordance with the trailer manufacturer's setup instructions, and all applicable Federal, State and local codes and regulations, including NFPA 501A. The trailer shall be available for occupancy and use not more than 30 calendar days following Notice to Proceed. The trailer shall be furnished or provided with the following:

(1) Access steps with handrails and platform at exterior doors. Handrails shall be constructed with 2-inch by 4-inch safety edge lumber and well sanded to eliminate splinters. Platform shall be a minimum of 4 feet by 4 feet. All wood members shall be pressure treated.

(2) Adequately blocked and tied down so that it is capable of resisting a design wind speed of 95 mph.

(3) Fully skirted.

(4) Self-contained heating and air conditioning (HVAC) shall be capable of maintaining temperature between 68 degrees F and 80 degrees F.

(5) Trailer shall be provided with a minimum of one weatherproof porch light, with switches.

(6) The trailer shall have two metal entrance doors with dead bolt hardware. Door hinge pins shall be nonremovable. Locks shall be keyed alike. All windows shall be movable type and shall be provided with blinds (curtains will not be acceptable), storm sash, and security locks. Glass panels in windows shall be protected by bars or heavy mesh screens to prevent access through these panels.

(7) Utilities including potable water, sanitary facilities and electricity. The methods of water service and sanitary sewerage service shall be the same as that to the Contractor's field office.

(8) Lighting at each desk shall be 300 to 500 lux.

(9) Office furnishings to be provided may be used but shall be in good condition and expected to fully perform the intended use for the duration of the contract. The Contracting Officer shall have the right to reject any Contractor-furnished equipment at any time during the period of the contract. All office facilities and equipment furnished by the Contractor shall be maintained and serviced by the Contractor for the period of the contract.

(a) Four, 30- by 60-inch double pedestal desks

(b) Four, armchairs with casters for desks

(c) Two, 4- or 5-drawer, legal size file cabinets

(d) Two, 32-inch by 8-foot, standard conference tables

(e) Twelve, side chairs with casters for conference table

(f) One, copy machine with the following minimum features:

Able to use 8-1/2 by 11 inch, 8-1/2 by 14 inch and 11- by 17-inch copy paper
Continuous feed
Collating for at least 20 copies
Enlargement/reduction capability
Stapling capability

Contractor shall provide all sizes of paper as required for duration of contract.

(g) One, fax machine with capability to use regular copy paper

(h) Five, office-type trash cans

(i) Two, ABC 10-pound fire extinguishers

(j) One, medium-size, 700-watt minimum, microwave oven

(k) One, 3 cubic foot, apartment-type refrigerator

(l) One bottled water cooler. Contractor shall provide drinking cups as required for duration of contract.

(m) One, 48- by 48-inch tackboard

b. The Contractor shall furnish as required all supplies such as broom, mop, soap, paper towels, toilet items, etc., for the facility for the period of the contract. For planning purposes, it is anticipated that a staff of four will be housed in the trailer.

c. During the contract period, the Contractor shall provide janitorial service for the Government trailer. These services shall include as a minimum:

(1) Daily removal of trash and sweeping of trailer

(2) Weekly sweeping, mopping and dusting and policing of area around

trailer.

d. The trailer, including all furniture and equipment, shall be removed from the project site upon completion of the contract.

e. All costs of providing the field office trailer and office equipment and the specified supplies, materials, services, and maintenance and removal of the facilities shall be included in the contract lump sum price bid in the schedule for mobilization and demobilization.

1.13 CONSTRUCTION SCHEDULE RESTRAINTS
*4

a. The site of the work is located adjacent to Clemson University. The school's football stadium and other athletic facilities are in close proximity to both dams. In this regard, the Contractor is advised that there will be periods when ingress and egress will be hindered by moderate to heavy traffic and congestion on the Federal, State, and county roads. The most obvious times for heavy traffic will be home football games. On days of football games, traffic patterns are altered on the roads in the vicinity of the dams and some of the roads are closed. The Contractor will have difficulty getting cars and pickup trucks to and from the construction site.

b. The Contractor shall conduct his operations so as to offer the least possible obstruction and inconvenience to Clemson University athletic events that will be occurring in the vicinity of the project during the period of construction.

There shall be no ingress or egress of heavy construction vehicles, only cars and pickup trucks, at the project site on the day before and the day of a Clemson home football game. There are seven home football games scheduled between August 30, 2003 and November 15, 2003. The specific dates are as follows:

August 30
September 6
September 13
October 11
October 25
November 8
November 15

Seven home football games will also be scheduled for the 2004 season; however, the dates are yet to be determined. The dates will be provided to the Contractor as soon as they are provided to the Government.
*4
There shall also be no ingress or egress of heavy construction vehicles, including cement trucks, on days of scheduled rowing meets. Exact dates of the meets are unknown at present. There will be up to four events scheduled during the fall of 2003, up to three events during the spring of 2004, and up to four events during the fall of 2004. The dates will be provided to the Contractor as soon as they are provided to the Government.

Furthermore, no operation of the batch plant nor unloading of cement shall be conducted on days of football games and rowing meets.

1.14 COOPERATION WITH OTHERS
*4

During the life of this contract, personnel of the Corps of Engineers Lake

Hartwell Project Office will be performing their usual operation and maintenance duties and security patrols at each of the dams. The Contractor shall, as directed by the Contracting Officer, cooperate with the Lake Hartwell Project personnel while they are performing their duties. Additionally, the Lake Hartwell Project Office will mow and trim areas at each dam outside of the designated construction limits during the life of the contract.

1.15 INSPECTION OF SITE

Bidders are strongly encouraged to inspect the site of the work. Arrangements for inspection of the site must be made by contacting the Area Engineer, Thomas F. List at (706) 213-3063.

1.16 ONSITE PRE-BID CONFERENCE

Pre-bid conference will be held in Room 104 of McAdams Hall at Clemson University in Clemson, South Carolina, beginning at 2 p.m. on June 10, 2003. Discussions with design engineers and site visits will be conducted that afternoon. Additional discussion and fielding of questions will be held on June 11, 2003, beginning at 8:30 a.m. Questions for the design engineers shall be submitted in writing by 8 a.m. on June 11.

McAdams Hall is located directly across from Barre Hall. For a Clemson University campus map and directions, go to www.clemson.edu/welcome/campmap/. Scroll down to 84 McAdams Hall. Click on 84; there will be a map. Written directions can be obtained by clicking on McAdams Hall at bottom of map.

1.17 TEMPORARY WATER WITHDRAWAL PERMIT
*4
Should the Contractor propose to withdraw water from Lake Hartwell for construction purposes, he must obtain a temporary Water Withdrawal Permit (will actually be a Specified Act Permit). Request for a permit shall be made through the Contracting Officer to the Resource Manager, Lake Hartwell Project Office. The following information is required for the permit:

a. Type, configuration and details, including drawings of proposed intake

b. Estimate of water usage per day and period of time of usage
*4
A request for a permit shall be submitted at least 40 calendar days prior to start of proposed water ~~useage~~usage. There is no cost for the permit.

1.18 DUST ABATEMENT

a. The Contractor shall comply with applicable Federal, State, and local laws and regulations concerning the prevention and control of air pollution; refer also to Section 01355A ENVIRONMENTAL PROTECTION.

b. In conducting the construction activities and operation of equipment, the Contractor shall utilize such practicable methods and devices as are reasonably available to control, prevent and otherwise minimize atmospheric emissions or discharges of air contaminants.

c. The emission of dust into the atmosphere will not be permitted during handling and storage of construction materials, particularly cement, and the Contractor shall use such methods and equipment as are necessary for the collection and disposal, or prevention, of dust during these operations.

d. The costs of complying with this paragraph shall be included in the prices bid in the schedule for the items of soil-cement mixing.

1.19 PARTNERING

Following contract award, the Government intends to propose a voluntary partnering relationship with the Contractor. This partnering relationship will attempt to draw on strengths of each organization to facilitate communications and minimize delays to achieve a quality product, within budget, and on schedule. Participation in such partnering activities may include attendance at coordination meetings and cooperation in other efforts to promote the partnering relationship. The Government and the Contractor will each bear their own costs for participation in the partnering relationship, with no change in the contract price. Participation will not result in any change in the terms or price of the contract.

1.20 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.21 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment, any fence installed by the Contractor shall be removed and shall become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as specified.

1.22 BURNING

The use of burning at the project sites for disposal of refuse and debris will not be permitted.

1.23 NOTIFICATION OF EXCAVATION

The Contractor shall notify the Contracting Officer at least 10 working days prior to any excavation work outside the limits of the soil-cement mixing to permit time for a survey of underground utilities.

1.24 MANAGEMENT AND COORDINATION MEETINGS

The Contractor shall meet on site weekly with the Government to discuss progress of the work and administration of the contract. Attendees shall include as a minimum the Contractor's superintendent and the Chief of Quality Control and at least one representative from each subcontractor, as appropriate. Topics to be discussed, as needed, will include safety, security, submittals, quality control, progress (including schedule information), payment, modifications, labor items, property, coordination, partnering, and any other subjects of interest. Meeting shall be held the same time and day of each week, as will be determined and scheduled at the Preconstruction Conference. The last weekly meeting of each month will be designated the Monthly Management Meeting and shall be attended by a

representative of the Contractor's home office, in addition to those attendees identified above.

PART 2 PRODUCTS (NOT APPLICABLE)
PART 3 EXECUTION (NOT APPLICABLE) -- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01780

AS-BUILT DRAWINGS SUBMITTALS

01/99

PART 1 GENERAL

1.1 OMITTED
1.2 SUBMITTALS
1.3 PROJECT RECORD DOCUMENTS
1.3.1 As-Built Drawings
1.3.1.1 Government Furnished Materials
1.3.1.2 Working As-Built and Final As-Built Drawings
1.3.1.3 Drawing Preparation
1.3.1.4 Computer Aided Design and Drafting (CADD) Drawings
1.3.1.5 Omitted
1.3.1.6 Payment

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section Table of Contents --

CEGS-01780 (January 1999)

SECTION 01780

AS-BUILT DRAWINGS SUBMITTALS
01/99

PART 1 GENERAL

1.1 OMITTED

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 will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

As-Built Drawings; G, RE

Drawings showing final as-built conditions of the project. The CADD drawings shall consist of two sets of completed final as-built drawings on separate media. One set of media shall be CADD drawing files. The other set of media shall consist of two sets of blue line prints and the approved marked working as-built prints.

SD-03 Product Data

As-Built Record of Equipment and Materials; G, RE

Two copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

1.3 PROJECT RECORD DOCUMENTS

1.3.1 As-Built Drawings

This paragraph covers as-built drawings complete, as a requirement of the contract. The terms "drawings," "contract drawings," "drawing files," "working as-built drawings" and "final as-built drawings" refer to contract drawings which are revised to be used for final as-built drawings.

1.3.1.1 Government Furnished Materials

One set of electronic CADD files in the specified software and format revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for projects requiring CADD file as-built drawings.

1.3.1.2 Working As-Built and Final As-Built Drawings

The Contractor shall revise two sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. These working as-built marked drawings shall be kept current on a weekly

basis and available on the job site at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. Final as-built drawings shall be prepared after the completion of specific phases of work as appropriate for the project. The working as-built marked prints and final as-built drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to incremental submission of each monthly pay estimate. If the Contractor fails to maintain the working and finalas-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. Noncompliance with regard to maintaining as-built drawings will be consideration for an interim unsatisfactory Contractor performance evaluation. The working and final as-built drawings shall show the following information, but not be limited thereto:

a. The actual location, kinds and sizes of all subsurface drainage lines. In order that the location of these lines and appurtenances may be determined in the event the clean-outs or surface openings become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Tees, clean-outs, and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.

b. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

c. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, etc.

d. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

e. Changes or modifications which result from the final inspection.

f. Modifications (change order price shall include the Contractor's cost to change working and final as-built drawings to reflect modifications) and comply with the following procedures.

(1) Directions in the modification for posting descriptive changes shall be followed.

(2) A modification circle shall be placed at the location of each deletion.

(3) For all new details or sections which are added to a drawing, a modification circle shall be placed by the detail or section title.

(4) For minor changes, a modification circle shall be placed by the area changed on the drawing (each location).

(5) For major changes to a drawing, place a modification circle by the title of the affected plan, section, or detail at each location.

(6) For changes to schedules or drawings, a modification circle shall be placed either by the schedule heading or by the change in the schedule.

(7) The modification circle size shall be 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.3.1.3 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, adding such additional drawings as may be necessary. At the time of final inspection, 1 copy of the working as-built prints shall be delivered to the Contracting Officer for review and approval. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

1.3.1.4 Computer Aided Design and Drafting (CADD) Drawings

Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same guidance specified for original drawings. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD files . The Contractor will use the most current version of Microstation software using Windows NT operating system. The electronic files will be supplied on ISO 9660 Format compact dics, read-only memory (CD-ROM). The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings. The Contracting Officer will review final as-built drawings for accuracy and the Contractor shall make all required corrections, changes, additions, and deletions.

a. When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 3/16 inch high. All other contract drawings shall be marked either "AS-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. Original contract drawings shall be dated in the revision block.

b. After receipt by the Contractor of the approved working as-built prints and approval of completed sections of final as-builts the Contractor shall, within 10 days for each specific phase of work for contracts less than $5 million, or 20 days for each specific phase of work for contracts $5 million and above, make the final as-built submittal. This submittal shall consist of one ISO 9660 compact disc, read-only memory (CD-ROM), and

two sets of prints of these drawings and the return of the approved marked working as-built prints. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this are the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. All paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract and shall be grounds for a final unsatisfactory Contractor performance evaluation. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

1.3.1.5 Omitted

1.3.1.6 Payment

No separate payment will be made for as-built drawings required under this contract, and all costs in connection therewith shall be considered a subsidiary obligation of the Contractor.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02000

SITEWORK

PART 1 GENERAL

1.1 DESCRIPTION OF WORK
1.2 REFERENCES
1.3 MEASUREMENT AND PAYMENT
1.4 SUBMITTALS

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 ABANDONMENT OF INSTRUMENTS AND WELLS
3.2 OMITTED
3.3 PERMANENT FENCING AND GATES
3.4 WIDENING CONSTRUCTION, MAINTENANCE, AND PAVING OF ACCESS ROADS, LOWER DAM
3.5 EXCAVATION AND BACKFILL FOR SOIL-CEMENT MIX CONSTRUCTION
3.6 MAINTENANCE AND PAVING OF ACCESS DRIVE, UPPER DAM
3.7 REPAIR OF CURB AND GUTTER AND SIDEWALK, UPPER DAM
3.8 CONSTRUCTION OF MEDIAN, UPPER DAM
3.9 SEEDING
3.10 SAMPLING AND TESTING OF EMBANKMENT MATERIALS
3.10.1 General
3.10.2 Quality Control
3.10.3 Types of Tests
3.10.3.1 Classification Tests
3.10.3.2 Moisture Content
3.10.3.3 Rapid Moisture Content Determination
3.10.3.4 Compaction Tests
3.10.3.5 Field Density Tests
3.10.4 Tests Required on Material Prior to Placement
3.10.4.1 General
3.10.4.2 Classification Tests
3.10.4.3 Compaction Tests
3.10.4.4 Moisture Content Tests
3.10.5 Tests Required During Placement
3.10.5.1 Field Density Tests
3.10.5.2 Moisture Content
3.10.5.3 Optimum Moisture and Laboratory Maximum Density
3.10.5.4 Time and Location of Tests
3.10.5.5 Field Density Control
3.10.6 Compaction Control
3.10.7 Compaction Procedure
3.10.7.1 General
3.10.7.2 One-Point Compaction Method
3.10.7.3 Two-Point Compaction Method

-- End of Section Table of Contents --

SECTION 02000

SITEWORK

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

The work covered by this section consists of furnishing all plant, labor, materials, and equipment and performing all operations in connection with performing the following items of work:

a. Abandonment of instruments and wells whose removal is required for construction of the soil-cement walls.

b. Installation and abandonment of all required temporary utilities.

c. Installation and removal of temporary fencing.

d. Installation of permanent fencing, gates, and pedestrian walk-throughs.

e. Construction, maintenance, and removal of temporary haul roads.

f. Widening construction and maintenance of access roads (East Beach and Loop Roads) into Lower Dam.

g. Repair and paving of access roads into Lower Dam upon completion of all construction work.

h. All required clearing and grubbing.

i. All excavation and backfilling of excavations, except for drains, required to perform the soil-cement mixing construction.

j. Maintaining during construction, and upon completion of all construction, repairing and paving the asphalt drive used for ingress and egress at the Upper Dam.

k. Removal of curb and gutter, sidewalk, and fill as necessary for ingress and egress at Upper Dam and reconstruction of same upon completion of all construction.

l. Repair of any damage to the new SC Highway 93, pavement and/or pavement markings at the entrance to the Upper Dam and the intersection of Perimeter Road and SC Highway 93.

m. Construction of the median, including all pavement markings, at the intersection of Perimeter Road and SC Highway 93.

n. Constructing, maintaining, repairing, and removing all erosion control measures.

o. Repair and seeding, both temporary and permanent, of all areas disturbed by construction activities.

1.2 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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 422	(1963; R 1998) Particle-Size Analysis of Soils
ASTM D 698	(2000a) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3))
ASTM D 1140	(1997) Amount of Material in Soils Finer Than the No. 200 (75-Micrometer) Sieve
ASTM D 1556	(1990;R 1996) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 2216	(1992) Laboratory Determination of Water (Moisture) Content of Soil and Rock
ASTM D 2487	(1993) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 4318	(1993) Liquid Limit, Plastic Limit and Plasticity Index of Soils
ASTM D 4643	(2000) Determination of Water (Moisture) Content of Soil by the Microwave Oven Method
ASTM D 4959	(2000) Determination of Water (Moisture) Content of Soil By Direct Heating Method

1.3 MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for the items of work required in this section, but all costs for the items of work shall be included in the contract lump sum price bid in the schedule for sitework.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Routing of Temporary Utilities; G, RE

Submit, at least 30 calendar days prior to start of any

construction, plans, sketches, and details of routing of temporary utilities.

Plan of Widening and Paving; G, RE

Submit, at least 30 calendar days prior to start of any construction, plans, design, and details of widening construction and subsequent paving of access roads (East Beach and Loop Roads) into Lower Dam. Include lengths, widths, and treatment of widenings and specifications and sources of materials.

Abandonment of Instruments and Wells; G, RE

Submit, at least 30 calendar days prior to start of any abandonment, a list of instruments and wells to be abandoned, and materials and procedures to be utilized in the abandonment of the wells and instruments.

SD-02 Shop Drawings

Pedestrians Walk-through; G, RE

Submit, at least 30 calendar days prior to the start of any fabrication or manufacturing, plans and details of the pedestrian walk-through to be installed at the Lower Dam.

Gate and Fencing; G, RE

Submit, at least 30 calendar days prior to the start of any fabrication or manufacturing, plans and details of the replacement gate and fencing to be installed at the foot of the hill at the end of East Beach Road.

Entrance Gates and Fencing; G, RE

Submit, at least 30 calendar days prior to the start of any fabrication or manufacturing, plans and details of the replacement gates and fencing to be installed at the main entrance to both the Lower Dam and the Upper Dam.

SD-06 Test Reports

Testing; G, RE

Copies of all laboratory and field test reports within 24 hours of completion of the test.

SD-11 Closeout Submittals

Abandonment Records; G, RE

Submit, within 30 calendar days of abandonment, abandonment record for each instrument or well abandoned.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 ABANDONMENT OF INSTRUMENTS AND WELLS

Only those instruments and wells whose removal is required for construction of the soil-mix walls and those indicated on the drawings shall be abandoned. Abandonment of the instruments and wells shall be as specified on contract drawing Plate B-9. All instruments and wells not abandoned shall be protected from disturbance and damage from construction activities. Any instrument or well damaged to the extent it is inoperable shall be replaced as directed by the Contracting Officer.

3.2 OMITTED

3.3 PERMANENT FENCING AND GATES

Permanent replacement fencing and gates shall meet the requirements of Section 02821 FENCING and the plans and details shown on drawing Plate B-15. Plans and details of the pedestrian walk-through to be installed at the Lower Dam shall be subject to the approval of the Contracting Officer.

3.4 WIDENING CONSTRUCTION, MAINTENANCE, AND PAVING OF ACCESS ROADS, LOWER DAM

Widening of the access roads (East Beach and Loop Roads) into the Lower Dam is anticipated to safely accommodate the construction traffic, especially Loop Road. During construction, the access roads shall be kept free of potholes and in otherwise good condition. Following completion of the required construction, areas of potholes shall be repaired and the access roads paved. All widening construction, maintenance, repair, and paving of the access roads shall be in accordance with the requirements specified on drawing Plate B-9. The repair and paving of access roads can be accomplished following completion of all construction work at either the Lower Dam, or at the Upper Dam, at the Contractor's option.

3.5 EXCAVATION AND BACKFILL FOR SOIL-CEMENT MIX CONSTRUCTION

All excavation and backfill required to accomplish the soil-cement mix construction, except that required for construction of the drains, shall be in accordance with the requirements specified in Section 02300 EARTHWORK. Excavation and backfill required for the construction of the drains shall be as specified in Section 02250 DRAINS.

3.6 MAINTENANCE AND PAVING OF ACCESS DRIVE, UPPER DAM

The asphalt drive to be used for ingress and egress to the Upper Dam shall be kept free of potholes and in otherwise good condition during its use. Following completion of the required construction, the areas of potholes shall be repaired and the drive paved. Repair and paving of the drive shall be in accordance with the requirements specified on drawing Plate B-10.

3.7 REPAIR OF CURB AND GUTTER AND SIDEWALK, UPPER DAM

If the removal of any curb and gutter and sidewalk is required for adequate access to the Upper dam, the Contractor shall reconstruct same upon completion of the required construction. The reconstruction shall be in accordance with the requirements specified on drawing Plate B-10.

3.8 CONSTRUCTION OF MEDIAN, UPPER DAM

By agreement with the Government, the South Carolina Department of

Transportation deleted from the SC Highway 93 widening contract the concrete median in SC Highway 93 at the Perimeter Road intersection to make easier the turning of heavy construction vehicles into the drive at the Upper Dam. Following completion of the required construction, the Contractor shall construct the median in accordance with the requirements specified on drawing Plate B-10.

3.9 SEEDING

All areas disturbed by construction shall be repaired and seeded in accordance with the requirements specified on the drawings and Section 02921A SEEDING.

3.10 SAMPLING AND TESTING OF EMBANKMENT MATERIALS

3.10.1 General

All materials and construction work required to widen and repair and pave the access roads into the Lower Dam, repair the access drive into the Upper Dam, and to reconstruct curb and gutter and sidewalks at the Upper Dam shall be in accordance with the applicable sections of the South Carolina Department of Transportation Standard Specifications for Highway Construction, Edition of 2000. Sampling and testing of the earthwork ("Embankment" per SCDOT Standard Specifications) required for the construction described above shall be in accordance with the requirements specified hereinafter in this section. Furthermore, the requirements specified hereinafter shall also apply to the placement and compaction of common fill backfill materials for the embankment trench drains whose construction is covered in Section 02250, DRAINS; however, the requirements shall only apply to placement and compaction of backfill materials beneath pavement cuts and around the outfall weir boxes.

3.10.2 Quality Control

Sampling and testing to provide for quality control as specified in Section 01451A CONTRACTOR QUALITY CONTROL shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government. The Contractor shall procure the services of a testing laboratory that has been validated by the Engineer Research and Development Center Materials Testing Center (MTC) under the Corps of Engineers laboratory inspection program or establish a testing laboratory at the project site that is inspected and validated. If the Contractor elects to establish testing facilities, no work requiring testing will be permitted until the Contractor's facilities have been inspected and validated. The onsite laboratory shall be established and operational and ready for inspection at least 30 calendar days prior to any required testing. A registered professional civil engineer shall certify inspections and test results. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being certified by the tests. Three copies of test results shall be included with the Contractor's daily construction quality control reports.

3.10.3 Types of Tests

3.10.3.1 Classification Tests

Classification of soils shall be determined in accordance with ASTM D 2487.

a. Liquid Limit and Plasticity Index: Liquid limit and plasticity index shall be determined in accordance with ASTM D 4318.

b. Sieve Analysis: Sieve analysis (wash No. 200, without hydrometer) shall be performed in accordance with ASTM D 422 and ASTM D 1140.

3.10.3.2 Moisture Content

Moisture content shall be determined in accordance with ASTM D 2216.

3.10.3.3 Rapid Moisture Content Determination

A rapid method for determining soil moisture content (including that from a density test) shall be utilized for moisture control of the fill. Either the microwave oven method or the direct heating method shall be utilized. The microwave method shall be in accordance with ASTM D 4643 and the direct heating method in accordance with ASTM D 4959. An oven-dried test in accordance with ASTM D 2216 shall be made to check each rapid moisture content test performed for a density test. The result from Method D 2216 shall be considered to be the correct one.

3.10.3.4 Compaction Tests

Compaction tests shall be performed by the test procedure presented in ASTM D 698. Adequate testing shall be conducted to establish at least five points with at least one point falling within plus or minus 1.5 percentage points of the plotted optimum moisture content.

3.10.3.5 Field Density Tests

Field in-place densities shall be determined by the sand displacement method in accordance with ASTM D 1556. The Contracting Officer reserves the right to direct the locations where field density tests are to be performed. SAS Form 865 shall be used for recording results of field density tests and submitted with the daily construction quality control reports. Results of density tests shall be maintained on CESAS Form 1177 - Summary of Field Density Tests and an updated copy submitted each week. The Contracting Officer will furnish Government forms to the Contractor.

3.10.4 Tests Required on Material Prior to Placement

3.10.4.1 General

All material from required excavations and borrow shall be tested prior to incorporation into the permanent work. The tests shall be performed on samples representative of the various materials to be utilized. Samples shall be carefully selected to represent the full range of materials to be used as fill and/or backfill. The following minimum number of tests shall be performed on the materials prior to the placement of the materials in the work. Additional tests of these types shall be performed when materials of different classification or compaction characteristics are encountered to determine the properties of the materials. The Contracting Officer reserves the right to direct additional testing as required.

3.10.4.2 Classification Tests

Classification tests shall be performed to determine the acceptability of materials in accordance with the requirements of the SCDOT Standard Specifications. Such tests on materials proposed for use as fill and/or

backfill shall be performed prior to their use. Sufficient classification tests shall be performed to define the full range of all materials proposed for use. A minimum of two classification tests shall be performed on each material classified as satisfactory for use. The Contracting Officer may at any time require additional classification tests to confirm material acceptability.

3.10.4.3 Compaction Tests

Compaction tests shall be performed prior to commencement of construction in order to determine the moisture-density relationships of all satisfactory materials proposed for use as fill and/or backfill. For each compaction test performed, an associated or companion classification test and moisture content test shall be performed. Compaction tests shall be performed in sufficient number to establish the full range of maximum dry density and optimum water content. A minimum of 9 compaction tests shall be performed on materials classified as satisfactory for use. Samples for these tests shall not be obtained from the same locations. The Contracting Officer reserves the right to direct where samples for additional compaction tests are obtained. In the event that the compaction characteristics of materials having the same classification vary appreciably, additional compaction tests shall be performed.

3.10.4.4 Moisture Content Tests

Moisture content tests shall be performed on all materials proposed for use as fill and/or backfill to determine their suitability for placement and compaction. Moisture content tests shall be performed in sufficient number to determine the full range of moisture contents. Moisture content test shall be performed for each compaction test and as required to determine acceptability of material prior to placement. Not less than two moisture content tests shall be performed on each material classified as satisfactory for use.

3.10.5 Tests Required During Placement

3.10.5.1 Field Density Tests

Acceptance of the compacted materials shall be determined by the results of field in-place density tests. Density tests in randomly selected locations shall be performed in the material and at the minimum frequency specified below:

Material Type	Location of Material	Minimum Test Frequency
Embankment, fill, and backfill	Areas compacted by other than hand-operated compactors	One test per lift per each increment or fraction of 400 square feet
Embankment, fill, and backfill	Areas compacted by hand-operated compactors	One test per foot of depth per each increment or fraction of 100 square feet

Material Type	Location of Material	Minimum Test Frequency
Subgrade	Areas compacted by other than hand-operated compactors	One test per each increment or fraction of 200 square feet
Subgrade	Areas compacted by hand-operated compactors	One test per each increment or fraction of 100 square feet

3.10.5.2 Moisture Content

In the stockpile(s), excavation, or borrow areas, a minimum of one test, each with a one-point or two-point compaction test, shall be performed per day per type of material or source of material being placed during stable weather conditions. During unstable weather, tests shall be made as dictated by the local conditions to ensure the moisture content of the placed materials are within the specified limits.

3.10.5.3 Optimum Moisture and Laboratory Maximum Density

A representative test shall be performed when any change in material occurs which may affect the optimum moisture content or laboratory maximum density.

3.10.5.4 Time and Location of Tests

The Government reserves the right to specify the location of any test. Whenever there is doubt as to the adequacy of the testing or validity of results, the Contracting Officer may direct that additional tests be performed, at no additional cost to the Government. The field density tests shall be performed at times and locations which will assure the specified compaction is being obtained throughout each lift for all materials placed. Additional field density tests shall be performed in areas where the Contracting Officer determines there is reason to doubt the adequacy of the natural subgrade.

3.10.5.5 Field Density Control

The results of field density tests shall be compared to results of compaction tests performed as required elsewhere in these specifications by the use of the appropriate procedures described in the following paragraphs.

3.10.6 Compaction Control

For fine grained (clayey and silty) soils and for sands with appreciable fines such that normal shaped compaction curves are obtained, results of all compaction tests shall be plotted on a common plot as a family of curves. For each field density test performed, a one-point compaction test, with additional points as needed, shall be performed on the same material on which the field density test was conducted. The one-point compaction test shall be performed on the dry side of the optimum moisture content. For comparison of field density data to the proper laboratory compaction test results, the procedures for the one-point and/or two-point compaction control methods as described in paragraph Compaction Procedure, shall be used. Compaction curves plotted on the family of curves shall be

of such a scale that the optimum moisture content can be interpreted to the nearest 0.1 percent and the maximum dry density can be interpreted to the nearest 0.1 pcf. When a one-point test plots outside the range of the family of curves, an additional five-point compaction test shall be performed.

3.10.7 Compaction Procedure

3.10.7.1 General

The following paragraphs describe methods of relating field density data to desired or specified values. Compaction control of soils requires comparison of fill water content and/or dry density values obtained in field density tests with optimum water content and/or maximum dry density. At a minimum, control shall be in accordance with the One-Point Compaction Method. Where conditions require, the Two-Point Compaction Method shall be used.

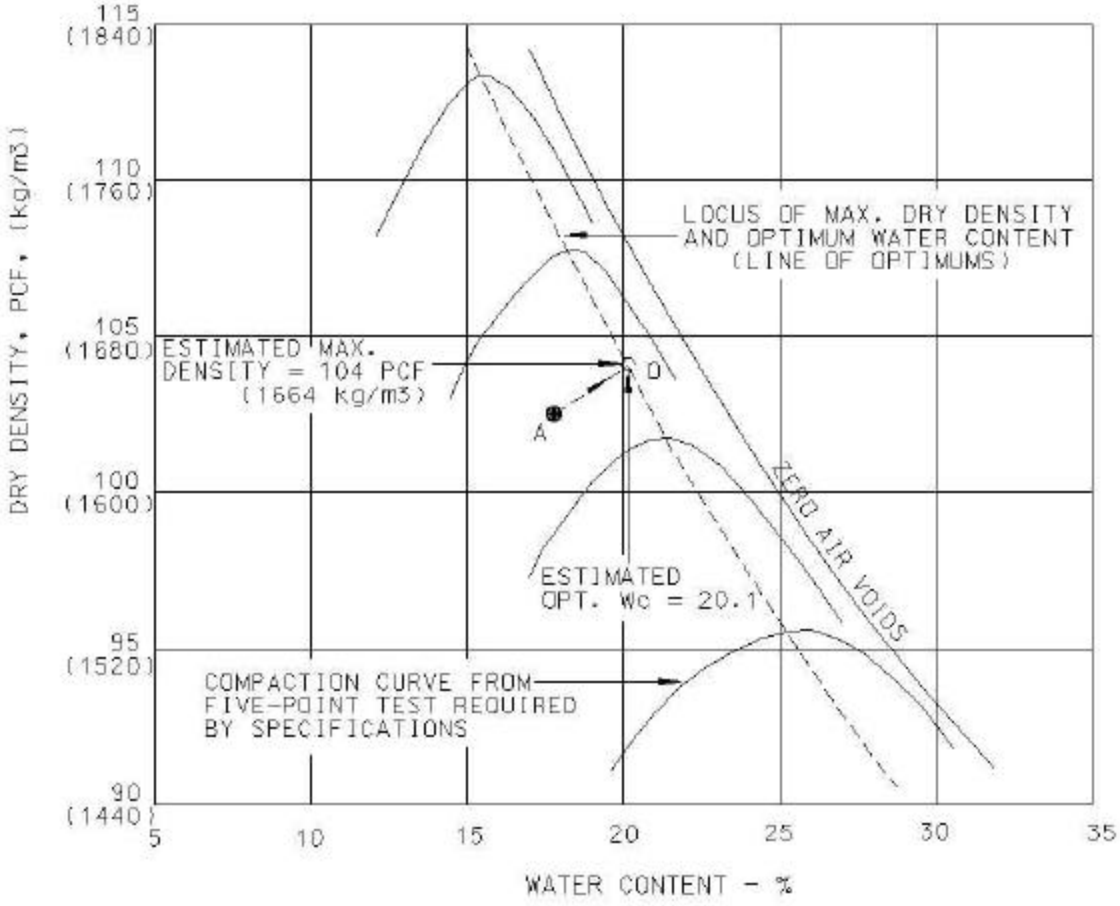
3.10.7.2 One-Point Compaction Method

The material from the field density test is allowed to dry to a water content on the dry side of estimated optimum, and then compacted using the same equipment and procedures used in the five-point compaction test. Thorough mixing is required to obtain uniform drying; otherwise, results obtained may be erroneous. The water content and dry density of the compacted sample are determined and then used to estimate its optimum water content and maximum dry density as illustrated in Figure 1 at the end of this section. In Figure 1, the line of optimums is well defined and the compaction curves are approximately parallel to each other, consequently, the one-point compaction method could be used with a relatively high degree of confidence. However, in Figure 2 at the end of this section, the curves are not parallel to each other and in several instances will cross if extended on the dry side. Consequently, the correct curve cannot be determined from the one-point method; therefore, the two-point compaction method should be used. The one-point method should be used only when the data define a relatively good line of optimums.

3.10.7.3 Two-Point Compaction Method

In the two-point test, one sample of material from the location of the field density test is compacted at the fill water content if thought to be at or on the dry side of optimum water content (otherwise, reduced by drying to this condition) using the same equipment and procedures used in the five-point compaction test. A second sample of material is allowed to dry back about 2 to 3 percentage points dry of the water content of the first sample and then compacted in the same manner. At least one point shall fall within 3 percent of the line of optimums. After compaction, the water contents and dry densities for the two samples are determined. The results are used to identify the appropriate compaction curve for the material being tested as shown in Figure 2 at the end of this section. The data shown in Figure 2 warrant the use of the two-point compaction test because the five-point compaction curves are not parallel. Using point A only, as in the one-point test method, would result in appreciable error as the shape of the curve would not be defined. Two compaction points can more accurately define the estimated compaction curve.

-- End of Section --



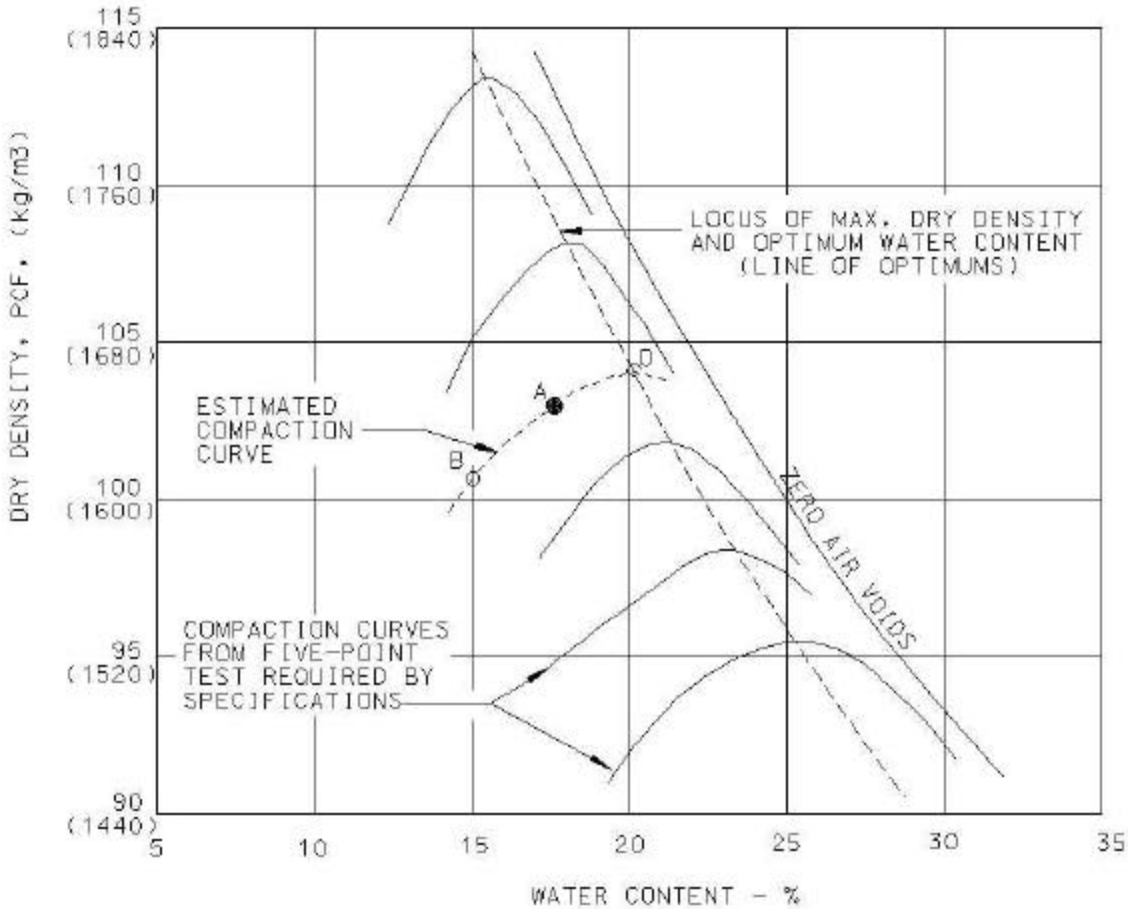
PROCEDURE:

1. Point A is the result of a one-point compaction test on material from field density test. This point must be on the dry side of optimum water content.

2. Point O is the estimated optimum water content and maximum density of the fill material based on a projection of point A approximately parallel to the adjacent compaction curves.

3. Point A must plot within 3 percent of the line of optimums.

Figure 1. Illustration of one-point compaction method.



PROCEDURE:

1. Points A and B are results of a two-point compaction test on material from field density test. Points A and B must be on the dry side of optimum water content.

2. The estimated compaction curve based on Points A and B establishes Point O on the locus, which is the estimated maximum dry density and optimum water content of the fill material.

3. One point must plot within 3 percent of the line of optimums.

Figure 2. Illustration of two-point compaction method.

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02140

DEWATERING

PART 1 GENERAL

1.1 DESCRIPTION OF WORK
1.2 DEFINITION
1.3 SYSTEMS DESCRIPTION
1.3.1 Design Requirements
1.3.2 Monitoring System
1.4 SUBMITTALS
1.5 SITE CONDITIONS
1.5.1 Exploratory Borings
1.5.2 Laboratory Testing
1.5.3 Groundwater
1.6 PAYMENT

PART 2 PRODUCTS

2.1 DEWATERING OPERATIONS AND MONITORING EQUIPMENT

PART 3 EXECUTION

3.1 GENERAL
3.2 DEWATERING REQUIREMENTS
3.2.1 Dewatering System
3.2.2 Control of Surface Water
3.2.3 Disposal of Water
3.2.4 Maintenance and Monitoring
3.2.5 Corrective Action
3.3 REPAIR OF DAMAGE TO WORK
3.4 REMOVAL

-- End of Section Table of Contents --

SECTION 02140

DEWATERING

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

The work covered by this section includes:

a. Design of dewatering systems for the control, collection, and disposal of groundwater and surface water to permit the proper construction of all contract work, including collection and diversion of surface runoff.

b. Providing all material and labor to install, operate, and maintain all pumps, piping, drains, well points, wells, and other facilities for the control, collection, and disposal of groundwater and surface water to permit the proper construction of all contract work, including collection and diversion of surface runoff.

c. Complying with all applicable environmental protection laws and requirements in operation of the dewatering systems and disposal of collected water.

d. Removal of all components of the dewatering systems at the completion of the dewatering work.

1.2 DEFINITION

Dewatering means the removal and control of groundwater from pores or other open spaces in soil or rock formations to the extent that allows construction activities to proceed as intended, and includes relief of groundwater pressure.

1.3 SYSTEMS DESCRIPTION

1.3.1 Design Requirements

a. The dewatering systems shall be designed consistent with sound dewatering engineering principles and practices, in accordance with best modern practice. The dewatering system shall be designed for continuous operation, and provisions made to prevent interruptions due to power outages, mechanical failures, or other reasons.

b. The dewatering systems shall be designed by a qualified dewatering specialist experienced in design, installation and operation of dewatering systems. The dewatering specialist shall be a registered professional engineer with a minimum of 5 years of responsible experience in the design of dewatering systems for dam construction projects. All design drawings, calculations, data, and other design and operation documents shall bear the designer's seal and signature. The dewatering specialist shall maintain professional liability insurance for errors and omissions for his/her design. The coverage shall be in full force for the duration of the project and until any and all claims related to dewatering are settled.

c. Well points, wells, and monitoring wells shall not be installed by jetting or self-jetting methods. They shall be installed by hollow stem auger, open-hole rotary drilling, or rotary drilling and simultaneous installation of temporary casing. Use only an approved organic drilling fluid; do not use bentonitic drill fluids. Keep the hole full with drilling fluid until the installation is complete. Ensure auger withdrawal is sufficiently slow to prevent detrimental suction.

1.3.2 Monitoring System

To provide for monitoring system performance and adequacy, include in each dewatering system for each dam not less than 12 monitoring wells, located and to such depths as required to ensure compliance with the requirements of these specifications. Design and install monitoring wells to provide for accurate measurement of water levels. The Contracting Officer reserves the right to relocate or designate different depths for monitoring wells or measurement devices in order to ensure meaningful monitoring of the dewatering system. Submit water level readings for review when requested by the Contracting Officer.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Dewatering Plan; G, ED

At least 40 days prior to beginning any work on, or procuring any equipment for, a dewatering system, submit, for review and comment, a complete and detailed dewatering plan. Include in the plan methods and equipment the Contractor proposes to use to achieve and maintain excavations in a dewatered and hydrostatically relieved condition, to monitor the performance and adequacy of the dewatering system, to dispose of pumped groundwater, and to remove the dewatering system when no longer required. Include in the plan:

a. Certification of the experience of the dewatering system designer, and installer and operator, including descriptions of at least two previous successful projects of complexity comparable to that required for this contract.

b. Locations, depths, layout, and sizes for well points, monitoring wells, discharge headers and disposal lines, sumps, drains, ditches, and other dewatering system features.

c. Types, sizes, quantities, capacities, and other identifying characteristics for pumps, standby equipment, power systems, well screens, filter material, monitoring equipment, and other dewatering system components.

d. Methods and procedures for installation, operation, maintenance, monitoring, and removal of the dewatering system including drilling methods, well development techniques, interruption prevention and correction, system supplementation or revision, methods and procedures to fill openings and voids left by removal of the system, and other operations related to dewatering.

e. Design calculations and supporting data upon which the dewatering system design is based.

Comments by the Government on the proposed dewatering system will only be with respect to the basic principles of the methods the Contractor intends to employ. The dewatering system may be placed in operation upon review and comment, but the review and comment shall not relieve the Contractor from full responsibility for adequate design, installation, maintenance, operation, and performance of the dewatering system and its individual components.

SD-06 Test Reports

Readings; G, RE

Submit for review, when requested, records of water level readings taken from the monitoring system within 24 hours of such reading.

1.5 SITE CONDITIONS

1.5.1 Exploratory Borings

Since the Clemson Upper and Lower Diversion Dams were constructed in 1960 and 1961, numerous borings have been performed off and on, related to seepage problems at the dams, for the design of concrete cutoff walls, and recent concerns about the loose foundation materials. In addition, subsurface data are available from installation logs of piezometers and monitoring wells. The borings included soil sampling of the dam embankment materials and the original foundation alluvial soils and coring of the foundation bedrock. Locations of the borings, piezometers and monitoring wells which fall within this contract and those considered related to the contract are shown on the drawings. Logs of the borings and instrument installations are included in Appendix A. The Government assumes no responsibility for interpretation or deductions made by the Contractor from the logs and borings. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristics of the subsurface materials of the region are to be expected and, if encountered, will not be considered as differing materially within the purview of the DIFFERING SITE CONDITIONS clause of the contract. Soil classifications shown on the logs are the result of laboratory and/or field visual-manual classifications, supplemented in some instances by index testing.

1.5.2 Laboratory Testing

The results of all laboratory index testing performed for the present seismic evaluation study of the dams are included in Appendix B. There has been considerable laboratory testing performed for the dams related to the seepage problems, design of concrete cutoff walls, and recent studies regarding the loose foundation materials. Testing has included index

tests, undrained and drained triaxial shear tests, direct shear tests, laboratory vane shear tests, and dispersive soil tests on soil samples and petrographic analyses and compression tests on rock cores. The results of the testing are included in the following reports:

USACE (1981) Design Memorandum 32, "Rehabilitation of Clemson Lower Diversion Dam, Volumes I and II."

USACE (1982) Design Memorandum 33, "Rehabilitation of Clemson Upper Diversion Dam."

GEI Consultants, Inc. (1994) "Seismic Evaluation of Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

GEI Consultants, Inc. (1995) "Supplemental Report for Seismic Evaluation of Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

GEI Consultants, Inc. (2002) "Design Summary Report, Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

The above reports are available for review and inspection at the Savannah District Office; to view the reports contact the Project Engineer, Ben Foreman at (912) 652-5370.

1.5.3 Groundwater

The normal full pool for the Hartwell Lake is elevation 660. Time-history plots and cross-section plots of reservoir and piezometric levels for the period December 1995 to January 2002 for both dams are included in Appendix C. The plots are from the 2002 Annual Embankment Instrumentation Report for the Clemson Diversion Dams. The entire report is available for review and inspection at the Savannah District Office; to review the report contact the Project Engineer, Ben Foreman at (912) 652-5370. Also included in the appendix are additional recent water level readings for the piezometers and monitoring wells at the dams.

1.6 PAYMENT

Payment for dewatering will be made at the lump sum price bid in the schedule for the appropriate dam, which price shall include all costs for designing, supplying, installing, maintaining, operating, and removing the dewatering system; including installing, maintaining, reading and abandoning observation wells; and for all labor, equipment, materials and incidentals necessary to permit the proper construction of all contract work as specified in this section.

PART 2 PRODUCTS

2.1 DEWATERING OPERATIONS AND MONITORING EQUIPMENT

Provide dewatering operations and monitoring equipment which have been approved by the Government.

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall review the available topographic, subsurface, and hydrogeologic data for the project site. It shall be the Contractor's

responsibility to evaluate the subsurface conditions at the project site with respect to all required dewatering facilities.

3.2 DEWATERING REQUIREMENTS

3.2.1 Dewatering System

The Contractor shall design, furnish, install, maintain, and operate a dewatering system at each dam to render and maintain all required excavations in a dewatered and hydrostatically relieved condition, and to permit the required excavations, soil-cement mixing construction, installation of all drain pipe, backfill operations, and other construction operations to be performed in the dry. The dewatering system shall be adequate to predrain the water-bearing strata above and below the soil-cement installation levels and the bottom of the drain pipe trenches. The dewatering system shall prevent loss of soil, seepage, boiling, "quick" conditions, or softening of excavation subgrades and maintain stability of excavated slopes. The dewatering system and operation shall be such that the bottoms of all excavations are kept dry and firm at all times; groundwater shall be maintained at least 18 inches below excavation subgrades and soil-cement installation levels at all times. The location of every element of the dewatering system shall be such that interference with excavation and construction activity is minimized.

3.2.2 Control of Surface Water

The control of all surface water, ice, and snow are considered as part of the dewatering requirements. The control shall be so that the stability of excavated and constructed slopes are not adversely affected by water, that erosion is controlled, and that flooding of excavations or damage to the completed work does not occur. Surface water drainage shall be directed away from the excavations.

3.2.3 Disposal of Water

*4

a. Dispose of water removed by dewatering system in such a manner that will not endanger portions of dam not involved in the construction and portions of work under construction or completed. Comply with all local, State and Federal regulations.

b. At the Lower Dam, discharge water from the dewatering system shall be discharged into the drainage ditch that runs into the Old Seneca River. The ditch parallels the Government property fence behind the metal storage building. At the Upper Dam, discharge water shall be discharged into the flat-bottom ditch that runs along SC Highway 93. The discharge line(s) shall be placed, as directed by the Contracting Officer, near the opening(s) of the culverts that convey water from the ditch beneath SC Highway 93. Or, the discharge water can be pumped over either dam into Lake Hartwell.

c. A National Pollutant Discharge Elimination System (NPDES) Permit is not required for the dewatering system(s) discharge.

d. The Contractor shall repair, as directed by the Contracting Officer, any damage caused by the discharges from the dewatering systems.

3.2.4 Maintenance and Monitoring

a. Maintain excavations and pipe trenches in a dewatered and hydrostatically relieved condition until all pipe and related appurtenances have been installed and backfill of excavations and pipe trench has been completed to the point that dewatering is no longer required as approved by the Contracting Officer.

b. System maintenance includes, as a minimum, 24-hour supervision by personnel skilled in the operation, maintenance, and repair and replacement of system components, and sufficient standby and spare equipment and features to effectively prevent interruption in dewatering operations.

c. Monitoring system performance and adequacy includes taking water level readings in the monitoring wells; such readings shall be made daily.

3.2.5 Corrective Action

Should monitoring or other conditions disclose inadequate performance of the system, the Contractor shall supplement, revise, or change the system as required to comply with the requirements of these specifications. Such supplementation, revision, or changing of the dewatering system shall be subject to approval by the Contracting Officer, and shall be by and at the expense of the Contractor.

3.3 REPAIR OF DAMAGE TO WORK

The Contractor shall repair or replace damage to the work, including work in place and excavations, including bottom heave, resulting from negligence, inadequate performance, or mechanical or electrical failure of dewatering system components, and including removal and replacement of material and pumping out excavations, by and at the expense of the Contractor, subject to approval by the Contracting Officer.

3.4 REMOVAL

Following approval from the Contracting Officer to cease dewatering, remove dewatering equipment from the site and fill and seal all dewatering well-point wells and monitor wells. Fill and seal wells in accordance with the following:

a. At each well, attempt to pull and remove the entire casing-screen string and allow the filter material to collapse into the hole. Fill wells by tremieing clean sand from the bottom up to the top of the hole.

b. If the entire casing-screen string cannot be removed, attempt to pull and remove the casing by separating it from the screen at the disconnect joint. If this cannot be done, abandon the entire casing-screen string in the hole, except as specified below. In any event, seal and fill wells as specified in subparagraph a. above.

c. Cut off any casing remaining in the hole not less than 2 feet below ground surface, and backfill and compact the hole with clean sand.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02231

CLEARING AND GRUBBING

07/02

PART 1 GENERAL

1.1 SUBMITTALS

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 PROTECTION
3.1.1 Roads and Walks
3.1.2 Trees, Shrubs, and Existing Facilities
3.1.3 Utility Lines
3.2 CLEARING
3.3 OMITTED
3.4 OMITTED
3.5 GRUBBING
3.6 DISPOSAL OF MATERIALS
3.6.1 Saleable Timber
3.6.2 Nonsaleable Materials

-- End of Section Table of Contents --

UFGS-02231 (July 2002)

SECTION 02231

CLEARING AND GRUBBING
07/02

PART 1 GENERAL

1.1 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 will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Materials Other Than Salable Timber

Written permission to dispose of such products on private property shall be filed with the Contracting Officer.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 PROTECTION

3.1.1 Roads and Walks

Keep roads and walks free of dirt and debris at all times.

3.1.2 Trees, Shrubs, and Existing Facilities

Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require.

3.1.3 Utility Lines

Protect existing utility lines that are indicated to remain from damage. Notify the Contracting Officer immediately of damage to or an encounter with an unknown existing utility line. The Contractor shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to the Contractor prior to start of clearing and grubbing operations.

3.2 CLEARING

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated or otherwise approved for removal, including downed timber, snags, brush, and rubbish occurring within the areas to be cleared. Clearing shall also include the removal and disposal of structures that obtrude, encroach upon, or otherwise obstruct the work. Trees, stumps,

roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Trees along perimeters of cleared areas or along road widenings with branches that would interfere with construction traffic may be trimmed. Trees shall be trimmed of limbs and branches to the extent and heights as approved. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branches. Cuts more than 1-1/2 inches in diameter shall be painted with an approved tree-wound paint.

3.3 OMITTED
3.4 OMITTED

3.5 GRUBBING

Grubbing shall consist of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots from the approved grubbing areas. Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation or roadway purposes, shall be removed to a depth of not less than 18 inches below the original surface level of the ground in areas approved to be grubbed. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

3.6 DISPOSAL OF MATERIALS

3.6.1 Saleable Timber

All timber on the project site noted for clearing and grubbing shall become the property of the Contractor, and shall be removed from the project site and disposed of off Government controlled land at the Contractor's responsibility.

3.6.2 Nonsaleable Materials

Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations shall be disposed of outside the limits of Government-controlled land at the Contractor's responsibility.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02235

INCLINOMETERS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK
1.2 REFERENCES
1.3 MEASUREMENT AND PAYMENT
1.3.1 Measurement
1.3.1.1 Inclinometer Casing
1.3.1.2 Inclinometer Reading
1.3.2 Payment
1.3.2.1 Inclinometer Casing
1.3.2.2 Inclinometer Reading
1.4 SUBMITTALS

PART 2 PRODUCTS

2.1 INCLINOMETER PROBE
2.2 INCLINOMETER CASING

PART 3 EXECUTION

3.1 INSTALLATION OF CASING
3.1.1 General
3.1.2 Installation
3.2 PROTECTION AND MAINTENANCE OF CASING
3.3 READING OF CASING
3.4 ABANDONMENT OF CASING

-- End of Section Table of Contents --

SECTION 02235

INCLINOMETERS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

The work covered by this section consists of furnishing all plant, labor, materials, and equipment and performing all operations required to furnish, install, protect and maintain, read, and evaluate probe-type inclinometers to monitor for internal movement of the downstream slopes of the dams during the period that the berm is excavated.

1.2 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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1586	(1984; R 1992) Penetration Test and Split-Barrel Sampling For Soils
ASTM D 6230	(1998) Standard Test Method for Monitoring Ground Movement Using Probe-Type Inclinometers

1.3 MEASUREMENT AND PAYMENT

1.3.1 Measurement

1.3.1.1 Inclinometer Casing

Measurement for payment for installing inclinometer casing will be of the vertical length, in linear feet, of casing actually installed satisfactorily.

1.3.1.2 Inclinometer Reading

Measurement for payment for reading inclinometer casing and reducing plotting and reporting data for the reading will be of each reading satisfactorily performed.

1.3.2 Payment

1.3.2.1 Inclinometer Casing

Payment for installing inclinometer casing will be made at the unit price per linear foot bid therefor in the schedule, which price and payment shall constitute full compensation for all labor, materials, and equipment required to furnish, fabricate, install, protect and maintain the casing as specified.

1.3.2.2 Inclinometer Reading

Payment for reading, reducing, plotting and reporting data obtained from an inclinometer casing will be made at the unit price per each bid therefor in the schedule, which price and payment shall constitute full compensation for all labor, materials and equipment required to perform a complete set of measurements on a single inclinometer casing and the data reduction and reporting requirements associated therewith. The price and payment shall also constitute full compensation for furnishing the probe, cable, portable readout unit, pulley assembly and any other ancillary equipment.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Materials and Equipment; G, RE

Submit, at least 30 calendar days prior to ordering inclinometer casing materials and reading equipment, a complete list of materials and equipment to be utilized. The list shall include manufacturer's name and model numbers, data sheets, and such other descriptive data necessary to identify the materials and equipment. Approval of materials and equipment will be based on manufacturer's published data. Approval shall not be construed as a complete check, but will indicate only general approval of the quality of the materials and equipment to be utilized. The Contractor shall be responsible for the satisfactory installation and performance of all work specified in this section.

Qualifications; G, RE

Submit, at least 45 calendar days prior to beginning any installation, the qualifications of the personnel to be supervising, installing, and reading the inclinometer casing. The information submitted shall include the experience, authority, and responsibilities of the various personnel to be performing the work specified in this section.

Installation of Casings; G, RE

Submit, at least 45 calendar days prior to beginning any installation, the methods and procedures to be utilized to install the inclinometer casing. The submittal shall identify make and model number of the proposed drill rig, and the methods of advancing and stabilizing the drill hole, installing casings, and mixing and pumping grout.

SD-06 Test Reports

Readings; G, RE

Submit results of reading as a tabulation of displacement versus depth and a plot of displacement versus depth for both directions

within 24 hours of reading.

PART 2 PRODUCTS

2.1 INCLINOMETER PROBE

The Contractor shall furnish the probe to perform the readings of the inclinometer casings. The probe shall have two force-balanced, servo-accelerometers in a stainless steel waterproof housing. One accelerometer shall measure tilt in the plane of the probe wheels, which track the longitudinal grooves of the casing. The other accelerometer shall measure tilt in the plane perpendicular to the wheels. The housing shall have two sets of self-centering, spring-loaded wheels, spaced 2 feet apart, which fit tightly into the grooves in the casing and self-center the probe within the casing. The probe shall have a range of at least plus or minus 35 degrees from vertical and a resolution of at least 0.0012 inch per 24 inches. The Contractor shall also furnish the readout, or data logger, used to record the survey readings, the computer software required for data reduction and graphing, and the control cable and pulley assembly used to lower and raise the probe through the casing.

2.2 INCLINOMETER CASING

Inclinometer casing and couplings shall be constructed of self-aligning, ABS plastic, and have four precision-cut, full-length internal wheel track grooves. The casing shall have a minimum outside diameter of 3 inches, and sufficient wall thickness and strength to withstand pressures generated by grouting the annular space between the borehole wall and the casing. The couplings shall be of the sealable type. A cap shall be attached at the bottom of the casing and a removable cap shall be supplied for the top.

PART 3 EXECUTION

3.1 INSTALLATION OF CASING

3.1.1 General

Inclinometer casing shall be installed at the locations indicated on the drawings. The bottom of the casing shall extend a minimum of 5 feet into the dense sand and gravel stratum underlying the alluvium as shown on the drawings. The inclinometer casing shall be installed and have been approved at least 10 days prior to any excavation in the reach of the berm to be monitored by the casing. The Contractor shall notify the Government a minimum of 48 hours prior to commencement of drilling for a casing installation. A platform from which to install the casing and ramp(s) for ingress and egress can be excavated into the existing embankment slope; however, the ramp(s) shall be removed and the platform excavation shall be refilled at the time backfilling of the excavation performed for the soil-cement construction is completed.

3.1.2 Installation

Installation of the casing shall be in accordance with ASTM D 6230 with the following exceptions:

a. Sampling and atandard penetration testing in accordance with ASTM D 1586 shall be performed in the borehole from at least 15 feet above the sand and gravel stratum to a depth of at least 5 feet into the sand and gravel stratum.

b. The drill hole for the casing shall be drilled vertically and shall have a minimum diameter of 6 inches. The drill hole shall be drilled using rotary drilling methods with a drilling fluid capable of removing the cuttings from the drill hole. The Contractor shall use a portable pit for containment of the drilling fluid. When the drill hole is complete to the specified depth, the inclinometer casing shall be assembled and lowered into the hole. The casing shall be installed so that one set of grooves is positioned normal to the centerline of the dam. When the casing has been installed to the required depth, the annular space between the outside of the casing and the side of the drill hole shall be filled with a grout mix having a ratio (by weight) of 2.5 water:1 cement:0.3 sodium bentonite. Mix the cement with water first, then mix in the bentonite. Adjust the amount of bentonite to produce a grout with the consistency of heavy cream. If the grout is too thin, the solids and the water will separate; if too thick, the grout will be too difficult to pump. The grout shall be pumped in the hole from the bottom up, either through a polyethylene pipe attached to the outside of the casing, through drill rods, through a pipe extending into the hole along the annular space between the casing and the side of the hole, or through a grout valve installed in the bottom of the casing. The casing interior shall be kept free of grout and foreign matter at all items during the installation. After the grout has been allowed to set for 1 day, the hole shall be topped off with grout to compensate for any shrinkage at the surface. Should the drill hole cave in during installation of the casing and the bottom of the casing not reach the bottom elevation as specified herein, the casing shall be pulled and the hole redrilled at no additional cost to the Government.

3.2 PROTECTION AND MAINTENANCE OF CASING

Each inclinometer casing shall be protected to avoid disturbance or damage from construction activities. The casing interior shall remain free of foreign matter at all items. The cap, taped securely to the top of casing, shall remain in place at all times except when the casing is being surveyed. Any casing installation damaged by the Contractor's operations shall be replaced immediately at the Contractor's expense. If considered necessary for the stability and safety of the dam embankment, the Contracting Officer may direct that construction activities in the vicinity of the casing be suspended until the damaged casing is replaced.

3.3 READING OF CASING

Each casing shall be read (or surveyed) during the period that excavation and backfilling activities are being conducted within a reach of 200 feet centered about the casing and parallel to the axis of the dam. The casing shall be read every other calendar day, including holidays and non-workdays. Readings shall begin with start of excavation and shall be continued until the reach has been backfilled to the original ground surface, or until such time the discontinuation of the readings is ordered in writing by the Contracting Officer. The Government reserves the right to increase or decrease the frequency of readings from that indicated above as may be deemed necessary to ensure that the excavation slopes and dam embankment are stable and in a safe condition.

3.4 ABANDONMENT OF CASING

When no longer required, as determined by the Contracting Officer, the casing shall be abandoned and permanently sealed by completely filling the casing with grout proportioned as specified above for installing the

casing. The grout shall be tremied into the casing through a pipe or drill rod lowered to the bottom of the casing.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02240R

*4 SOIL STABILIZATION BY SOIL-CEMENT MIXING

01/03

PART 1 GENERAL

1.1 DESCRIPTION OF WORK
1.1.1 General
1.1.2 Shear Walls
1.1.3 Longitudinal Wall
1.1.4 Order of Work
1.1.5 Earthwork
1.1.6 Work Following Test Sections
1.2 REFERENCES
1.3 MEASUREMENT AND PAYMENT
1.3.1 Principal Soil-Cement Mixing
1.3.1.1 Measurement
1.3.1.2 Payment
1.3.2 Additional Soil-Cement Mixing
1.3.2.1 General
1.3.2.2 Measurement
1.3.2.3 Payment
1.3.3 Additional Wet Grab Samples
1.3.3.1 General
1.3.3.2 Measurement
1.3.3.3 Payment
1.3.4 Additional Core Borings
1.3.4.1 General
1.3.4.2 Measurement
1.3.4.3 Payment
1.3.5 Interface Core Borings
1.3.5.1 Measurement
1.3.5.2 Payment
1.4 DEFINITIONS
1.4.1 Soil-Cement
1.4.2 Soil-Cement Element
1.4.3 Soil-Cement Shear Wall
1.4.4 Soil-Cement Longitudinal Wall
1.4.5 Cement Factor
1.4.6 Mixing Spoils
1.4.7 Common Fill
1.4.8 Quality Control Testing Laboratory
1.4.9 Installation Level
1.4.10 Design Top Elevation
1.4.11 Unconfined Compressive Strength
1.5 QUALIFICATIONS
1.5.1 Contractor
1.5.2 Field Superintendent
1.5.3 Soil-Cement Mixing Equipment Operator
1.5.4 Grout Mixing Plant Operator
1.5.5 Testing Laboratory
1.6 SUBMITTALS

1.7 OMITTED
1.8 GEOTECHNICAL SITE CONDITIONS
1.8.1 Exploratory Borings
1.8.2 Laboratory Testing
1.8.3 Groundwater

PART 2 PRODUCTS

2.1 CEMENT GROUT
2.1.1 Portland Cement
2.1.2 Composition
2.1.3 Water
2.1.3.1 Water Requirements
2.1.3.2 Reservoir Water
2.1.4 Temperature of Grout
2.1.5 Grout Admixtures
2.1.6 Initial Set
2.2 SOIL-CEMENT
2.2.1 Strength Criterion
2.2.2 Wall Layout
2.2.3 Laboratory Mix Design Program

PART 3 EXECUTION

3.1 GENERAL
3.2 EQUIPMENT
3.3 CONSTRUCTION, GENERAL
3.4 INSTALLATION OF SOIL-CEMENT SHEAR AND LONGITUDINAL WALLS
3.4.1 Proper Location and Alignment
3.4.2 Vertical Alignment Monitoring
3.4.3 Grout Injection Monitoring
3.4.4 Mixing
3.4.5 Sequencing
3.4.6 Omitted
3.4.7 Debris
3.4.8 Potential for Discontinuity
3.5 INSTALLATION TOLERANCES
3.5.1 Length and Width
3.5.2 Horizontal Deviation
3.5.3 Vertical Misalignment
3.6 CONTAINMENT, COLLECTION AND DISPOSAL OF SPOIL RETURN
3.6.1 Containment
3.6.2 Cleaning and Removing
3.6.3 Blending of Mixing Spoils
3.6.4 Disposal of Mixing Spoils
3.7 TEST SECTIONS
3.8 QUALITY CONTROL (QC) PROGRAM
3.8.1 General
3.8.2 Control Procedures
3.8.3 Sampling and Testing
3.8.3.1 Grout
3.8.3.2 Wet Grab Soil-Cement Samples
3.8.3.3 Core Samples
3.8.3.4 Soil-Cement Bedrock Interface Core Samples
3.9 ACCEPTANCE OF PRODUCTION SOIL-CEMENT WALLS
3.9.1 Acceptance of Shear Walls and Longitudinal Walls
3.10 CLEANUP

-- End of Section Table of Contents --

CEGS-02240R (01/03)

SECTION 02240R

*4 SOIL STABILIZATION BY SOIL-CEMENT MIXING
01/03

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

1.1.1 General

The work covered by this section consists of furnishing all plant, labor, equipment and materials and performing all operations in connection with the construction of soil-cement shear walls beneath the downstream berms of the Clemson Upper and Lower Diversion Dams in accordance with the contract drawings and these specifications. The purpose of the shear walls is to reinforce foundation soils against their failure during the design seismic event. The shear walls will be installed from a flat area excavated in each downstream berm.

1.1.2 Shear Walls

The layout and spacing of the shear walls shown on the drawings assumes an average shear wall width of 3 feet and a shear wall spacing (center to center) of 15.5 feet. The Contractor may propose different average wall thicknesses to match his equipment provided either the compressive strength of the soil-cement or the wall spacing is adjusted in accordance with the specifications. Shear walls shall have an average width of 2.4 feet or greater and a minimum width at element overlaps of 1.9 feet or greater. The end stations of the remediated zones are to be no farther from the abutments than shown on the drawings.

1.1.3 Longitudinal Wall

A soil-cement longitudinal wall is shown on the drawings to be constructed at the upstream end of the shear walls. The longitudinal wall shall have a minimum average width of 2.4 feet and a minimum width of 1.9 feet. The Contractor may construct a wider longitudinal wall. The width of the longitudinal wall does not have to be the same as that of the shear walls.

1.1.4 Order of Work

The soil-cement mix construction shall be performed first at the Lower Dam, then at the Upper Dam.

1.1.5 Earthwork

Earthwork, excavation and backfilling required for the construction of the soil-cement shear walls and longitudinal walls is covered in Section 02300 EARTHWORK.

1.1.6 Work Following Test Sections

Following the test sections, while awaiting the results of the testing performed for the test sections, the Contractor may proceed with production

soil-cement mix construction; however, he shall do so at his option and at his own risk. Shear walls and longitudinal walls that do not meet the specified strength and/or embedment requirements shall be supplemented by additional shear walls and/or elements as directed by the Contracting Officer. For failing shear walls, at a minimum, an additional intermediate shear wall having a minimum length of 25 feet shall be required. However, final configurations and lengths of additional walls and/or elements shall be as directed by the Contracting Officer as deemed necessary to ensure a safe structure. The supplemental soil-cement walls and elements shall meet all the strength and embedment requirements specified for the principal soil-cement mix construction and shall be constructed at no additional cost to the Government.

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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 31	(2003a) Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C 39	(2001) Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C 94	(2000) Standard Specifications for Ready-Mixed Concrete
ASTM C 109	(2002) Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens)
ASTM C 150	(2002; Rev A) Standard Specification for Portland Cement
ASTM C 939	(1997) Standard Test Method for Flow of Grout for Preplaced-Aggregate-Aggregate Concrete (Flow Cone Method)
ASTM C 1077	(2002) Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
ASTM D 1632	(1996) Standard Method of Making and Curing Soil-Cement Compression and Flexure Test Specimens in the Laboratory
ASTM D 1633	(2000) Standard Test Methods for Compressive Strength of Molded Soil-Cement Cylinders
ASTM D 2113	(1999) Practice for Diamond Core Drilling and Sampling for Site Investigation

ASTM D 4380	(1984; R 2001) Standard Test Method for Density of Bentonitic Slurries
ASTM D 5434	(1997) Field Logging of Subsurface Explorations of Soil and Rock

1.3 MEASUREMENT AND PAYMENT

1.3.1 Principal Soil-Cement Mixing

1.3.1.1 Measurement

a. Installation of soil-cement will be measured per cubic yard, to the nearest cubic yard, within the total "neat" plan area as shown on the drawings for each dam within which the shear walls and longitudinal walls are to be constructed. The "neat" plan areas to be used for measurement purposes are 76,639 square feet for the Lower Dam and 80,551 square feet for the Upper Dam. The volume will be determined by multiplying the above "neat" plan area for a dam by the average of the depths of all the soil-cement elements for the shear walls installed. The depth of each soil-cement element, to the nearest foot, shall be determined from the lowest full diameter flight, or cutting blade, on the shallowest, or shortest auger. The volume will be computed in cubic feet, then divided by 27 to determine cubic yards.

b. Quantities of soil-cement installed by the Contractor during remixing or in additional shear walls and/or soil-cement elements to supplement non-conforming elements, to achieve the specified performance and strength requirements, or that are outside the limits of soil-cement mixing shown on the drawings or on an approved Contractor-submitted plan without the acceptance of the Contracting Officer will not be measured for payment.

c. No separate measurement will be made for the Contractor's Quality Control Program, nor for the soil-cement mixing test sections, all of which shall be considered subsidiary work for performing soil-cement mixing.

1.3.1.2 Payment

Installation of soil-cement will be paid at the contract unit price per cubic yard bid in the schedule for the appropriate dam, and shall be considered to constitute full compensation for furnishing all equipment, materials, and labor required to install soil-cement in accordance with the specified strength requirements in accordance with the plan area configurations and coverages over the depths and limits shown on the drawings, or on an approved Contractor-submitted plan, and the requirements herein, including the soil-cement mixing test sections and implementing a Quality Control Program.

1.3.2 Additional Soil-Cement Mixing

1.3.2.1 General

The Government reserves the right to add additional total or partial length shear walls and/or soil-cement elements as may be deemed necessary to produce a safe structure. The additional soil-cement walls and elements shall meet all the strength and embedment requirements specified for the

principal soil-cement mix construction.

1.3.2.2 Measurement

a. Installation of additional soil-cement directed by the Contracting Officer will be measured per cubic yard, to the nearest cubic yard. The volume will be determined by multiplying the length of the shear wall or element(s) by the average wall width, W_a, as determined by the equation given in paragraph 2.2.1 Strength Criterion of this section and by the average of the depths of all the soil-cement elements installed in the individual structure. The depth of each soil-cement element, to the nearest foot, shall be determined from the lowest full diameter flight, or cutting blade, on the shallowest, or shortest, auger. The volume will be computed in cubic feet, then divided by 27 to determine cubic yards.

b. Quantities of soil-cement installed by the Contractor during remixing or in additional shear walls and/or soil-cement elements to supplement non-conforming elements or to achieve the specified performance and strength requirements, will not be measured for payment.

c. No separate measurement will be made for the Contractor's Quality Control Program, all of which shall be considered subsidiary work for performing additional soil-cement mixing.

1.3.2.3 Payment

Installation of additional soil-cement mixing will be paid at the contract unit price per cubic yard bid in the schedule, and shall be considered to constitute full compensation for furnishing all equipment, materials, and labor required to install additional soil-cement in accordance with the specified strength requirements in accordance with the plan area configurations over the depths and limits directed by the Contracting Officer, and the requirements herein, including the required Contractor's Quality Control.

1.3.3 Additional Wet Grab Samples

1.3.3.1 General
*5
The Government reserves the right to direct the taking of additional wet grab sample test sets (three samples) to ensure the specified strength requirements are being met. The samples shall be obtained and tested in accordance with paragraph 3.8.3.2 Wet Grab Soil-Cement Samples, hereinafter.

1.3.3.2 Measurement

Measurement of additional wet grab samples will be made on the basis of each wet grab sample test set (three samples) performed satisfactorily in accordance with the specifications.

1.3.3.3 Payment

Additional wet grab samples will be paid at the contract unit price per each bid in the schedule, and shall be considered to constitute full compensation for furnishing all equipment, materials, and labor to obtain, prepare, handle, store, and test the wet grab samples.

1.3.4 Additional Core Borings

1.3.4.1 General

The Government reserves the right to direct the performance of additional core borings to evaluate the homogeneity and continuity of soil-cement elements and to ensure the specified strength requirements are being met. The performance, sampling and testing of the core borings shall be in accordance with paragraph 3.8.3.3 Core Samples, of this section. It is emphasized that the requirements of subparagraph 3.8.3.3h shall apply to the performance of the additional core borings.

1.3.4.2 Measurement

Additional core borings will be measured for payment to the nearest foot, based upon the total length of core runs having a core recovery of 85 percent or greater. Supplemental core borings required to satisfy the requirements of subparagraph 3.8.3.3.h will not be measured for payment. All measurements for payment shall be made by or in the presence of the Contracting Officer.

1.3.4.3 Payment

Payment for additional core borings will be made at the contract unit price per linear foot bid in the schedule, and shall be considered to constitute full compensation for furnishing all equipment, materials, and labor required to perform the borings as specified, including the unconfined compression testing of the core samples. Payment will not be made for any core boring for which satisfactory records, as determined by the Contracting Officer, are not provided.

1.3.5 Interface Core Borings

1.3.5.1 Measurement

Interface core borings will be measured for payment to the nearest foot, based upon the total length of core runs having a core recovery of 85 percent or greater. The unsampled portions of the core borings will not be measured for payment. All measurements for payment shall be made by or in the presence of the Contracting Officer.

1.3.5.2 Payment

Payment for interface core borings will be made at the contract unit price per linear foot bid in the schedule, and shall be considered to constitute full compensation for furnishing all equipment, materials, and labor, required to perform the borings, as specified, including the unconfined compression testing of the core samples. Payment will not be made for any core boring for which satisfactory records, as determined by the Contracting Officer, are not provided.

1.4 DEFINITIONS

1.4.1 Soil-Cement

Uniformly blended mixture of cement grout and in-situ soils. The in-situ soils shall be cut and broken up by the augers and mixing paddles to be well graded fragments with a maximum dimension not to exceed 1/4 of the diameter of the auger or 9 inches whichever is smaller. The soil fragments shall be dispersed and evenly distributed throughout the mix.

1.4.2 Soil-Cement Element

A group of columns of soil-cement formed vertically by injecting cement grout and blending the grout with the in-situ soils by controlled mixing to create a homogeneous soil-cement mixture which, depending on the equipment, may consist of 2 to 4 columns.

1.4.3 Soil-Cement Shear Wall

A number of equal-diameter soil-cement elements that are continuously interconnected by overlapping of the soil-cement elements to form a continuous panel or wall that is perpendicular or close to perpendicular to the dam axis.

1.4.4 Soil-Cement Longitudinal Wall

A number of equal-diameter soil-cement elements that are continuously interconnected by overlapping of the soil-cement elements to form a continuous panel or wall that is parallel or close to parallel to the dam axis. The soil-cement longitudinal wall is located at the upstream end of the soil-cement shear walls.

1.4.5 Cement Factor

The dry weight of cement in pounds remaining in the ground after mixing divided by the volume measured in cubic yards of in-situ soil-cement.

1.4.6 Mixing Spoils

All materials including liquids, semi-solids, and solids that are discharged above ground surface during or as a result of soil-cement mixing.

1.4.7 Common Fill

Material excavated from the downstream berms and stockpiled for reuse in backfilling berms.

1.4.8 Quality Control Testing Laboratory

Independent party, retained by the Contractor, responsible for obtaining and/or testing soil-cement samples for quality control.

1.4.9 Installation Level

The ground surface level from which the soil-cement elements are installed.

1.4.10 Design Top Elevation

Top elevation of the soil-cement walls as shown on the drawings.

1.4.11 Unconfined Compressive Strength

Unconfined Compressive Strength - Compressive strength of specimen as determined by ASTM C 39, except as modified by paragraph 3.8 QUALITY CONTROL (QC) PROGRAM, hereinafter.

1.5 QUALIFICATIONS

1.5.1 Contractor

The Contractor performing deep soil-cement mixing shall be a specialist in the process and shall have at least 5 years of experience in deep soil-cement mixing comparable to the work of this project. Experience shall include projects with installations to depths of 40 feet or greater using overlapping soil-cement elements to create continuous soil-cement wall structures similar to those shown on the drawings. The Contractor shall have satisfactorily completed the construction of at least three to five such projects.

1.5.2 Field Superintendent

Soil-cement mixing field superintendents shall have a minimum 5 years' accumulated experience in deep soil-cement mixing, including installations to depths of 40 feet or greater using overlapping soil-cement elements to create continuous soil-cement shear walls or similar soil-cement structures. They shall be experienced in providing supervision of mix design and field control composition and mixing and placing and quality control testing of cement grout using deep soil-cement mixing equipment. Soil-cement mixing field superintendents shall be required continuously onsite, each shift of operation.

1.5.3 Soil-Cement Mixing Equipment Operator

Soil-cement mixing rig operators shall have a minimum 5 years' accumulated experience using similar equipment as that proposed for this project. The experience shall include projects to depths of 40 feet or greater using overlapping soil-cement elements to create continuous soil-cement shear walls or similar soil-cement structures.

1.5.4 Grout Mixing Plant Operator

Grout mixing plant operators shall have a minimum 3 years' accumulated experience in operating computer based cement grout mixing batch plants of comparable complexity to the equipment proposed for the work on this project.

1.5.5 Testing Laboratory

The independent Quality Control Testing Laboratory shall have at least 5 years' experience as a materials-testing laboratory including the performance of testing comparable to that required for this project. In addition, the laboratory shall have received an on-site inspection (not just a desk audit) and been validated by the Engineer Research and Development Center Materials Testing Center (MTC) under the Corps of Engineers laboratory inspection program. The laboratory shall be listed on the list of Corps of Engineers validated laboratories. The person in charge of the work for the Quality Control Testing Laboratory shall be a registered Professional Engineer. The Quality Control Testing Laboratory's supervisor and each field representative taking samples shall each have at least 1 year's accumulated experience in taking soil-cement samples in the field and performing compressive strength tests in accordance with ASTM requirements, as specified for this project, and/or meet the following requirements for certification under ASTM C 1077:

a. Supervising Technician shall have a minimum of 3 years; relevant experience and shall possess current technician certifications required by paragraphs 6.1.2 and 6.1.3 of ASTM C

1077. Laboratory Supervisor shall be certified as both an ACI Concrete Laboratory Testing Technician - Grade 1 and an ACI Concrete Field Testing Technician - Grade 1. Field Supervisor shall be certified as an ACI Concrete Field Testing Technician - Grade 1.

b. Testing Technicians shall possess current certifications required by paragraphs 6.1.4, 6.1.5, and 6.1.6 of ASTM C 1077 for Laboratory Technician or preferably, Field Technician. Laboratory Technician shall be certified as an ACI Concrete Laboratory Testing Technician - Grade 1. Field Technician shall be certified as an ACI Concrete Field Testing Technician - Grade 1.

Resumes for all Quality Control Testing Laboratory personnel shall be provided to the Contracting Officer for approval of proposed personnel.

1.6 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 will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Soil-Cement Mixing Construction; G, ED

Submit shop drawings, indicating the sequence and time schedule of all operations. Show the proposed soil-cement element layout to achieve the strength requirements of Paragraph 2.2 Soil-Cement and the required configurations shown on the drawings, including the diameters and overlap of soil-cement elements used to ensure the continuity of the soil-cement structure. The layout plans shall be of suitable scale to clearly show the details of the layout. Show baselines to be used for field layout, and number each soil-cement element for use in field records and quality control. Submit this information at least 40 calendar days prior to the start of test section construction; submit at least 40 calendar days prior to the start of production soil-cement construction..

Mixing Spoils; G, ED

Submit plans, sketches, and a narrative that describes the procedures to be used used to collect, contain and dispose of mixing spoils. The plans and sketches shall show the proposed locations of holding tanks, holding basins, or other temporary facilities required to manage the mixing spoils, and proposed configuration of water berms. Submit at least 40 calendar days prior to the start of test section construction; submit at least 40 calendar days prior to the start of production soil-cement construction.

SD-03 Product Data

Qualifications, Soil-Cement Mixing Contractor; G, ED

Submit, with the bid in accordance with the Special Contract Requirements of the contract, the following information:

a. Location, name, general description (scope of work) of at least three to a maximum of five contracts for similar size, complete with monetary value and date of completion.

b. Points of contact (names and telephone numbers) for all submitted references so individuals may be contacted for verification.

Qualifications, Soil-Cement Mixing Contractor Personnel; G, ED

Submit, within 15 calendar days following receipt of Notice to Proceed, resumes and other documentation that demonstrate the qualifications of each field superintendent, soil-cement mixing rig operator and grout mixing plant operator. Include contact name, telephone number, and description for each submitted project information.

Qualifications, Independent Quality Control Testing Laboratory; G, ED

Submit, within 15 calendar days following receipt of Notice to Proceed, name, address, phone number and point of contact and qualifications of the independent Quality Control Testing Laboratory. Also, submit resumes and other documentation that demonstrate the qualifications of the laboratory personnel that will be in charge of and that will be performing the soil-cement mix testing specified in these specifications. Include contact name, telephone number, and description for each submitted project information.

Mix Design; G, ED

Submit a soil-cement mix design including the cement type, cement source, source of water for mixing grout, cement chemical composition, water-cement ratio of the grout (by weight), any additives, and other pertinent details; cement-grout injection pressures and rates; and the estimated in-situ cement factor and 28-day compressive strength of the soil-cement. Submit design at least 40 calendar days prior to the start of test section construction.

Water; G, ED

If the source of water is not a source of potable water, submit water quality test data in accordance with ASTM C 94, Table 2, to demonstrate that the water will not have an adverse effect on the compressive strength of the soil-cement and grout. If the Contractor intends to use hydrants, note the locations of hydrants and procure appropriate permits. The Contractor shall abide by any and all regulations and other requirements governing such use. All costs related to obtaining and furnishing water shall be included in the contract unit price for soil-cement mixing. Submit information on source of water at least 40 calendar days prior to the start of test section construction.

Equipment; G, ED

Submit a list and description of all equipment to be used for the

soil-cement mix shear and longitudinal wall installations, including equipment capable of remixing non-conforming soil-cement. Include details of mixing tools that demonstrate the manner in which the tools create the required mixture of cement grout and in-situ soils. Include descriptions and catalog cut sheets of: mixing equipment with dimensions and capacities of equipment and components; instrumentation used to measure and the procedures to determine the horizontal and vertical alignments profiles of soil-cement elements; cement grout mixing equipment; pipelines; control equipment; and hoses and pumps. Include details of equipment to be used to obtain wet grab soil-cement samples. Submit information at least 40 calendar days prior to the start of test section construction.

Procedure; G, ED

Submit a procedure for soil-cement mixing, describing the proposed method to be used to achieve the design requirements. Submit at least 40 calendar days prior to the start of test section construction.

Revisions to Equipment/Procedures/Mix Design; G, ED

Submit revised equipment, procedures, mix design, and/or wall layout and soil-cement element numbering if the results of the test sections do not meet the specification requirements. The end stations of the remediated zones are to be no farther from the abutments than shown on the drawings. Changes in top and bottom wall elevations should occur as close as practicable to the stations shown on the drawings. Submittal should describe the changes made to equipment, procedures, and/or mix design to satisfy the requirements of the project specifications. Submit within 40 calendar days following completion of test sections.

SD-06 Test Reports

Daily Production Report; G, RE

Within one working day after the end of each work shift, submit a Daily Production Report for the work shift to the Contracting Officer. Fill out the Daily Production Report, check for correctness, and have it signed by the soil-cement mixing contractor's field superintendent and the general contractor's field superintendent at the end of each work shift. The reports shall contain, but not be limited to, the following information:

a. Day, month, year, time of beginning and end of work shift; name of each superintendent in charge of the work for both the soil-cement mixing contractor and the general contractor; a list of all workers' names associated with each soil-cement mixing rig; and a summary of equipment used during the shift.

b. The locations, installation sequence, and as-installed top and bottom elevations of the soil-cement elements installed during the work shift, and any deviations from the planned locations and vertical alignment.

c. Time of start and completion of each soil-cement element installed during the work shift and a summary of any downtime

during the shift including time of work stoppage, duration, reason, and if work stoppage occurred while mixing a soil-cement element.

d. Water-cement ratios of the cement grout, grout injection pressures and rates, quantities of cement, cement additives, and water used, estimated cement factors, mixing rotational speeds, penetration, and withdrawal rates of the mixing equipment, and mixing time at the bottom of the element for each soil-cement element. Include printouts of all automatic batch plant data coinciding with soil-cement element installation.

e. Other pertinent observations including, but not limited to, description of spoil returns, cement grout escapes, ground settlement and/or heave, collapses of the soil-cement element, remixing of elements, obstructions, and any unusual behavior of the equipment during the soil-cement mixing process.

f. Records of soil-cement samples taken during the work shift including sample designation, date, time, plan location, elevation, and the name of the firm and person(s) obtaining the samples.

Test Results; G, RE

A summary of soil-cement samples and cores taken and test results performed by the Quality Control Testing Laboratory personnel shall be compiled into a Daily Field Report and submitted to the Contracting Officer. A draft copy shall be submitted at the end of each day with a reviewed copy submitted after review and approval by the Quality Control Testing Laboratory Manager. Reviewed and approved laboratory test results shall be submitted within 2 working days of conducting the testing.

As-Built Plans and Test Data; G, ED

At the completion of both the test section and production soil-cement mixing, submit as-built plans showing the actual layout of the soil-cement element structures and a tabular and graphical summary of all laboratory test data collected by the Quality Control Testing Laboratory during the course of the work, as well as copies of all test reports prepared by the Quality Control Testing Laboratory. Submit information within 60 calendar days following completion of the test section construction; submit information within 60 calendar days following completion of production soil-cement construction.

1.7 OMITTED

1.8 GEOTECHNICAL SITE CONDITIONS

1.8.1 Exploratory Borings

Since the Clemson Upper and Lower Diversion Dams were constructed in 1960 and 1961, numerous borings have been performed off and on, related to seepage problems at the dams, for the design of concrete cutoff walls, and recent concerns about the loose foundation materials. In addition, subsurface data are available from installation logs of piezometers and monitoring wells. The borings included soil sampling of the dam embankment

materials and the original foundation alluvial soils and coring of the foundation bedrock. Locations of the borings, piezometers and monitoring wells which fall within this contract and those considered related to the contract are shown on the drawings. Logs of the borings and instrument installations are included in Appendix A. The Government assumes no responsibility for interpretation or deductions made by the Contractor from the logs and borings. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristics of the subsurface materials of the region are to be expected and, if encountered, will not be considered as differing materially within the purview of the DIFFERING SITE CONDITIONS clause of the contract. Soil classifications shown on the logs are the result of laboratory and/or field visual-manual classifications, supplemented in some instances by index testing.

1.8.2 Laboratory Testing

The results of all laboratory index testing performed for the present seismic evaluation study of the dams are included in Appendix B. There has been considerable laboratory testing performed for the dams related to the seepage problems, design of concrete cutoff walls, and recent studies regarding the loose foundation materials. Testing has included index tests, undrained and drained triaxial shear tests, direct shear tests, laboratory vane shear tests, and dispersive soil tests on soil samples and petrographic analyses and compression tests on rock cores. The results of the testing are included in the following reports:

USACE (1981) Design Memorandum 32, "Rehabilitation of Clemson Lower Diversion Dam, Volumes I and II."

USACE (1982) Design Memorandum 33, "Rehabilitation of Clemson Upper Diversion Dam."

GEI Consultants, Inc. (1994) "Seismic Evaluation of Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

GEI Consultants, Inc. (1995) "Supplemental Report for Seismic Evaluation of Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

GEI Consultants, Inc. (2002) "Design Summary Report, Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

The above reports are available for review and inspection at the Savannah District Office; to view the reports contact the Project Engineer, Ben Foreman at (912) 652-5370.

1.8.3 Groundwater

The normal full pool for the Hartwell Lake is elevation 660. Time-history plots and cross-section plots of reservoir and piezometric levels for the period December 1995 to January 2002 for both dams are included in Appendix C. The plots are from the 2002 Annual Embankment Instrumentation Report for the Clemson Diversion Dams. The entire report is available for review and inspection at the Savannah District Office; to review the report contact the Project Engineer, Ben Foreman at (912) 652-5370. Also included in the appendix are additional recent water level readings for the piezometers and monitoring wells at the dams. Additional piezometers were installed at both dams in June 2003. Details of the piezometers and water level readings are included in Appendix C.

PART 2 PRODUCTS

2.1 CEMENT GROUT

2.1.1 Portland Cement

Use Type I or II Portland cement conforming to ASTM C 150. Measure, handle, transport and store bulk cement in accordance with the manufacturer's recommendations. Transport and store cement to prevent damage to or degradation of the cement by moisture. Do not use material that has become caked due to moisture absorption. Cement containing lumps or foreign matter of a nature and in amounts that might be deleterious to the grouting operations shall not be used.

2.1.2 Composition

All cement shall be homogeneous in composition and properties and shall be manufactured using the same methods. Secure at least two sources of cement supply and provide documentation of the composition of the cement from each supplier. Throughout the course of the work, obtain cement from one plant and one supplier, retaining second supplier as backup source.

2.1.3 Water

2.1.3.1 Water Requirements

Use water that meets the requirements of ASTM C 94. The water shall be free from oil, acid, alkali, salts, organic materials, and/or other contamination that would reduce the strength of the hardened soil-cement elements or mixing grout. The water temperature shall be maintained between 40 degrees F and 75 degrees F.

2.1.3.2 Reservoir Water

Water from the reservoir, Lake Hartwell, can be utilized provided it is demonstrated that it meets the acceptance criteria of Table 2 of ASTM C 94 (see subsection 5.1.3.1). A number of samples of water from the reservoir have been obtained for chemical testing for design of the cutoff walls and this contract. Ground water samples were also obtained from each dam. Results of the chemical testing are included in Appendix D. Should water from the reservoir be utilized, the Contractor shall obtain a Temporary Water Withdrawal Permit from the Resource Manager, Lake Hartwell Project Office. The information required and details on obtaining the permit are given in Section 01500 TEMPORARY CONSTRUCTION FACILITIES. If the reservoir water is used, the Contractor shall take into account the effect of rainfall on the quality of the water in locating his intake line and the manner of withdrawal of the water.

2.1.4 Temperature of Grout

The Contractor shall take all necessary and appropriate means to assure that the temperature of the grout does not fall below 35 degrees F or exceed 90 degrees F.

2.1.5 Grout Admixtures

Grout admixtures shall not be allowed without the written approval of the Contracting Officer. If proposed, the Contractor shall provide a written

statement from the manufacturer as to the use of any such admixture, its effect on the soil-cement material, its long-term performance and stability, and its effect on the environment.

2.1.6 Initial Set

The grout shall not have begun its initial set before it is injected into the ground.

2.2 SOIL-CEMENT

2.2.1 Strength Criterion

The Contractor performing deep soil-cement mixing shall implement a soil-cement mix design and mixing procedure that will result in an average 28-day compressive strength, f'_{sc}, meeting the following criterion:

$f'_{sc} \geq 77.4$ psi x (S / W_a), where:

f'_{sc} = average 28-day compressive strength of soil-cement, psi.
S = soil-cement shear wall spacing (center to center), not to exceed 12.5 feet + maximum wall width.
W_a = average wall width = A/C (where C = center to center spacing of two adjacent augers and A is the area enclosed between the centerlines of the two adjacent augers). Not less than 2.4 feet (refer to illustration on Plate B-12).
The minimum wall width at element overlaps shall not be less than 1.9 feet.

*5
At least ~~five~~two soil-cement elements in each soil-cement shear wall shall be sampled and tested in accordance with paragraph 3.8 QUALITY CONTROL (QC) PROGRAM. The average 28-day compressive strength of the test samples from each soil-cement shear wall shall equal or exceed f'_{sc} computed using the above formula. No more than ~~two~~one wet grab sample~~s~~ ~~and two core samples~~ tested from each soil-cement shear wall shall have a 28-day compressive strength less than (2/3) x f'_{sc} computed using the above formula.

2.2.2 Wall Layout
*5
The wall layout shown on the drawings assumes an average wall width of 3.0 feet, a center-to-center spacing of 15.5 feet, and a 28-day unconfined compressive strength of 400 pounds per square inch. The wall layout shown on the drawings is for illustration purposes only, and does not imply that a 3-foot diameter auger will produce a wall having an average width of 3 feet. The above equation shall be used to calculate the required 28-day unconfined compressive strength for different wall widths and spacings.

2.2.3 Laboratory Mix Design Program

A laboratory mix design test program was performed to evaluate the strength and stiffness of grout-soil mixtures for selected samples of soils collected at the site. The results of the mix design test program are included in the Design Summary Report prepared by GEI Consultants, Inc. Excerpts from the Design Summary Report pertaining to the laboratory mix design test program are included in Appendix E. The entire report is available for review and inspection at the Savannah District Office; to review the report contact the Project Engineer, Ben Foreman at (912) 652-5370. The laboratory test results are made available for review and are solely for general information purposes and are not part of the

contract documents; no warranties or guarantees are implied.

PART 3 EXECUTION

3.1 GENERAL

The shear walls and longitudinal wall shall be constructed by mixing of in-situ soils and cement grout. The soil-cement columns shall be formed by at least two overlapping soil mixing shafts guided by a lead mounted on a crawler base machine. The mixing shafts shall be driven by a power source sufficient to provide torque for a wide range of drilling conditions and to maintain a continuous installation of soil-cement columns. The mixing augers shall be advanced into the soil, with grout being pumped through the hollow stem of the auger shafts and injected into the soil at the shaft tips. The auger flights and mixing blades on the shafts shall blend the soil with grout in pug mill fashion. When the design depth is reached, the mixing shafts shall be withdrawn while the mixing process is continued. The mixing shafts shall be positioned so as to overlap one another to form continuously mixed overlapping columns. After withdrawal, two (or more) overlapping soil-cement columns shall remain in the ground. The process shall then be repeated to form a continuous wall of overlapping columns. A full column overlap shall be performed between adjacent soil-cement elements, i.e., the auger shall fully repenetrate the outer soil-cement column of the previously installed element.

3.2 EQUIPMENT

The deep soil-cement mixing (DSM) equipment shall meet the following requirements:
*5

a. Multi-shaft mixing equipment (machines with at least two overlapping mixing shafts) shall be used for this project; single shaft mixing equipment is not allowed. The mixing shafts shall have mixing augers and blades (paddles) configured in such a manner so that they are capable of thoroughly blending the in-situ soils and grout to the appropriate depths. Auger flights and mixing paddles on a shaft shall extend to the full diameter of the element being formed, and shall have discontinuous lengths and be spaced to overlap with paddles of adjacent shafts in order to thoroughly break up the in-situ soils and blend them with injected cement grout to form a homogeneous mixture. The equipment and/or DSM column overlapping technique shall be configured so that the length of the overlapping mixing shafts extends for the full depth of the DSM wall. The power source for driving the mixing shafts shall be sufficient to maintain the appropriate revolutions per minute and penetration rate from a stopped position at the maximum depths required. Mixing equipment shall be capable of advancing through previously installed and hardened soil-cement, dense sand and gravel, and weathered rock. DSM equipment that slows to refusal levels in either dense sand and gravel or weathered rock before achieving the embedment lengths of > 4 feet below top of sand and gravel or > 2 feet into rock will be considered not in conformance with the requirements of this paragraph. Refusal at shallower embedments due to DSM equipment encountering unweathered bedrock or boulders will be considered to be consistent with the DSM equipment requirements of this paragraph and the embedment requirements of paragraph 3.3g of this section.

b. The DSM rig shall be equipped with electronic sensors built into the leads to determine vertical alignment in two directions: fore-aft and left-right. The output from the sensors shall be routed to a console that is visible to the operator and the Government personnel during penetration.

c. The DSM equipment shall be adequately marked to allow the Government personnel to confirm the penetration depth to within 6 inches during construction. Penetration depth markings shall be based on the lowest full diameter flight, or cutting blade, on the shallowest, or shortest auger.

d. Grout shall be pre-mixed in a mixing plant, which combines dry materials and water in predetermined proportions. The mixing plant shall consist of a high speed/high shear grout mixer, grout agitator, grout pumps, storage tanks, metering, proportioning (or weighing) equipment, and a computer control unit. The proportioning equipment may use meters, weights, or weight-volumes to ensure proper proportions. Positive displacement pumps shall be used to transfer the grout from the mixing plant to the augers. The grout pumps shall be capable of pumping the required distance and elevations to provide and maintain an adequate supply of grout to the mixing augers. The grout shall be delivered to each slurry-injecting auger by an individual positive displacement pump having an inline flow meter and pressure gage. The flow of grout through the auger shafts shall be verified prior to each stroke by observing the flow out of the mixing augers as they are suspended in the air above the soil-cement element. Any blockage in a mixing auger shall be cleared immediately upon discovery. When a blockage occurs while the augers are in an element, following clearance of the blockage, the augers shall be raised 15 feet above the depth at which the blockage occurred before recommencing soil-mixing.

e. All equipment shall have devices to permit accurate and continuous monitoring and control of: water-cement ratios, cement-grout injection pressures and quantities, mixing rotational speeds, advancement and withdrawal rates of the mixing tools, and other operations required to install and mix the soil-cement.

3.3 CONSTRUCTION, GENERAL

a. The DSM Contractor shall mobilize and maintain a sufficient number of soil-cement mixing rigs, materials, cement grout batching plants and crews to complete the specified work in accordance with the project schedule. The order of soil-mix construction shall be Lower Dam then the Upper Dam.

b. The Contractor shall perform all survey, layout and utility clearance required for the soil-cement mixing.

c. The Contractor shall provide spoil containment facilities and other measures necessary to protect and maintain the site in a workable condition.

d. Soil-cement mixing shall be performed only in the presence of the Contracting Officer's field representative.

e. Soil-cement elements for longitudinal walls shall extend to the elevations shown on the drawings.

f. Soil-cement elements for shear walls shall extend at least 4 feet into the sand and gravel stratum shown on the drawings. The 4-foot embedment shall be based on the lowest full-diameter flight, or cutting blade on the shallowest, or shortest auger. The Contracting Officer shall determine the elevation of the top of the sand and gravel stratum based on observations made while mixing each element. The bottom of the elements for shear walls shall be double-mixed by raising the mixing augers 10 feet off the bottom and then reinserting them for remixing.

g. If rock is encountered prior to obtaining a 4-foot embedment of the soil-cement element into the sand and gravel stratum, the soil-cement element shall be seated into the rock to provide intimate contact between the soil-cement element and the rock. Drilling into the rock shall be continued until a total embedment of 4 feet below the top of the sand and gravel stratum is obtained, an embedment of 2 feet into rock is obtained, or refusal of the augers, refusal being defined as a penetration rate of less than 1 foot per minute for 5 minutes.

h. Once mixing is started on a dam with an auger size, mixing design, mixing procedures, and wall spacing, these parameters shall be kept uniform for that dam unless the results of the Contractor's Quality Control (QC) program indicates that modifications are required to meet specification requirements. Different auger sizes, shear wall spacing, mixing design, and mixing procedures can be used on the Lower Dam from those used on the Upper Dam, provided that those parameters are kept constant on each dam and the requirements of the specifications are met.

3.4 INSTALLATION OF SOIL-CEMENT SHEAR AND LONGITUDINAL WALLS

3.4.1 Proper Location and Alignment

As a minimum, guide trenches and/or templates, and survey control shall be used to maintain proper horizontal location and alignment of the soil-cement mixing equipment.

3.4.2 Vertical Alignment Monitoring

The Contractor shall continuously monitor and adjust the vertical alignment of the soil-cement mixing equipment leads using electronic sensors that provide continuous measurements of vertical alignment displayed directly to the equipment operator.

3.4.3 Grout Injection Monitoring

The Contractor shall continuously monitor and control the grout injection rate, rotation speed, penetration rate, and withdrawal rates. The injection rates, rotation speed, penetration rate, and withdrawal rate shall be the same as used in the satisfactorily completed test section.

3.4.4 Mixing

Once mixing of a soil-cement element is started, continue the mixing operation until the soil-cement element is completed. If an interruption of more than 2 hours occurs, the element shall be remixed for the entire length of the element using the correct dosage of fresh grout, at no additional cost to the Government.

3.4.5 Sequencing

Mixing of soil-cement elements shall be sequenced such that previously mixed soil-cement elements are sufficiently soft to allow overlapping of soil-cement elements producing a continuous wall with the minimum specified width. A full column overlap shall be performed between adjacent soil-cement elements, i.e., the auger shall fully repenetrate the outer soil-cement column of the previously installed element.

3.4.6 Omitted

3.4.7 Debris

Debris shall not be allowed to enter the top of the soil-cement element while it is curing.

3.4.8 Potential for Discontinuity

If observations during installation of a soil-cement element indicate a potential for discontinuity of the element due to improper installation procedures, equipment problems or collapse of the surrounding soil, the soil-cement element shall be remixed to full depth, at no additional cost to the Government.

3.5 INSTALLATION TOLERANCES

3.5.1 Length and Width

Soil-cement element structures shall be installed to the lengths and locations shown on the drawings and approved submittals. Soil-cement shear walls shall have an average width of 2.4 feet or greater and a minimum width at element overlaps of 1.9 feet or greater. Soil-cement longitudinal walls shall have an average width of 2.4 feet or greater, and a minimum width at element overlaps of 1.9 feet or greater.

3.5.2 Horizontal Deviation

The maximum horizontal deviation of the as-installed center of any soil-cement element at the installation level shall not exceed 3 inches from the design center location shown on the Contractor's approved submittal.

3.5.3 Vertical Misalignment

The maximum horizontal deviation due to vertical misalignment of any soil-cement element shall not exceed 1 percent of the depth below the installation level.

3.6 CONTAINMENT, COLLECTION AND DISPOSAL OF SPOIL RETURN

3.6.1 Containment

Positive means shall be provided for containing all spoil return, flush water, and other waste materials within the immediate work area. Pipe or channel spoils material into holding ponds, tanks, or other retention structures or facilities. Incorporate all sedimentation and turbidity control measures required by applicable Federal, State and local regulations. Take all necessary precautions and implement measures to prevent any spoil return, other waste materials, or stockpiled materials from entering storm drain structures, drainage courses and other utility lines or from leaving the site via surface runoff.

3.6.2 Cleaning and Removing

In the event spoil return, waste materials, or stockpiled materials enter an area or facility outside the approved work area or mixing spoils storage area, the Contractor shall be responsible for immediately and completely cleaning and removing these materials to the approval of the Contracting Officer or the area of facility, at no additional cost to the Government.

3.6.3 Blending of Mixing Spoils

Mixing spoils may be blended with common fill used to reconstruct the berm on each dam provided the mixing spoils do not adversely affect the Contractor's ability to meet the placement and compaction requirements for the fill. Fill comprised of mixing spoils and common fill shall meet the requirements of Section 02300 EARTHWORK. As shown on the drawings no mixing spoils or soils with mixing spoils shall be used in the outer 12 inches of the reconstructed berm.

3.6.4 Disposal of Mixing Spoils

Mixing spoils shall be disposed of off-site by the Contractor in accordance with all applicable laws and regulations at no additional cost to the Government if blending the mixing spoils with common fill prevents the common fill from being placed and compacted in accordance with the specifications. If blending the mixing spoils with common fill proves satisfactory, then excess mixing spoils remaining at the completion of the required work may be placed in waste berms constructed along the toe of each dam. The waste berms shall be constructed in accordance with the requirements specified on the drawings and in these specifications.

3.7 TEST SECTIONS

The test sections for the soil-cement walls shall be installed as shown on the drawings and in accordance with Section 02241 SOIL-CEMENT MIXING TEST SECTIONS.

3.8 QUALITY CONTROL (QC) PROGRAM

3.8.1 General

In accordance with the contract clause titled "Inspection of Construction" and Section 01451A CONTRACTOR QUALITY CONTROL, the Contractor shall establish and maintain quality control for the operations covered under this section to assure complete and strict compliance with contract requirements and to maintain and provide records of his quality control for all the operations.

3.8.2 Control Procedures

The Contractor shall implement procedures to monitor, control, and document shear wall and longitudinal wall locations (horizontal and vertical), shear wall and longitudinal wall vertical alignments, water-cement ratios, cement factors, cement-grout injection pressures and quantities, mixing rotational speeds, penetration and withdrawal rates of the mixing equipment; horizontal and vertical alignments of the soil-cement elements and other related aspects of the soil-cement mixing process. Document these procedures in a Daily Production Report as described in paragraph 1.6 SUBMITTALS.

3.8.3 Sampling and Testing

Sampling and testing to provide for quality control shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government. The Contractor shall retain an independent Quality Control Testing Laboratory to obtain and/or perform testing on grout and soil-cement samples, and report the laboratory test results in accordance

with applicable ASTM standards and the requirements specified. The Contractor shall perform the following testing to assure that the soil-cement mixing complies with the specifications. The numbers and frequencies of testing listed below are minimums; the Contractor shall perform additional sampling and testing, as directed by the Contracting Officer, if test results or observations during installations indicate the soil-cement mixing to be of marginal quality.

3.8.3.1 Grout

a. The soil-cement mixing Contractor shall implement procedures to ensure that the grout is prepared, mixed, and injected in a manner that is consistent with the methods used for the successful test section installation. The Contractor shall test the grout unit weight in accordance with ASTM D 4380 and the grout time of eflux in accordance with ASTM C 939 at the beginning of each grout batch and at least once per each soil cement shear wall. The Marsh funnel manufactured by Baroid may be substituted for the flow cone.

b. At least three sets of three (3) mortar cubes shall be obtained per each day, or shift, whichever is more frequent, in accordance with ASTM C 109, at the beginning of grout mixing operations, and whenever grout components (cement, admixtures, water) are changed either by source or by proportion. The compressive strength of the cubes at 7, 14, and 28 days shall be determined in accordance with ASTM C 109.

3.8.3.2 Wet Grab Soil-Cement Samples

a. The Contractor shall obtain two sets of wet grab soil-cement samples from each shear wall, but not less than one set per work shift per rig, at locations selected by the Contracting Officer. Each set of soil-cement samples shall consist of one sample about 2 feet below the top of the alluvium, one sample at about the middle of the alluvium and one sample at about 2 feet from the bottom of the alluvium, all obtained from the same soil-cement element. Alternative depths shall be sampled if the Contracting Officer so directs. For the purposes of testing, longitudinal wall sections will be considered part of the closest shear wall and may be selected as locations for samples representative of the closest shear wall. Sample locations will be selected that are representative of the lowest cement factors, for example, the middle auger location where a multiple auger rig has been used.

b. The Contractor shall obtain additional wet grab sample test sets (three samples) if so directed by the Contracting Officer.

c. Both the set of three soil-cement samples shall be retrieved and all the test cylinders shall be prepared within 60 minutes of the withdrawal of the mixing equipment from the soil-cement element. The device used to retrieve the wet grab soil-cement samples shall be a hydraulically or mechanically operated device capable of obtaining a discrete fluid sample of soil-cement at a pre-determined depth and shall be capable of accepting lumps of soils not thoroughly mixed that are up to 6 inches in dimension. The sampler shall be lowered empty, air only, to the required depth in the soil-cement element and then opened. Once filled with the soil-cement, the sampler shall be closed to exclude entry or loss of soil-cement and be expeditiously raised to the ground surface.

d. Each retrieved soil-cement sample shall be of sufficient volume to produce a minimum of four full cylinders (6-inch diameter by 12-inch

height). The entire sample shall be passed through a 1 inch sieve, and any particles retained on the sieve shall be cut to a size that will just pass the 1-inch sieve and then be returned to the sample from which the four cylinders will be formed immediately.

e. All soil-cement samples shall be formed, preserved, and cured in accordance with ASTM C 31, except that the samples shall be cured in accordance with paragraph 10.1 of ASTM D 1632. The samples shall be placed in a moist room as soon as practical; the samples may have to remain molded for several days depending on the strength. Extra care shall be exercised in transporting the samples. Protect soil-cement samples from freezing and extreme weather conditions at all times.

f. The soil-cement cylinders shall be tested for unconfined compressive strength in accordance with ASTM C 39, except that (1) specimens shall be immersed in water for 4 hours prior to testing in accordance with paragraph 6.3 of ASTM D 1633, (2) specimens shall be capped in accordance with ASTM C 617 utilizing high strength gypsum plaster, and (3) a loading rate of 20 plus or minus 10 psi/sec. shall be used. Unless directed otherwise by the Contracting Officer, test one cylinder at 7 days, two cylinders at 28 days, and one cylinder at 56 days. Submit the laboratory test results to the Contracting Officer in accordance with this section

3.8.3.3 Core Samples

a. The Contractor shall take core samples, for the purpose of testing in-situ samples of the soil-cement, from any production soil-cement shear wall where the soil-cement strengths from the wet grab samples do not meet the specified strength criteria. The coring of the soil-cement shall be performed in accordance with ASTM D 2113 and the requirements stated herein.

b. Continuous core samples shall be obtained at two separate locations designated by the Contracting Officer in the shear wall and over the entire depth of the shear wall and at least 2.5 feet into the underlying strata. Minimum diameter of the core samples shall be 3.0 inches.

c. The Contractor shall perform additional core borings, as directed by the Contracting Officer, to evaluate the homogeneity and continuity of soil-cement elements and to ensure the specified strength requirements are being met.

d. Drilling of the core samples shall be by any conventional or wireline rotary rock core drilling method performed in accordance with ASTM D 2113 that will provide continuous and complete cores of the specified diameter. The method used shall provide equally good recovery of cores from materials varying in hardness from very soft to soft rock-like material (soil-cement) to sound, hard rock. The soil-cement is heterogeneous, brittle and variable in strength. Furthermore, the hardeners can vary considerably throughout a single core boring. The method shall provide a core recovery of 85 percent or greater. The driller shall operate his drill at such speeds and with such down pressures and shall control drill fluid pressures and quantities to ensure maximum core quality and recovery in whatever hardness material is encountered. The driller shall exercise particular care in recording zones of water loss, cavities, rod jerks, rough drilling and other unusual and non-ordinary coring experiences that, supplementing the core record, could shed light on the nature and the extent of any abnormalities. It is emphasized that the core drilling method is up to the driller; however, as information, the following methods and drilling features have been used successfully in the coring of soil-cement

construction:

Experienced drillers
Wireline
Triple tube coring equipment
Very coarse diamond coring bit - 15 to 20 stones per carat
Side discharge bit
Lubrication of inside surface of sample tube

Each of the core boring shall be monitored and logged by an experienced engineer or geologist drilling inspector. A boring log shall be prepared in accordance with ASTM D 2113 and ASTM D 5434. An example of a core log for soil-cement is included at the end of this section.

e. Following completion of the drilling, the borehole shall be grouted to the top with an approved grout using the pressure injected tremie grouting method.

f. Immediately after retrieving the soil-cement core samples from a specific boring, wrap and seal (to prevent moisture loss) at least six (6) core samples per boring, selected by the Contracting Officer, to be submitted to the Quality Control Testing Laboratory for unconfined compression testing. The core samples shall be tested in accordance with ASTM C 39, except that the cores shall be field cured, transported, lab cured, immersed, capped, and loaded at the same loading rate, as specified for the wet grab soil-cement samples in paragraphs 3.8.3.2e and 3.8.3.2f above.

g. Remaining core samples shall be boxed, labeled, stored and preserved until completion of the soil-cement mixing. Upon completion of the project, the core samples shall be delivered to the Contracting Officer in accordance with ASTM D 2113. The core samples shall be protected from freezing and extreme weather conditions at all times.

h. For each core boring in which there is not at least 85 percent core recovery in each core run, the Contractor shall perform an adjacent supplemental core boring, location as directed by the Contracting Officer, down through the depth of the lowest "failing" core run. The additional borings and core sampling and unconfined compression testing shall be performed at no additional cost to the Government.

3.8.3.4 Soil-Cement Bedrock Interface Core Samples

a. Where the soil-cement wall does not penetrate at least 4 feet (based on the lowest full-diameter flight, or cutting blade on the shallowest, or shortest auger) below the top of the sand and gravel stratum underlying the alluvium, or at least 2 feet into rock, the Contractor shall perform core borings across the soil-cement/bedrock interface using the methods specified in paragraph 3.8.3.3 above, except that no core samples are required to a depth of 10 feet above the top of the sand and gravel stratum. The locations and number of borings shall be as directed by the Contracting Officer. The purpose of the interface core borings is to verify that the entire area of the soil-cement element(s) is in intimate contact with the bedrock. The Contractor shall anticipate that at least two (2) interface core borings will be performed per 50 feet of wall where the embedment/penetration is as described above. Penetration depth below the top of the sand and gravel will be evaluated by the Contracting Officer based on either adjacent soil borings or on the penetration resistance exhibited by the soil-mix equipment. Interface core samples shall be taken

as soon as feasible so that corrective measures can be implemented, if necessary, in a timely manner.

b. The interface cores shall be obtained with a core barrel having a length of at least 5 feet, and shall extend across the interface to include the bottom 2.0 feet of the soil-cement wall, as determined by the soil-mix auger penetration, and at least 2.0 feet of the underlying bedrock. Longer 10-foot cores shall be taken if recoveries are less than 85 percent. Interface core samples from the test section shear walls and production shear walls will be examined and tested to verify that:

1. The soil-cement wall is in intimate contact with the bedrock.

2. The soil-cement quality at the bottom of the wall is consistent with the strength criteria. Two core samples will be selected by the Contracting Officer from each interface core boring to be submitted to the Quality Control Testing Laboratory for unconfined compression testing. The core samples shall be tested in accordance with ASTM C 39.

c. Additional interface cores shall be taken for testing, at the direction of the Contracting Officer, if the initial interface cores do not clearly demonstrate intimate contact between the soil-cement wall and bedrock, or if the soil-cement immediately above the bedrock does not meet the strength criteria.

3.9 ACCEPTANCE OF PRODUCTION SOIL-CEMENT WALLS

3.9.1 Acceptance of Shear Walls and Longitudinal Walls

a. The Contracting Officer will review and evaluate soil-cement shear walls and longitudinal walls for acceptance based on the conformance of the QC data and installation procedures to the requirements of these specifications. Interpretation and evaluation of QC data for acceptance of soil-cement shear walls and longitudinal walls will be at the sole discretion of the Contracting Officer.

b. If the wet grab sample QC data and subsequent strength data from core samples do not meet the requirements of paragraph 2.2 SOIL-CEMENT for a shear (and longitudinal) wall, the shear wall shall be supplemented by additional shear walls and elements as specified below.

c. Furthermore, the acceptability of the shear and longitudinal walls will be evaluated with respect to the recovery and quality of the core samples. Lack of core recovery will be interpreted by the Contracting Officer as indicative of zones of soil-cement with inadequate strengths and/or a poorly mixed soil element. Shear walls having both an initial core boring and a supplemental core boring (boring required by paragraph 3.8.3.3h) with a core recovery below 85 percent in any individual core run shall also be supplemented by additional shear walls and elements as specified below.

d. Shear walls in which the embedment is insufficient as described in paragraph 3.8.3.4.a as demonstrated by interface core borings specified in the same paragraph shall also be supplemented by additional shear walls and elements as specified below.

e. For "failing" shear walls and longitudinal walls as described in the paragraphs above, at a minimum, an additional intermediate shear wall having a minimum length of 25 feet shall be required. However,

final configurations and lengths of additional walls and/or elements shall be as directed by the Contracting Officer as deemed necessary to ensure a safe structure. The supplemental soil-cement walls and elements shall meet all the strength and embedment requirements specified for the principal soil-cement mix construction and shall be constructed at no additional cost to the Government.

3.10 CLEANUP

The Contractor shall remove and dispose of all excess soil, grout, soil-cement, and other spoil or waste from the site at no additional cost to the Government. The excavations into the berms required for construction of the shear walls and longitudinal walls shall be backfilled in accordance with the requirements of Section 02300 EARTHWORK and the drawings.

-- End of Section --

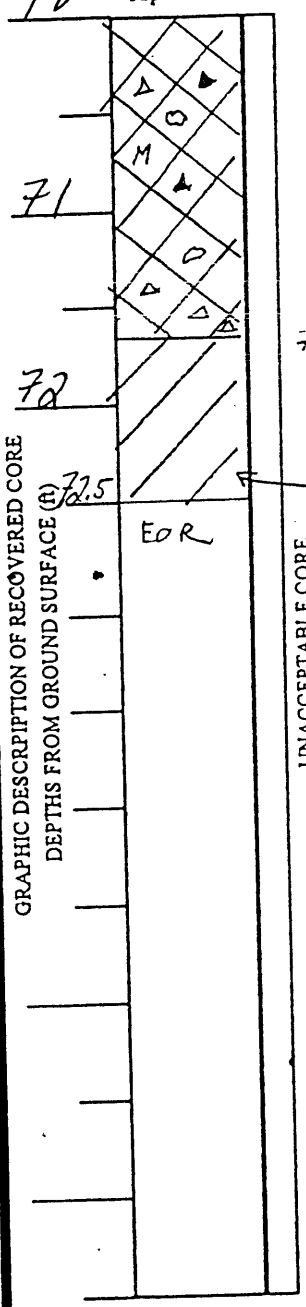
CA/T C09A7 CORE LOG - SOIL CEMENT- SCIC

Location Cell 1 Rig M250 Boring No. Butt. 8-B-13

[redacted] Field Rep. C. Toscano Date 6/2/98 Time 1635-1645

Ground Surface El. — Core Run C13 Depths 70 - 72.5

GRAPHIC DESCRIPTION OF RECOVERED CORE
DEPTHS FROM GROUND SURFACE (ft)



Description of Features Depicted

Very soft olive gray soil-cement, w/ traces of medium to soft soil-cement fragments.

71.75'

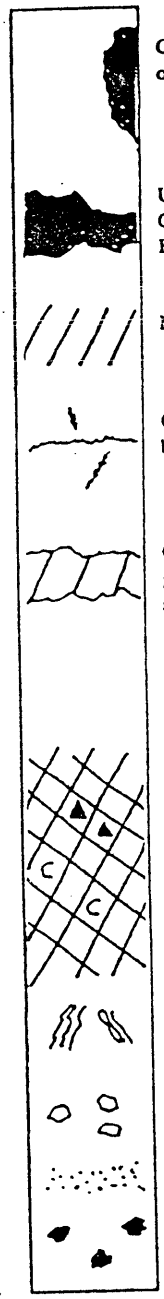
TRACES of coarse to fine gravel, silt.

No Recovery

UNACCEPTABLE CORE

PP = .75 TSF

Legend



Drilling Company [redacted] Driller [redacted] Core Barrel Size TTPQ

Down Pressure ~~(psi)~~ — Core Rate (min/ft) 4 Recovery (in) 21

RQD (in) 0 SCQD (in) 0 #/Size Grout Bags — Gallons Cement Grout —

[redacted]

REVIEWED

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02241R

*4 SOIL-CEMENT MIXING TEST SECTIONS

02/03

PART 1 GENERAL

1.1 DESCRIPTION OF WORK
1.1.1 General
1.1.2 Wall Dimensions
1.1.2.1 Shear Walls
1.1.3 Pretest Exploratory Borings
1.1.4 Order of Work
1.1.5 Earthwork
1.1.6 Excavation and Backfilling for Test Sections
1.2 REFERENCES
1.3 MEASUREMENT AND PAYMENT
1.4 DEFINITIONS
1.4.1 Soil-Cement
1.4.2 Soil-Cement Element
1.4.3 Soil-Cement Shear Wall
1.4.4 Soil-Cement Longitudinal Wall
1.4.5 Cement Factor
1.4.6 Mixing Spoils
1.4.7 Common Fill
1.4.8 Quality Control Testing Laboratory
1.4.9 Installation Level
1.4.10 Design Top Elevation
1.4.11 Unconfined Compressive Strength
1.5 QUALIFICATIONS
1.5.1 Contractor
1.5.2 Field Superintendent
1.5.3 Soil-Cement Mixing Equipment Operator
1.5.4 Grout Mixing Plant Operator
1.5.5 Testing Laboratory
1.6 SUBMITTALS
1.7 OMITTED
1.8 GEOTECHNICAL SITE CONDITIONS
1.8.1 Exploratory Borings
1.8.2 Laboratory Testing
1.8.3 Groundwater

PART 2 PRODUCTS

2.1 CEMENT GROUT
2.1.1 Portland Cement
2.1.2 Composition
2.1.3 Water
2.1.3.1 Water Requirements
2.1.3.2 Reservoir Water
2.1.4 Temperature of Grout
2.1.5 Grout Admixtures
2.1.6 Initial Set

2.2 SOIL-CEMENT
2.2.1 Strength Criterion
2.2.2 Wall Layout
2.2.3 Laboratory Mix Design Program

PART 3 EXECUTION

3.1 GENERAL
3.2 EQUIPMENT
3.3 CONSTRUCTION, GENERAL
3.4 INSTALLATION OF SOIL-CEMENT TEST SECTION SHEAR WALLS
3.4.1 Proper Location and Alignment
3.4.2 Vertical Alignment Monitoring
3.4.3 Grout Injection Monitoring
3.4.4 Mixing
3.4.5 Sequencing
3.4.6 Omitted
3.4.7 Debris
3.4.8 Potential for Discontinuity
3.4.9 Drilling to Auger Refusal
3.4.10 Exploratory Excavation
3.5 INSTALLATION TOLERANCES
3.5.1 Length and Width
3.5.2 Horizontal Deviation
3.5.3 Vertical Misalignment
3.6 CONTAINMENT, COLLECTION AND DISPOSAL OF SPOIL RETURN
3.6.1 Containment
3.6.2 Cleaning and Removing
3.6.3 Blending of Mixing Spoils
3.6.4 Disposal of Mixing Spoils
3.7 OMITTED
3.8 QUALITY CONTROL (QC) PROGRAM
3.8.1 General
3.8.2 Control Procedures
3.8.3 Sampling and Testing
3.8.3.1 Grout
3.8.3.2 Wet Grab Soil-Cement Samples
3.8.3.3 Core Samples
3.8.3.4 Soil-Cement Bedrock Interface Core Samples
3.9 ACCEPTANCE OF TEST SECTION SOIL-CEMENT WALLS
3.10 CLEANUP

-- End of Section Table of Contents --

CEGS-02241R (02/03)

SECTION 02241R

*4 SOIL-CEMENT MIXING TEST SECTIONS
02/03

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

1.1.1 General
*5

The work covered by this section consists of furnishing all plant, labor, equipment and materials and performing all operations in connection with the construction of soil-cement test sections to demonstrate that the Contractor's proposed equipment and procedures meet the specified requirements. Two test section shear walls shall be installed on each of the Upper and Lower Diversion Dams. The test section shear walls shall be installed at the locations shown on the drawings after the existing embankment berm is excavated as required at the test section locations. The Government reserves the right to change the locations of the test sections from those shown on the drawings; however, if it does so, the revised locations will be provided to the Contractor before he commences any excavation for the test sections.

1.1.2 Wall Dimensions

1.1.2.1 Shear Walls

The layout and spacing of the shear walls shown on the drawings assumes an average shear wall width of 3 feet and a shear wall spacing (center to center) of 15.5 feet. The Contractor may propose different average wall thicknesses to match his equipment provided either the compressive strength of the soil-cement or the wall spacing is adjusted in accordance with paragraph 2.2 SOIL-CEMENT of these specifications. Shear walls shall have an average width of 2.4 feet or greater and a minimum width at element overlaps of 1.9 feet or greater. The end stations of the remediated zones are to be no farther from the abutments than shown on the drawings.

1.1.3 Pretest Exploratory Borings

The Contractor shall perform five (5) borings along each test section shear wall. The borings will be used to judge the ability to detect the sand and gravel stratum with the soil-mix augers and to determine the type of material in which the augers meet refusal.

1.1.4 Order of Work

The soil-cement mix construction shall be performed first at the Lower Dam, then at the Upper Dam.

1.1.5 Earthwork

Earthwork, excavation and backfilling required for the construction of the soil-cement shear walls and longitudinal walls is covered in Section 02300 EARTHWORK.

1.1.6 Excavation and Backfilling for Test Sections

a. Excavation of the berm shall be as required to satisfactorily carry out the soil-cement mixing test sections. Dewatering will probably be required for performance of the test sections. Excavations shall be performed in the dry; refer to Section 02140 DEWATERING for dewatering requirements.

b. Following completion of all construction work, testing, and coring required for a test section the excavation can remain open, or be backfilled, at the Contractor's option. The excavation can be backfilled with the excavated materials.

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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 31	(2003a) Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C 39	(2001) Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C 94	(2000) Standard Specifications for Ready-Mixed Concrete
ASTM C 109	(2002) Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens)
ASTM C 150	(2002; Rev A) Standard Specification for Portland Cement
ASTM C 939	(1997) Standard Test Method for Flow of Grout for Preplaced-Aggregate-Aggregate Concrete (Flow Cone Method)
ASTM C 1077	(2002) Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
ASTM D 1586	(1984; R 1992) Penetration Test and Split-Barrel Sampling for Soils
ASTM D 1632	(1996) Standard Practice for Making and Curing Soil-Cement Compression and Flexure Test Specimens in the Laboratory
ASTM D 1633	(2000) Standard Test Methods for Compressive Strength of Molded Soil-Cement Cylinders

ASTM D 2113	(1999) Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation
ASTM D 4380	(1984; R 2001) Standard Test Method for Density of Bentonitic Slurries
ASTM D 5434	(1997) Field Logging of Subsurface Explorations of Soil and Rock

1.3 MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for any work related to the soil-cement mixing test sections, but all costs for such work shall be considered incidental to and included in the applicable contract unit prices bid for the soil stabilization by soil-cement mixing for the appropriate dam.

1.4 DEFINITIONS

1.4.1 Soil-Cement

Uniformly blended mixture of cement grout and in-situ soils. The in-situ soils shall be cut and broken up by the augers and mixing paddles to be well graded fragments with a maximum dimension not to exceed 1/4 of the diameter of the auger or 9 inches whichever is smaller. The soil fragments shall be dispersed and evenly distributed throughout the mix.

1.4.2 Soil-Cement Element

A group of columns of soil-cement formed vertically by injecting cement grout and blending the grout with the in-situ soils by controlled mixing to create a homogeneous soil-cement mixture which, depending on the equipment, may consist of 2 to 4 columns.

1.4.3 Soil-Cement Shear Wall

A number of equal-diameter soil-cement elements that are continuously interconnected by overlapping of the soil-cement elements to form a continuous panel or wall that is perpendicular or close to perpendicular to the dam axis.

1.4.4 Soil-Cement Longitudinal Wall

A number of equal-diameter soil-cement elements that are continuously interconnected by overlapping of the soil-cement elements to form a continuous panel or wall that is parallel or close to parallel to the dam axis. The soil-cement longitudinal wall is located at the upstream end of the soil-cement shear walls.

1.4.5 Cement Factor

The dry weight of cement in pounds remaining in the ground after mixing divided by the volume measured in cubic yards of in-situ soil-cement.

1.4.6 Mixing Spoils

All materials including liquids, semi-solids, and solids that are

discharged above ground surface during or as a result of soil-cement mixing.

1.4.7 Common Fill

Material excavated from the downstream berms and stockpiled for reuse in backfilling berms.

1.4.8 Quality Control Testing Laboratory

Independent party, retained by the Contractor, responsible for obtaining and/or testing soil-cement samples for quality control.

1.4.9 Installation Level

The ground surface level from which the soil-cement elements are installed.

1.4.10 Design Top Elevation

Top elevation of the soil-cement walls as shown on the drawings.

1.4.11 Unconfined Compressive Strength

Unconfined Compressive Strength - Compressive strength of specimen as determined by ASTM C 39, except as modified by paragraph 3.8 QUALITY CONTROL (QC) PROGRAM, hereinafter.

1.5 QUALIFICATIONS

1.5.1 Contractor

The Contractor performing deep soil-cement mixing shall be a specialist in the process and shall have at least 5 years of experience in deep soil-cement mixing comparable to the work of this project. Experience shall include projects with installations to depths of 40 feet or greater using overlapping soil-cement elements to create continuous soil-cement wall structures similar to those shown on the drawings. The Contractor shall have satisfactorily completed the construction of at least three to five such projects.

1.5.2 Field Superintendent

Soil-cement mixing field superintendents shall have a minimum 5 years' accumulated experience in deep soil-cement mixing, including installations to depths of 40 feet or greater using overlapping soil-cement elements to create continuous soil-cement shear walls or similar soil-cement structures. They shall be experienced in providing supervision of mix design and field control composition and mixing and placing and quality control testing of cement grout using deep soil-cement mixing equipment. Soil-cement mixing field superintendents shall be required continuously onsite, each shift of operation.

1.5.3 Soil-Cement Mixing Equipment Operator

Soil-cement mixing rig operators shall have a minimum 5 years' accumulated experience using similar equipment as that proposed for this project. The experience shall include projects to depths of 40 feet or greater using overlapping soil-cement elements to create continuous soil-cement shear walls or similar soil-cement structures.

1.5.4 Grout Mixing Plant Operator

Grout mixing plant operators shall have a minimum 3 years' accumulated experience in operating computer based cement grout mixing batch plants of comparable complexity to the equipment proposed for the work on this project.

1.5.5 Testing Laboratory

The independent Quality Control Testing Laboratory shall have at least 5 years' experience as a materials-testing laboratory including the performance of testing comparable to that required for this project. In addition, the laboratory shall have received an on-site inspection (not just a desk audit) and been validated by the Engineer Research and Development Center Materials Testing Center (MTC) under the Corps of Engineers laboratory inspection program. The laboratory shall be listed on the list of Corps of Engineers validated laboratories. The person in charge of the work for the Quality Control Testing Laboratory shall be a registered Professional Engineer. The Quality Control Testing Laboratory's supervisor and each field representative taking samples shall each have at least 1 year's accumulated experience in taking soil-cement samples in the field and performing compressive strength tests in accordance with ASTM requirements, as specified for this project, and/or meet the following requirements for certification under ASTM C 1077:

a. Supervising Technician shall have a minimum of 3 years; relevant experience and shall possess current technician certifications required by paragraphs 6.1.2 and 6.1.3 of ASTM C 1077. Laboratory Supervisor shall be certified as both an ACI Concrete Laboratory Testing Technician - Grade 1 and an ACI Concrete Field Testing Technician - Grade 1. Field Supervisor shall be certified as an ACI Concrete Field Testing Technician - Grade 1.

b. Testing Technicians shall possess current certifications required by paragraphs 6.1.4, 6.1.5, and 6.1.6 of ASTM C 1077 for Laboratory Technician or preferably, Field Technician. Laboratory Technician shall be certified as an ACI Concrete Laboratory Testing Technician - Grade 1. Field Technician shall be certified as an ACI Concrete Field Testing Technician - Grade 1.

Resumes for all Quality Control Testing Laboratory personnel shall be provided to the Contracting Officer for approval of proposed personnel.

1.6 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 will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Soil-Cement Mixing Construction; G, ED

Submit shop drawings, indicating the sequence and time schedule of all operations. Show the proposed soil-cement element layout to achieve the strength requirements of Paragraph 2.2 Soil-Cement and the required configurations shown on the drawings, including the diameters and overlap of soil-cement elements used to ensure the

continuity of the soil-cement structure. The layout plans shall be of suitable scale to clearly show the details of the layout. Show baselines to be used for field layout, and number each soil-cement element for use in field records and quality control. Submit this information at least 40 calendar days prior to the start of test section construction; submit at least 40 calendar days prior to the start of production soil-cement construction..

Mixing Spoils; G, ED

Submit plans, sketches, and a narrative that describes the procedures to be used to collect, contain and dispose of mixing spoils. The plans and sketches shall show the proposed locations of holding tanks, holding basins, or other temporary facilities required to manage the mixing spoils, and proposed configuration of waste berms. Submit at least 40 calendar days prior to the start of test section construction; submit at least 40 calendar days prior to the start of production soil-cement construction.

SD-03 Product Data

Qualifications, Soil-Cement Mixing Contractor; G, ED

Submit, with the bid in accordance with the Special Contract Requirements of the contract, the following information:

a. Location, name, general description (scope of work) of at least three to a maximum of five contracts for similar size, complete with monetary value and date of completion.

b. Points of contact (names and telephone numbers) for all submitted references so individuals may be contacted for verification.

Qualifications, Soil-Cement Mixing Contractor Personnel; G, ED

Submit, within 15 calendar days following receipt of Notice to Proceed, resumes and other documentation that demonstrate the qualifications of each field superintendent, soil-cement mixing rig operator and grout mixing plant operator. Include contact name, telephone number, and description for each submitted project information.

Qualifications, Independent Quality Control Testing Laboratory; G, ED

Submit, within 15 calendar days following receipt of Notice to Proceed, name, address, phone number and point of contact and qualifications of the independent Quality Control Testing Laboratory. Also, submit resumes and other documentation that demonstrate the qualifications of the laboratory personnel that will be in charge of and that will be performing the soil-cement mix testing specified in these specifications. Include contact name, telephone number, and description for each submitted project information.

Mix Design; G, ED

Submit a soil-cement mix design including the cement type, cement

source, source of water for mixing grout, cement chemical composition, water-cement ratio of the grout (by weight), any additives, and other pertinent details; cement-grout injection pressures and rates; and the estimated in-situ cement factor and 28-day compressive strength of the soil-cement. Submit design at least 40 calendar days prior to the start of test section construction.

Water; G, ED

If the source of water is not a source of potable water, submit water quality test data in accordance with ASTM C 94, Table 2, to demonstrate that the water will not have an adverse effect on the compressive strength of the soil-cement and grout. If the Contractor intends to use hydrants, note the locations of hydrants and procure appropriate permits. The Contractor shall abide by any and all regulations and other requirements governing such use. All costs related to obtaining and furnishing water shall be included in the contract unit price for soil-cement mixing. Submit information on source of water at least 40 calendar days prior to the start of test section construction.

Equipment; G, ED

Submit a list and description of all equipment to be used for the soil-cement mix shear and longitudinal wall installations, including equipment capable of remixing non-conforming soil-cement. Include details of mixing tools that demonstrate the manner in which the tools create the required mixture of cement grout and in-situ soils. Include descriptions and catalog cut sheets of: mixing equipment with dimensions and capacities of equipment and components; instrumentation used to measure and the procedures to determine the horizontal and vertical alignments profiles of soil-cement elements; cement grout mixing equipment; pipelines; control equipment; and hoses and pumps. Include details of equipment to be used to obtain wet grab soil-cement samples. Submit information at least 40 calendar days prior to the start of test section construction.

Procedure; G, ED

Submit a procedure for soil-cement mixing, describing the proposed method to be used to achieve the design requirements. Submit at least 40 calendar days prior to the start of test section construction.

Revisions to Equipment/Procedures/Mix Design; G, ED

Submit revised equipment, procedures, mix design, and/or wall layout and soil-cement element numbering if the results of the test sections do not meet the specification requirements. The end stations of the remediated zones are to be no farther from the abutments than shown on the drawings. Changes in top and bottom wall elevations should occur as close as practicable to the stations shown on the drawings. Submittal should describe the changes made to equipment, procedures, and/or mix design to satisfy the requirements of the project specifications. Submit within 40 calendar days following completion of test sections.

SD-06 Test Reports

Logs of Exploratory Borings; G, ED

Submit logs of pretest exploratory borings at least 10 calendar days prior to start of test section construction.

Daily Production Report; G, RE

Within one working day after the end of each work shift, submit a Daily Production Report for the work shift to the Contracting Officer. Fill out the Daily Production Report, check for correctness, and have it signed by the soil-cement mixing contractor's field superintendent and the general contractor's field superintendent at the end of each work shift. The reports shall contain, but not be limited to, the following information:

a. Day, month, year, time of beginning and end of work shift; name of each superintendent in charge of the work for both the soil-cement mixing contractor and the general contractor; a list of all workers' names associated with each soil-cement mixing rig; and a summary of equipment used during the shift.

b. The locations, installation sequence, and as-installed top and bottom elevations of the soil-cement elements installed during the work shift, and any deviations from the planned locations and vertical alignment.

c. Time of start and completion of each soil-cement element installed during the work shift and a summary of any downtime during the shift including time of work stoppage, duration, reason, and if work stoppage occurred while mixing a soil-cement element.

d. Water-cement ratios of the cement grout, grout injection pressures and rates, quantities of cement, cement additives, and water used, estimated cement factors, mixing rotational speeds, penetration, and withdrawal rates of the mixing equipment, and mixing time at the bottom of the element for each soil-cement element. Include printouts of all automatic batch plant data coinciding with soil-cement element installation.

e. Other pertinent observations including, but not limited to, description of spoil returns, cement grout escapes, ground settlement and/or heave, collapses of the soil-cement element, remixing of elements, obstructions, and any unusual behavior of the equipment during the soil-cement mixing process.

f. Records of soil-cement samples taken during the work shift including sample designation, date, time, plan location, elevation, and the name of the firm and person(s) obtaining the samples.

Test Results; G, RE

A summary of soil-cement samples and cores taken and test results performed by the Quality Control Testing Laboratory personnel shall be compiled into a Daily Field Report and submitted to the Contracting Officer. A draft copy shall be submitted at the end

of each day with a reviewed copy submitted after review and approval by the Quality Control Testing Laboratory Manager. Reviewed and approved laboratory test results shall be submitted within 2 working days of conducting the testing.

As-Built Plans and Test Data; G, ED

At the completion of both the test section and production soil-cement mixing, submit as-built plans showing the actual layout of the soil-cement element structures and a tabular and graphical summary of all laboratory test data collected by the Quality Control Testing Laboratory during the course of the work, as well as copies of all test reports prepared by the Quality Control Testing Laboratory. Submit information within 60 calendar days following completion of the test section construction; submit information within 60 calendar days following completion of production soil-cement construction.

1.7 OMITTED

1.8 GEOTECHNICAL SITE CONDITIONS

1.8.1 Exploratory Borings

Since the Clemson Upper and Lower Diversion Dams were constructed in 1960 and 1961, numerous borings have been performed off and on, related to seepage problems at the dams, for the design of concrete cutoff walls, and recent concerns about the loose foundation materials. In addition, subsurface data are available from installation logs of piezometers and monitoring wells. The borings included soil sampling of the dam embankment materials and the original foundation alluvial soils and coring of the foundation bedrock. Locations of the borings, piezometers and monitoring wells which fall within this contract and those considered related to the contract are shown on the drawings. Logs of the borings and instrument installations are included in Appendix A. The Government assumes no responsibility for interpretation or deductions made by the Contractor from the logs and borings. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristics of the subsurface materials of the region are to be expected and, if encountered, will not be considered as differing materially within the purview of the DIFFERING SITE CONDITIONS clause of the contract. Soil classifications shown on the logs are the result of laboratory and/or field visual-manual classifications, supplemented in some instances by index testing.

1.8.2 Laboratory Testing

The results of all laboratory index testing performed for the present seismic evaluation study of the dams are included in Appendix B. There has been considerable laboratory testing performed for the dams related to the seepage problems, design of concrete cutoff walls, and recent studies regarding the loose foundation materials. Testing has included index tests, undrained and drained triaxial shear tests, direct shear tests, laboratory vane shear tests, and dispersive soil tests on soil samples and petrographic analyses and compression tests on rock cores. The results of the testing are included in the following reports:

USACE (1981) Design Memorandum 32, "Rehabilitation of Clemson Lower Diversion Dam, Volumes I and II."

USACE (1982) Design Memorandum 33, "Rehabilitation of Clemson Upper Diversion Dam."

GEI Consultants, Inc. (1994) "Seismic Evaluation of Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

GEI Consultants, Inc. (1995) "Supplemental Report for Seismic Evaluation of Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

GEI Consultants, Inc. (2002) "Design Summary Report, Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

The above reports are available for review and inspection at the Savannah District Office; to view the reports contact the Project Engineer, Ben Foreman at (912) 652-5370.

1.8.3 Groundwater

The normal full pool for the Hartwell Lake is elevation 660. Time-history plots and cross-section plots of reservoir and piezometric levels for the period December 1995 to January 2002 for both dams are included in Appendix C. The plots are from the 2002 Annual Embankment Instrumentation Report for the Clemson Diversion Dams. The entire report is available for review and inspection at the Savannah District Office; to review the report contact the Project Engineer, Ben Foreman at (912) 652-5370. Also included in the appendix are additional recent water level readings for the piezometers and monitoring wells at the dams. Additional piezometers were installed at both dams in June 2003. Details of the piezometers and water level readings are included in Appendix C.

PART 2 PRODUCTS

2.1 CEMENT GROUT

2.1.1 Portland Cement

Use Type I or II Portland cement conforming to ASTM C 150. Measure, handle, transport and store bulk cement in accordance with the manufacturer's recommendations. Transport and store cement to prevent damage to or degradation of the cement by moisture. Do not use material that has become caked due to moisture absorption. Cement containing lumps or foreign matter of a nature and in amounts that might be deleterious to the grouting operations shall not be used.

2.1.2 Composition

All cement shall be homogeneous in composition and properties and shall be manufactured using the same methods. Secure at least two sources of cement supply and provide documentation of the composition of the cement from each supplier. Throughout the course of the work, obtain cement from one plant and one supplier, retaining second supplier as backup source.

2.1.3 Water

2.1.3.1 Water Requirements

Use water that meets the requirements of ASTM C 94. The water shall be free from oil, acid, alkali, salts, organic materials, and/or other

contamination that would reduce the strength of the hardened soil-cement elements or mixing grout. The water temperature shall be maintained between 40 degrees F and 75 degrees F.

2.1.3.2 Reservoir Water

Water from the reservoir, Lake Hartwell, can be utilized provided it is demonstrated that it meets the acceptance criteria of Table 2 of ASTM C 94 (see subsection 5.1.3.1). A number of samples of water from the reservoir have been obtained for chemical testing for design of the cutoff walls and this contract. Ground water samples were also obtained from each dam. Results of the chemical testing are included in Appendix D. Should water from the reservoir be utilized, the Contractor shall obtain a Temporary Water Withdrawal Permit from the Resource Manager, Lake Hartwell Project Office. The information required and details on obtaining the permit are given in Section 01500 TEMPORARY CONSTRUCTION FACILITIES If the reservoir water is used, the Contractor shall take into account the effect of rainfall on the quality of the water in locating his intake line and the manner of withdrawal of the water.

2.1.4 Temperature of Grout

The Contractor shall take all necessary and appropriate means to assure that the temperature of the grout does not fall below 35 degrees F or exceed 90 degrees F.

2.1.5 Grout Admixtures

Grout admixtures shall not be allowed without the written approval of the Contracting Officer. If proposed, the Contractor shall provide a written statement from the manufacturer as to the use of any such admixture, its effect on the soil-cement material, its long-term performance and stability, and its effect on the environment.

2.1.6 Initial Set

The grout shall not have begun its initial set before it is injected into the ground.

2.2 SOIL-CEMENT

2.2.1 Strength Criterion

The Contractor performing deep soil-cement mixing shall implement a soil-cement mix design and mixing procedure that will result in an average 28-day compressive strength, f'_{sc}, meeting the following criterion:

$f'_{sc} \geq 77.4$ psi x (S / Wa), where:

f'_{sc} = average 28-day compressive strength of soil-cement, psi.
S = soil-cement shear wall spacing (center to center), not to exceed 12.5 feet + maximum wall width.
W_a = average wall width = A/C (where C = center to center spacing of two adjacent augers and A is the area enclosed between the centerlines of the two adjacent augers). Not less than 2.4 feet (refer to illustration on Plate B-12).
The minimum wall width at element overlaps shall not be less than 1.9 feet.

At least five soil-cement elements in each soil-cement shear wall test section shall be sampled and tested in accordance with paragraph 3.8 QUALITY CONTROL (QC) PROGRAM. The average 28-day compressive strength of the test samples from each shear wall test section shall equal or exceed f'_{sc} computed using the above formula. No more than two wet grab samples and two core samples tested from each shear wall test section shall have a 28-day compressive strength less than (2/3) x f'_{sc} computed using the above formula.

2.2.2 Wall Layout

*5

The wall layout shown on the drawings assumes an average wall width of 3.0 feet, a center-to-center spacing of 15.5 feet, and a 28-day unconfined compressive strength of 400 pounds per square inch. The wall layout shown on the drawings is for illustration purposes only, and does not imply that a 3-foot diameter auger will produce a wall having an average width of 3 feet. The above equation shall be used to calculate the required 28-day unconfined compressive strength for different wall widths and spacings.

2.2.3 Laboratory Mix Design Program

A laboratory mix design test program was performed to evaluate the strength and stiffness of grout-soil mixtures for selected samples of soils collected at the site. The results of the mix design test program are included in the Design Summary Report prepared by GEI Consultants, Inc. Excerpts from the Design Summary Report pertaining to the laboratory mix design test program are included in Appendix E. The report is available for review and inspection at the Savannah District Office; to review the report contact the Project Engineer, Ben Foreman at (912) 652-5370. The laboratory test results are made available for review and are solely for general information purposes and are not part of the contract documents; no warranties or guarantees are implied.

PART 3 EXECUTION

3.1 GENERAL

The shear walls shall be constructed by mixing of in-situ soils and cement grout. The soil-cement columns shall be formed by at least two overlapping soil mixing shafts guided by a lead mounted on a crawler base machine. The mixing shafts shall be driven by a power source sufficient to provide torque for a wide range of drilling conditions and to maintain a continuous installation of soil-cement columns. The mixing augers shall be advanced into the soil, with grout being pumped through the hollow stem of the auger shafts and injected into the soil at the shaft tips. The auger flights and mixing blades on the shafts shall blend the soil with grout in pug mill fashion. When the design depth is reached, the mixing shafts shall be withdrawn while the mixing process is continued. The mixing shafts shall be positioned so as to overlap one another to form continuously mixed overlapping columns. After withdrawal, two (or more) overlapping soil-cement columns shall remain in the ground. The process shall then be repeated to form a continuous wall of overlapping columns. A full column overlap shall be performed between adjacent soil-cement elements, i.e., the auger shall fully repenetrate the outer soil-cement column of the previously installed element.

3.2 EQUIPMENT

The deep soil-cement mixing (DSM) equipment shall meet the following

requirements:
*5

a. Multi-shaft mixing equipment (machines with at least two overlapping mixing shafts) shall be used for this project; single shaft mixing equipment is not allowed. The mixing shafts shall have mixing augers and blades (paddles) configured in such a manner so that they are capable of thoroughly blending the in-situ soils and grout to the appropriate depths. Auger flights and mixing paddles on a shaft shall extend to the full diameter of the element being formed, and shall have discontinuous lengths and be spaced to overlap with paddles of adjacent shafts in order to thoroughly break up the in-situ soils and blend them with injected cement grout to form a homogeneous mixture. The equipment and/or DSM column overlapping technique shall be configured so that the length of the overlapping mixing shafts extends for the full depth of the DSM wall. The power source for driving the mixing shafts shall be sufficient to maintain the appropriate revolutions per minute and penetration rate from a stopped position at the maximum depths required. Mixing equipment shall be capable of advancing through previously installed and hardened soil-cement, dense sand and gravel, and weathered rock. DSM equipment that slows to refusal levels in either dense sand and gravel or weathered rock before achieving the embedment lengths of > 4 feet below top of sand and gravel or > 2 feet into rock will be considered not in conformance with the requirements of this paragraph. Refusal at shallower embedments due to DSM equipment encountering unweathered bedrock or boulders will be considered to be consistent with the DSM equipment requirements of this paragraph and the embedment requirements of paragraph 3.3h of this section.

b. The DSM rig shall be equipped with electronic sensors built into the leads to determine vertical alignment in two directions: fore-aft and left-right. The output from the sensors shall be routed to a console that is visible to the operator and the Government personnel during penetration.

c. The DSM equipment shall be adequately marked to allow the Government personnel to confirm the penetration depth to within 6 inches during construction. Penetration depth markings shall be based on the lowest full diameter flight, or cutting blade, on the shallowest, or shortest auger.

d. Grout shall be pre-mixed in a mixing plant, which combines dry materials and water in predetermined proportions. The mixing plant shall consist of a high speed/high shear grout mixer, grout agitator, grout pumps, storage tanks, metering, proportioning (or weighing) equipment, and a computer control unit. The proportioning equipment may use meters, weights, or weight-volumes to ensure proper proportions. Positive displacement pumps shall be used to transfer the grout from the mixing plant to the augers. The grout pumps shall be capable of pumping the required distance and elevations to provide and maintain an adequate supply of grout to the mixing augers. The grout shall be delivered to each slurry-injecting auger by an individual positive displacement pump having an inline flow meter and pressure gage. The flow of grout through the auger shafts shall be verified prior to each stroke by observing the flow out of the mixing augers as they are suspended in the air above the soil-cement element. Any blockage in a mixing auger shall be cleared immediately upon discovery. When a blockage occurs while the augers are in an element, following clearance of the blockage, the augers shall be raised 15 feet above the depth at which the blockage occurred before recommencing soil-mixing.

e. All equipment shall have devices to permit accurate and continuous monitoring and control of: water-cement ratios, cement-grout injection

pressures and quantities, mixing rotational speeds, advancement and withdrawal rates of the mixing tools, and other operations required to install and mix the soil-cement.

3.3 CONSTRUCTION, GENERAL

a. Prior to construction of the shear wall test sections, the Contractor shall drill five (5) exploratory borings along the center line of each test section wall at locations selected by the Contracting Officer. The borings may be drilled from the existing ground surface or from the installation level following the excavation for the test section, at the Contractor's option. Each boring shall be continuously sampled from at least 15 feet above the top of the sand and gravel stratum underlying the alluvium to bedrock. The rock shall shall be cored for a depth of 15 feet. Drilling and sampling in soil shall be in accordance with ASTM D 1586; except that the borehole shall be advanced using open-hole rotary drilling or casing-advancement drilling methods. The use of augers will not be permitted. Also, to avoid disturbance of the underlying soil, only side discharge or upward discharge bits shall be used; bottom discharge bits shall not be used. Coring in rock shall be in accordance with ASTM D 2113; however, the core barrel shall be sized to provide core having a diameter of at least 3 inches. A typed or printed log shall be prepared for each boring in accordance with ASTM D 1586, ASTM D 2113, and ASTM D 5434.

b. The DSM Contractor shall mobilize and maintain a sufficient number of soil-cement mixing rigs, materials, cement grout batching plants and crews to complete the specified work in accordance with the project schedule. The order of soil-mix construction shall be Lower Dam then the Upper Dam.

c. The Contractor shall perform all survey, layout and utility clearance required for the soil-cement mixing.

d. The Contractor shall provide spoil containment facilities and other measures necessary to protect and maintain the site in a workable condition.

e. Soil-cement mixing shall be performed only in the presence of the Contracting Officer's field representative.

f. Omitted.

g. Soil-cement elements for shear walls shall extend at least 4 feet into the sand and gravel stratum shown on the drawings. The 4-foot embedment shall be based on the lowest full-diameter flight, or cutting blade on the shallowest, or shortest auger. The Contracting Officer shall determine the elevation of the top of the sand and gravel stratum based on observations made while mixing each element. The bottom of the elements for shear walls shall be double-mixed by raising the mixing augers 10 feet off the bottom and then reinserting them for remixing.

h. If rock is encountered prior to obtaining a 4-foot embedment of the soil-cement element into the sand and gravel stratum, the soil-cement element shall be seated into the rock to provide intimate contact between the soil-cement element and the rock. Drilling into the rock shall be continued until a total embedment of 4 feet below the top of the sand and gravel stratum is obtained, an embedment of 2 feet into rock is obtained, or refusal of the augers, refusal being defined as a penetration rate of less than 1 foot per minute for 5 minutes.

3.4 INSTALLATION OF SOIL-CEMENT TEST SECTION SHEAR WALLS

3.4.1 Proper Location and Alignment

As a minimum, guide trenches and/or templates, and survey control shall be used to maintain proper horizontal location and alignment of the soil-cement mixing equipment.

3.4.2 Vertical Alignment Monitoring

The Contractor shall continuously monitor and adjust the vertical alignment of the soil-cement mixing equipment leads using electronic sensors that provide continuous measurements of vertical alignment displayed directly to the equipment operator.

3.4.3 Grout Injection Monitoring

The Contractor shall continuously monitor and control the grout injection rate, rotation speed, penetration rate, and withdrawal rates.

3.4.4 Mixing

Once mixing of a soil-cement element is started, continue the mixing operation until the soil-cement element is completed. If an interruption of more than 2 hours occurs, the element shall be remixed for the entire length of the element using the correct dosage of fresh grout, at no additional cost to the Government.

3.4.5 Sequencing

Mixing of soil-cement elements shall be sequenced such that previously mixed soil-cement elements are sufficiently soft to allow overlapping of soil-cement elements producing a continuous wall with the minimum specified width. A full column overlap shall be performed between adjacent soil-cement elements, i.e., the auger shall fully repenetrate the outer soil-cement column of the previously installed element.

3.4.6 Omitted

3.4.7 Debris

Debris shall not be allowed to enter the top of the soil-cement element while it is curing.

3.4.8 Potential for Discontinuity

If observations during installation of a soil-cement element indicate a potential for discontinuity of the element due to improper installation procedures, equipment problems or collapse of the surrounding soil, the soil-cement element shall be remixed to full depth, at no additional cost to the Government.

3.4.9 Drilling to Auger Refusal

One element, as designated by the Contracting Officer, in each test section shall be carried, to auger refusal, as defined in these specifications, to evaluate the ability of the equipment to penetrate rock.

3.4.10 Exploratory Excavation

The Contractor shall provide the excavation equipment necessary to excavate a 2-foot minimum wide exploratory trench along side the test section shear walls. The Contractor shall excavate up to four separate 10-foot long trenches at locations directed by the Contracting Officer. Maximum depth of the trenches will be 4 feet. Government personnel will inspect the walls for voids, soft zones, and abnormalities. The trenches shall be backfilled with the excavated material placed in 12-inch layers and compacted with the excavator bucket to a non-yielding condition.

3.5 INSTALLATION TOLERANCES

3.5.1 Length and Width

Soil-cement element structures shall be installed to the lengths and locations shown on the drawings and approved submittals. Soil-cement shear walls shall have an average width of 2.4 feet or greater and a minimum width at element overlaps of 1.9 feet or greater.

3.5.2 Horizontal Deviation

The maximum horizontal deviation of the as-installed center of any soil-cement element at the installation level shall not exceed 3 inches from the design center location shown on the Contractor's approved submittal.

3.5.3 Vertical Misalignment

The maximum horizontal deviation due to vertical misalignment of any soil-cement element shall not exceed 1 percent of the depth below the installation level.

3.6 CONTAINMENT, COLLECTION AND DISPOSAL OF SPOIL RETURN

3.6.1 Containment

Positive means shall be provided for containing all spoil return, flush water, and other waste materials within the immediate work area. Pipe or channel spoils material into holding ponds, tanks, or other retention structures or facilities. Incorporate all sedimentation and turbidity control measures required by applicable Federal, State and local regulations. Take all necessary precautions and implement measures to prevent any spoil return, other waste materials, or stockpiled materials from entering storm drain structures, drainage courses and other utility lines or from leaving the site via surface runoff.

3.6.2 Cleaning and Removing

In the event spoil return, waste materials, or stockpiled materials enter an area or facility outside the approved work area or mixing spoils storage area, the Contractor shall be responsible for immediately and completely cleaning and removing these materials to the approval of the Contracting Officer or the area of facility, at no additional cost to the Government.

3.6.3 Blending of Mixing Spoils

Mixing spoils may be blended with common fill used to reconstruct the berm on each dam provided the mixing spoils do not adversely affect the Contractor's ability to meet the placement and compaction requirements for the fill. Fill comprised of mixing spoils and common fill shall meet the

requirements of Section 02300 EARTHWORK. As shown on the drawings no mixing spoils or soils with mixing spoils shall be used in the outer 12 inches of the reconstructed berm.

3.6.4 Disposal of Mixing Spoils

Mixing spoils shall be disposed of off-site by the Contractor in accordance with all applicable laws and regulations at no additional cost to the Government if blending the mixing spoils with common fill prevents the common fill from being placed and compacted in accordance with the specifications. If blending the mixing spoils with common fill proves satisfactory, then excess mixing spoils remaining at the completion of the required work may be placed in waste berms constructed along the toe of each dam. The waste berms shall be constructed in accordance with the requirements specified on the drawings and in these specifications.

3.7 OMITTED

3.8 QUALITY CONTROL (QC) PROGRAM

3.8.1 General

In accordance with the contract clause titled "Inspection of Construction" and Section 01451A CONTRACTOR QUALITY CONTROL, the Contractor shall establish and maintain quality control for the operations covered under this section to assure complete and strict compliance with contract requirements and to maintain and provide records of his quality control for all the operations.

3.8.2 Control Procedures

The Contractor shall implement procedures to monitor, control, and document shear wall locations (horizontal and vertical), shear wall vertical alignments, water-cement ratios, cement factors, cement-grout injection pressures and quantities, mixing rotational speeds, penetration and withdrawal rates of the mixing equipment; horizontal and vertical alignments of the soil-cement elements and other related aspects of the soil-cement mixing process. Document these procedures in a Daily Production Report as described in paragraph 1.6 SUBMITTALS.

3.8.3 Sampling and Testing

Sampling and testing to provide for quality control shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government. The Contractor shall retain an independent Quality Control Testing Laboratory to obtain and/or perform testing on grout and soil-cement samples, and report the laboratory test results in accordance with applicable ASTM standards and the requirements specified. The Contractor shall perform the following testing to assure that the soil-cement mixing complies with the specifications. The numbers and frequencies of testing listed below are minimums; the Contractor shall perform additional sampling and testing, as directed by the Contracting Officer, if test results or observations during installations indicate the soil-cement mixing to be of marginal quality.

3.8.3.1 Grout

a. The Contractor shall test the grout unit weight in accordance with ASTM D 4380 and the grout time of eflux in accordance with ASTM C 939 at the

beginning of each grout batch and at least two times per each day, or shift, whichever is more frequent. The Marsh funnel manufactured by Baroid may be substituted for the flow cone.

b. At least three sets of three (3) mortar cubes shall be obtained per each day, or shift, whichever is more frequent, in accordance with ASTM C 109, at the beginning of grout mixing operations, and whenever grout components (cement, admixtures, water) are changed either by source or by proportion. The compressive strength of the cubes at 7, 14, and 28 days shall be determined in accordance with ASTM C 109.

3.8.3.2 Wet Grab Soil-Cement Samples

a. The Contractor shall obtain a minimum of five sets of wet grab soil-cement samples from each shear wall test section, but not less than one set per work shift per rig, at locations selected by the Contracting Officer. Each set of soil-cement samples shall consist of one sample about 2 feet below the top of the alluvium, one sample at about the middle of the alluvium and one sample at about 2 feet from the bottom of the alluvium, all obtained from the same soil-cement element. Alternative depths shall be sampled if the Contracting Officer so directs. Sample locations will be selected that are representative of the lowest cement factors, for example, the middle auger location where a multiple auger rig has been used.

b. Omitted.

c. Both the set of three soil-cement samples shall be retrieved and all the test cylinders shall be prepared within 60 minutes of the withdrawal of the mixing equipment from the soil-cement element. The device used to retrieve the wet grab soil-cement samples shall be a hydraulically or mechanically operated device capable of obtaining a discrete fluid sample of soil-cement at a pre-determined depth and shall be capable of accepting lumps of soils not thoroughly mixed that are up to 6 inches in dimension. The sampler shall be lowered empty, air only, to the required depth in the soil-cement element and then opened. Once filled with the soil-cement, the sampler shall be closed to exclude entry or loss of soil-cement and be expeditiously raised to the ground surface.

d. Each retrieved soil-cement sample shall be of sufficient volume to produce a minimum of four full cylinders (6-inch diameter by 12-inch height). The entire sample shall be passed through a 1 inch sieve, and any particles retained on the sieve shall be cut to a size that will just pass the 1-inch sieve and then be returned to the sample from which the four cylinders will be formed immediately.

e. All soil-cement samples shall be formed, preserved, and cured in accordance with ASTM C 31, except that the samples shall be cured in accordance with paragraph 10.1 of ASTM D 1632. The samples shall be placed in a moist room as soon as practical; the samples may have to remain molded for several days depending on the strength. Extra care shall be exercised in transporting the samples. . Protect soil-cement samples from freezing and extreme weather conditions at all times.

f. The soil-cement cylinders shall be tested for unconfined compressive strength in accordance with ASTM C 39, except that (1) specimens shall be immersed in water for 4 hours prior to testing in accordance with paragraph 6.3 of ASTM D 1633, (2) specimens shall be capped in accordance with ASTM C 617 utilizing high strength gypsum plaster, and (3) a loading rate of 20 plus or minus 10 psi/sec. shall be used. Unless directed otherwise by the

Contracting Officer, test one cylinder at 7 days, two cylinders at 28 days, and one cylinder at 56 days. Submit the laboratory test results to the Contracting Officer in accordance with this section

3.8.3.3 Core Samples

a. The Contractor shall take core samples, for the purpose of testing in-situ samples of the soil-cement, from the shear wall test sections. The coring of the soil-cement test sections shall be performed in accordance with ASTM D 2113 and the requirements stated herein.

b. Continuous core samples shall be obtained at five separate locations designated by the Contracting Officer in each shear wall test section and over the entire depth of the shear wall and at least 4 feet into the underlying strata. If directed by the Contracting Officer, additional core samples shall be obtained at locations designated by the Contracting Officer. Minimum diameter of the core samples shall be 3.0 inches.

c. The core samples shall be obtained at a minimum of 28 days following completion of the shear wall test section.

d. Drilling of the core samples shall be by any conventional or wireline rotary rock core drilling method performed in accordance with ASTM D 2113 that will provide continuous and complete cores of the specified diameter. The method used shall provide equally good recovery of cores from materials varying in hardness from very soft to soft rock-like material (soil-cement) to sound, hard rock. The soil-cement is heterogeneous, brittle and variable in strength. Furthermore, the hardeners can vary considerably throughout a single core boring. The method shall provide a core recovery of 85 percent or greater. The driller shall operate his drill at such speeds and with such down pressures and shall control drill fluid pressures and quantities to ensure maximum core quality and recovery in whatever hardness material is encountered. The driller shall exercise particular care in recording zones of water loss, cavities, rod jerks, rough drilling and other unusual and non-ordinary coring experiences that, supplementing the core record, could shed light on the nature and the extent of any abnormalities. It is emphasized that the core drilling method is up to the driller; however, as information, the following methods and drilling features have been used successfully in the coring of soil-cement construction:

Experienced drillers
Wireline
Triple tube coring equipment
Very coarse diamond coring bit - 15 to 20 stones per carat
Side discharge bit
Lubrication of inside surface of sample tube

Each of the core boring shall be monitored and logged by an experienced engineer or geologist drilling inspector. A boring log shall be prepared in accordance with ASTM D 2113 and ASTM D 5434. An example of a core log for soil-cement is included at the end of Section 02240R STABILIZATION BY SOIL-CEMENT MIXING.

e. Following completion of the drilling, the borehole shall be grouted to the top with an approved grout using the pressure injected tremie grouting method.

f. Immediately after retrieving the soil-cement core samples from a

specific boring, wrap and seal (to prevent moisture loss) at least six (6) core samples per boring, selected by the Contracting Officer, to be submitted to the Quality Control Testing Laboratory for unconfined compression testing. The core samples shall be tested in accordance with ASTM C 39, except that the cores shall be field cured, transported, lab cured, immersed, capped, and loaded at the same loading rate, as specified for the wet grab soil-cement samples in paragraphs 3.8.3.2e and 3.8.3.2f above.

g. Remaining core samples shall be boxed, labeled, stored and preserved until completion of the soil-cement mixing. Upon completion of the project, the core samples shall be delivered to the Contracting Officer in accordance with ASTM D 2113. The core samples shall be protected from freezing and extreme weather conditions at all times.

h. For each core boring in which there is not at least 85 percent core recovery in each core run, the Contractor shall perform an adjacent supplemental core boring, location as directed by the Contracting Officer, down through the depth of the lowest "failing" core run. The additional borings and core sampling and unconfined compression testing shall be performed at no additional cost to the Government.

3.8.3.4 Soil-Cement Bedrock Interface Core Samples

a. Where the soil-cement wall does not penetrate at least 4 feet (based on the lowest full-diameter flight, or cutting blade on the shallowest, or shortest auger) below the top of the sand and gravel stratum underlying the alluvium, or at least 2 feet into rock, the Contractor shall perform core borings across the soil-cement/bedrock interface using the methods specified in paragraph 3.8.3.3 above, except that no core samples are required to a depth of 10 feet above the top of the sand and gravel stratum. The locations and number of borings shall be as directed by the Contracting Officer. The purpose of the interface core borings is to verify that the entire area of the soil-cement element(s) is in intimate contact with the bedrock. The Contractor shall anticipate that at least two (2) interface core borings will be performed per 50 feet of wall where the embedment/penetration is as described above. Penetration depth below the top of the sand and gravel will be evaluated by the Contracting Officer based on either adjacent soil borings or on the penetration resistance exhibited by the soil-mix equipment.

b. The interface cores shall be obtained with a core barrel having a length of at least 5 feet, and shall extend across the interface to include the bottom 2.0 feet of the soil-cement wall, as determined by the soil-mix auger penetration, and at least 2.0 feet of the underlying bedrock. Longer 10-foot cores shall be taken if recoveries are less than 85 percent. Interface core samples from the test section shear walls and production shear walls will be examined and tested to verify that:

1. The soil-cement wall is in intimate contact with the bedrock.

2. The soil-cement quality at the bottom of the wall is consistent with the strength criteria. Two core samples will be selected by the Contracting Officer from each interface core boring to be submitted to the Quality Control Testing Laboratory for unconfined compression testing. The core samples shall be tested in accordance with ASTM C 39.

c. Additional interface cores shall be taken for testing, at the direction of the Contracting Officer, if the initial interface cores do not clearly

demonstrate intimate contact between the soil-cement wall and bedrock, or if the soil-cement immediately above the bedrock does not meet the strength criteria.

3.9 ACCEPTANCE OF TEST SECTION SOIL-CEMENT WALLS

a. The Contracting Officer will review and evaluate the soil-cement test section walls for acceptance based on the conformance of the QC data and of installation procedures to the requirements of these specifications. The 28-day compressive strength results of wet grab samples and core samples taken from the test section walls will be used to evaluate if the test sections meet the specification requirements for compressive strength. Interpretation and evaluation of QC data for acceptance of soil-cement shear walls will be at the sole discretion of the Contracting Officer.

b. The Contractor shall review the results of the wet grab QC data, the cores recovered from the core holes drilled through each test section wall, and the results of compressive strength results and quality of the cores and propose any modification to the mix design, wall spacing, or auger size required to meet the specification requirements. Changes to any mixing criteria, including but not limited to mix design, auger size, and auger configuration, will require additional test sections to be performed at no additional cost to the Government. Additional test sections will not be required if only the proposed wall spacing is changed.

3.10 CLEANUP

*5

The Contractor shall remove and dispose of all excess soil, grout, soil-cement, and other spoil or waste from the site at no additional cost to the Government. The excavations into the berms required for construction of the shear walls shall be backfilled in accordance with the requirements of Section 02300 EARTHWORK and the drawings.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02250R

*4 DRAINS

03/03

PART 1 GENERAL

1.1 DESCRIPTION OF WORK
1.2 REFERENCES
1.3 MEASUREMENT AND PAYMENT
1.3.1 Measurement
1.3.2 Payment
1.4 SUBMITTALS

PART 2 PRODUCTS

2.1 SLOTTED AND SOLID WALL DRAIN PIPE, FITTINGS, AND COUPLINGS
2.2 FILTER SAND (FINE AGGREGATE)
2.3 COARSE AGGREGATE
2.4 GEOTEXTILE FABRIC FOR RIPRAP
2.5 RIPRAP
2.6 CONCRETE FOR CONSTRUCTION OF OUTFALL WEIR BOXES
2.7 GEOTEXTILE FABRIC FOR DRAIN
2.7.1 Material Properties
2.7.2 Sewn Seams
2.7.3 Repairs

PART 3 EXECUTION

3.1 CONSTRUCTING DRAINS
3.1.1 General
3.1.2 Excavation
3.1.3 Placement of Pipe
3.2 DRAIN VIDEO INSPECTION
3.2.1 General
3.2.2 Equipment Description
3.2.2.1 Video Inspection/Recording Equipment
3.2.2.2 Video Cassettes
3.2.2.3 Power Source
3.2.3 Inspection Procedure
3.2.4 Repair of Damage
3.2.5 Measurement and Payment

-- End of Section Table of Contents --

SAVH-02250R (March 2003)

SECTION 02250R

*4 DRAINS
03/03

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

The work covered by this section consists of furnishing all plant, labor, materials, and equipment and performing all operations in connection with constructing the embankment trench drains to be installed immediately upstream of the longitudinal soil-cement walls and all the associated appurtenances in accordance with the drawings and the requirements of this section.

1.2 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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 33	(2001a) Concrete Aggregates
ASTM D 448	(1986; R 1998) Sizes of Aggregate for Road and Bridge Construction
ASTM D 693	(1998) Standard Specification for Crushed Aggregate for Macadam Pavements
ASTM D 4491	(1999a) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1999a) Determining Apparent Opening Size of a Geotextile
ASTM D 4833	(2000e1) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M 252	(2002) Corrugated Polyethylene Drainage Tubing

South Carolina Department of Transportation (SCDOT)

SCDOT	Standard Specifications for Highway Construction, Edition of 2000

1.3 MEASUREMENT AND PAYMENT

1.3.1 Measurement

The drains will not be measured for payment.

1.3.2 Payment

Payment for furnishing and constructing the drains will be made at the contract lump sum price bid in the schedule for the appropriate dam, and shall be considered to constitute full compensation for furnishing all materials for the drains; for performing all required excavation and backfill (up to the top of the longitudinal soil-cement wall); for furnishing, installing, maintaining and removing trench protection systems; for placing the pipe and making joints; providing and placing backfill materials; for constructing and installing the concrete outfall weir boxes with associated geotextile fabric and riprap; making and repairing pavement cuts; performing video inspections of the drains, and, if necessary, repairing any deficiences revealed by the video inspections; and for all other material and work necessary to complete the drains.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Construction Plan; G, ED

Submit plans and sketches, as appropriate, and a narrative that describes the methods and procedures to be used to construct the drains, especially the excavation and backfilling and how the construction of the drains will be coordinated with the soil-cement mixing construction. Provide a plan showing layout and configuration of multiple cleanouts. Describe methods to achieve and maintain excavated trenches in a dewatered and hydrostatically relieved condition to permit construction to be performed in the dry. Submit at least 40 calendar days prior to the start of any drain construction.

Shoring and Sheeting Plan; G, ED

Describe materials of shoring system to be used. Provide plans, sketches, and details along with calculations by a registered professional engineer. Indicate sequence and method of installation and removal. Submit at 40 calendar days prior to the start of any drain construction.

Details of Surface Roadway Box; G, ED

Submit details of surface roadway box to be used at pipe cleanouts at least 40 calendar days prior to the start of any drain construction.

Drain Video Inspection Plan; G, ED

Submit a narrative that describes methods and procedures and equipment to be used to perform the video inspection of the drains, especially how the inspection will be coordinated with the construction operations. Submit at least 40 calendar days prior to the start of any drain construction.

SD-03 Product Data

Certificate of Compliance, Pipe; G, ED

Certificate of compliance indicating conformance with specified requirements shall be furnished for pipe and joint materials at least 40 calendar days prior to the start of any drain construction and/or before ordering any materials.

Certificate of Compliance, Fine and Coarse Aggregates; G, ED

Certificate of compliance indicating compliance with specified requirements shall be furnished for fine and coarse aggregates, at least 40 calendar days prior to the start of any drain construction. Also submit representative gradation test results.

Certificates of Compliance, Geotextile Fabrics for Riprap and for Drain; G, ED

Certificates of compliance indicating compliance with specified requirements shall be furnished for geotextile fabrics, to be used at outfall weir boxes and for drain, at least 40 calendar days prior to the start of any drain construction. Also submit manufacturer's specification sheet. This submittal shall include copies of the manufacturer's quality control test results. The certificate of compliance shall be attested to by a person having legal authority to bind the geotextile manufacturer.

Certificate of Compliance, Concrete; G, ED

Certificate of compliance indicating compliance with specified requirements shall be furnished for concrete to be used in construction of outfall weir boxes, at least 40 calendar days prior to the start of any drain construction.

Certificate of Compliance, Riprap; G, ED

Certificate of compliance indicating compliance with specified requirements shall be furnished for riprap to be used at outfall weir boxes, at least 40 calendar days prior to the start of any drain construction.

SD-04 Samples

Samples of Geotextiles and Sewn Seam; G, ED

Samples of geotextiles and sample of sewn seam (with seam assembly

description) shall be submitted at least 40 calendar days prior to the start of any drain construction.

SD-06 Test Reports

Drain Video Inspection Recordings; G, RE

Submit original video recording in Super VHS format, two copies of the original recording in standard VHS format and SP mode, and a transmittal letter detailing the findings of the inspection within 48 hours following completion of the inspection.

PART 2 PRODUCTS

2.1 SLOTTED AND SOLID WALL DRAIN PIPE, FITTINGS, AND COUPLINGS

The 6-inch diameter slotted and solid wall drain pipe, fittings, and couplings shall be heavy duty dual wall, polyethylene pipe with outer corrugated wall and smooth inner wall meeting the requirements of AASHTO M 252, Type S (solid) and Type SP (perforated). Perforations shall be Class 2, slotted. Fittings and coupling shall be as recommended by pipe manufacturer.

2.2 FILTER SAND (FINE AGGREGATE)

The filter sand shall meet the requirements of sections 6 and 7 of ASTM C 33 for fine aggregate, except that the maximum percent, by weight, passing the No. 200 sieve shall be 5 percent. The material finer than the No. 200 sieve shall be cohesionless (nonplastic).

2.3 COARSE AGGREGATE

The coarse aggregate immediately around the pipe shall meet the quality requirements of ASTM D 693 and the gradation requirements of ASTM D 448.

2.4 GEOTEXTILE FABRIC FOR RIPRAP

The geotextile fabric beneath the riprap at the outfall weir boxes shall be Class 2, Type B in accordance with Section 804.11 of SCDOT Standard Specification for Highway Construction, Edition of 2000.

2.5 RIPRAP

The riprap around the outfall weir boxes shall be Class A gradation in accordance with Section 804.02 of SCDOT Standard Specifications for Highway Construction, Edition of 2000.

2.6 CONCRETE FOR CONSTRUCTION OF OUTFALL WEIR BOXES

Concrete for the construction of the cast-in-place reinforced concrete outfall weir boxes shall be Class 3000 in accordance with Sections 701 and 702 of the SCDOT Standard Specifications for Highway Construction Edition of 2000. Reinforcing shall be in accordance with Section 703 of the same specifications.

2.7 GEOTEXTILE FABRIC FOR DRAIN

2.7.1 Material Properties

Geotextile fabric for the Alternate Drain Detail shall be a needle punched, nonwoven pervious sheet of polymeric material and shall consist of long-chain synthetic polymers composed of at least 95 percent by weight polyolefins, polyesters, or polyamides. Regrind material, which consists of edge trimmings and other scraps that have never reached the consumer, may be used to produce the geotextile. Post-consumer recycled material shall not be used. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the edges. Geotextiles shall meet the requirements specified in Table 1. Where applicable, Table 1 property values represent minimum average roll values (MARV) in the weakest principal direction. Values for AOS represent maximum average roll values.

TABLE 1. GEOTEXTILE PHYSICAL PROPERTIES

PROPERTY	TEST VALUE	TEST METHOD
Elongation at Break, percent	50 to 70	ASTM D 4632
Apparent Opening Size (U.S. Std. Sieve)	70	ASTM D 4751
Permittivity, Sec-1	1.0	ASTM D 4491
Puncture, lbs	80	ASTM D 4833
Grab Tensile, lbs	200	ASTM D 4632
Sewn Seam Strength, pounds	180	ASTM D 4632
Trapezoidal Tear, lbs	80	ASTM D 4533
Ultraviolet Stability (percent strength retained at 500 hours)	50	ASTM D 4335

2.7.2 Sewn Seams

a. Factory and/or field seams shall be continuously sewn at the locations indicated on the drawings. Seams shall be a flat (pray) seam, "J" seam, or "butterfly-folded" seam, and the stitch shall be a 401 locking chain stitch; two-thread, double-lock stitch, or a double row of single-thread, chain stitch. The thread used shall consist of high strength polypropylene, or polyester. Nylon thread shall not be used. The thread shall be of contrasting color to that of the geotextile itself. Seam strength shall meet the minimum requirements specified in Table 1. The thread at the end of each seam run shall be tied off to prevent unraveling. Skipped stitches or discontinuities shall be sewn with an extra line of stitching with a minimum of 18 inches of overlap.

b. For seams that are sewn in the field, the Contractor shall provide at least a 5-foot length of sewn seam for sampling by the

Government before the geotextile is installed. For seams that are sewn in the factory, the Contractor shall obtain samples of the factory seams at random from any roll of geotextile that is used on the project and provide to the Contracting Officer for sampling before the geotextile is installed.

c. For seams that are field sewn, the seams sewn for sampling shall be sewn using the same equipment and procedures as will be used for the production seams. If seams are sewn in both the machine and cross-machine direction, samples of seams from both directions shall be provided.

d. The Contractor shall submit the seam assembly description along with the sample of the seam. The description shall include the seam type, stitch type, sewing thread, and stitch density.

2.7.3 Repairs

Torn or damaged geotextile shall be repaired. Clogged areas of geotextile shall be removed. Repairs shall be performed by placing a patch of the same type of geotextile over the damaged area. The patch shall extend a minimum of 18 inches beyond the edge of the damaged area. Patches shall be continuously fastened using methods recommended by the manufacturer and approved by the Contracting Officer. The machine direction of the patch shall be aligned with the machine direction of the geotextile being repaired. Geotextile rolls which cannot be repaired shall be removed and replaced. Repairs shall be performed at no additional cost to the Government.

PART 3 EXECUTION

3.1 CONSTRUCTING DRAINS

3.1.1 General

The drains shall be constructed at the locations shown on the drawings or as directed by the Contracting Officer. The drains shall be installed to the dimensions and lines and grades shown on the drawings. Care shall be taken to avoid clogging or damaging the drains during progress of the work, and should any drain become clogged, damaged or obstructed from any cause before final acceptance of the work, it shall be cleaned out in a manner approved by the Contracting Officer or replaced by and at the expense of the Contractor. Pipe which has been damaged shall not be used in the work, if in the opinion of the Contracting Officer, the pipe is unfit for use.

3.1.2 Excavation

a. Excavation shall be made to the lines, grades, and dimensions shown or described on the drawings or established by the Contracting Officer. Excavate trenches to ensure that sides will be stable under all working conditions. Open only as much trench as can be safely maintained by available equipment. Backfill all trenches as soon as practicable, but not later than the end of each working day.

b. Bidders and the Contractor shall assume all responsibility for deductions and conclusions as to the difficulties of making and maintaining the required excavations. Sloping of the upstream side of the trench for the slotted drain pipe will not be permitted. If workers must enter the excavations, the excavation shall be evaluated, shored, or braced as

required by EM 385-1-1 and 29 CFR 1926, Section 650.

c. The Government reserves the right, during the progress of the work, to vary the slopes, grades, or the dimensions of the excavations from those shown or specified.

d. All necessary precautions shall be taken to preserve the material below and beyond the established lines of all excavation in the soundest possible condition.

e. Excavations shall be performed in the dry. Refer to Section 02140 DEWATERING, for dewatering requirements. No excavations shall be made in frozen materials without written approval.

f. Any and all excess excavation for the convenience of the Contractor or overexcavation performed by the Contractor for any purpose or reason, except as may be ordered in writing by the Contracting Officer, and whether or not due to the fault of the Contractor, shall be at the expense of the Contractor. Where required to complete the work, all such excess excavation and overexcavation shall be refilled with materials designated by the Contracting Officer, and furnished and placed at the expense of and by the Contractor.

g. When supports such as trench sheeting, trench jacks, trench shields or boxes are used, ensure that support of the pipe and its embedment is maintained throughout installation. Ensure that sheeting is sufficiently tight to prevent washing out of the trench wall from behind the sheeting.

h. If trench sidewalls slough during any part of excavating or installing the pipes, remove all sloughed and loose material from the trench.

3.1.3 Placement of Pipe

a. Place pipe and fittings in trench with the invert conforming to the required elevations, slopes, and alignment. Pipe shall be laid so that slots are symmetrical about the vertical centerline and are on the bottom side of the pipe.

b. Comply with manufacturer's recommendations for assembly of joint components and making of joints. When pipe laying is interrupted, secure piping against movement and seal open ends to prevent the entrance of water, mud, or foreign material.

c. Do not lay or embed pipe in standing or running water. At all times prevent runoff and surface water from entering the trench. Refer to Section 02140 DEWATERING for dewatering requirements.

d. Place filter sand (fine aggregate) and coarse aggregate by methods that will not disturb or damage the pipe and that will hold the pipe securely in position while the overlying material is being placed. Do not permit compaction equipment to contact and damage the pipe.

e. Do not disturb the installed pipe and embedment materials when using movable trench boxes and shields. Movable supports should not be used below the top of the pipe unless approved methods are used for maintaining the integrity of embedment materials. Before moving supports, place and compact embedment materials to sufficient depths to ensure protection of the pipe. As supports are moved, finish placing and compact embedment materials.

f. If the Contracting Officer permits the use of sheeting or other trench wall supports below the pipe zone, ensure that pipe and foundation and embedment materials are not disturbed by support removal. Fill voids left upon removal of supports.

g. Filter sand and coarse aggregate shall be placed and compacted in 6-inch layers to a non-yielding condition using vibratory equipment.

h. Common fill backfill material shall be placed and compacted within such moisture content limits that will ensure a homogeneous fill without visible voids. The upper limit of moisture shall be that which will permit the operation of the compacting equipment on the fill surface without causing heaving, quaking, rutting, shearing or excessive deformation of the fill. The lower limit shall be the moisture content above which a homogeneous fill without visible voids can be obtained. Backfill material shall be free of lumps, clods, boulders, frozen material, and debris. The common fill backfill shall be placed in 6- to 8-inch layers and compacted to a non-yielding condition with manually operated internal combustion activated tampers or walk-behind vibratory rollers. The character and efficiency of the compaction equipment shall be subject to the approval of the Contracting Officer.

i. The drain pipe cleanouts shall be constructed according to the details shown on the drawings. Contractor shall submit details of the surface roadway box to be used prior to fabrication or ordering.

j. The downstream end of the drain discharge pipe shall be connected to the cast-in-place reinforced concrete outfall weir box. The connection of the pipe to the weir box shall be watertight.

3.2 DRAIN VIDEO INSPECTION

3.2.1 General

Video inspection shall be performed of both systems of the embankment trench drains, including discharge pipelines, cleanouts, and cleanout riser pipes. The pipe and joints shall be inspected for crushed, collapsed, ruptured, open, etc. areas. Inspection of the embankment trench drains shall be performed after the backfill has been placed to the top of the longitudinal wall and before the backfill is extended above that level. Discharge lines shall also be inspected if installed at that time; if not installed at that time, the discharge lines shall be inspected upon their completion. Cleanout risers shall be inspected following their completion to final grade.

3.2.2 Equipment Description

3.2.2.1 Video Inspection/Recording Equipment

The inspection shall be conducted using video inspection/recording equipment that is specifically designed for continuous viewing and recording of images of the interior walls of pipes and fittings having a nominal diameter of 6 inches and capable of providing a true-color image of the entire pipe periphery. Additional requirements are:

a. Camera that is waterproof.

b. Camera with a minimum horizontal resolution of 400 television lines,

as determined from manufacturer's specifications.

c. A super VHS video cassette recorder.

d. A centering device to keep the camera centered in the pipe during the inspection.

e. Camera shall be capable of radial view for inspection of the top, bottom, and sides of pipe and for looking up "T" connections.

f. Camera shall have a self-contained remotely controlled lighting system capable of varying the illumination of the interior of the pipe for inspection and photographic purposes.

g. View seen by the camera shall be transmitted to a color monitor of not less than 13 inches.

h. Audio input.

The camera, television monitor, and other components of the video system shall be capable of producing a picture quality satisfactory to the Contracting Officer; and if unsatisfactory, in the opinion of the Contracting Officer, the equipment shall be removed and new equipment that can produce a satisfactory picture quality shall be obtained and utilized for the inspection.

3.2.2.2 Video Cassettes

New, high grade video cassettes shall be furnished for all original recordings and copies of original recordings.

3.2.2.3 Power Source

Contractor shall furnish an appropriate power source to operate all inspection equipment.

3.2.3 Inspection Procedure

Inspection at each location shall be in accordance with the following procedure:

a. Record a title screen for between 25 to 35 seconds, consisting of dam, date of inspection, station (or location) or point of entry, and travel direction of camera.

b. Display dam, date of inspection, station (or location) of point of entry, and travel distance of camera from point of entry on the video that do not interfere with the observation of pipe distress.

c. Camera shall be moved through pipeline at a moderate rate, stopping when necessary to permit proper documentation of damage or unsatisfactory conditions. Camera shall not travel at a speed greater than 15 feet per minute. Manual winches, power winches, TV cable power rewinds, self-propelled cameras or other approved methods shall be used to move the camera through the line.

d. Audibly document any problems incurred conducting the inspection. In areas where obstructions, separations, rips, crushed sections, or improper connections are observed, do the following:

Stop advancing the camera;
Adjust camera to provide a clear image of the distressed area(s);
Audibly document the location, type, and extent of each distress.

e. The Contractor shall record reasonably accurate distance measurements for the purpose of locating defects. Distance measurements shall be made by means of a meter device (footage meter) on the TV cable or an electronic distance counter. The measurement devices shall be capable of measuring within plus or minus 2 feet per 100 feet.

f. If during the inspection operation, the television camera will not pass through the entire pipeline section, the Contractor shall set up his equipment so that the inspection can be performed from the opposite end of the section.

g. The Contractor shall submit the original video recording in Super VHS format, two copies of the original recording in standard VHS format and SP mode, and a transmittal letter detailing the findings of the inspection within 48 hours following completion of the inspection.

h. Recording of inspection runs at multiple locations on a single video cassette is permitted, provided that each run is totally contained on the video cassette.

3.2.4 Repair of Damage

Should the inspection show damage or that the pipe has not been installed properly, the necessary repairs shall be performed by the Contractor to the satisfaction of the Contracting Officer. Sections found to have deficiencies shall be reinspected after the deficiencies have been corrected.

3.2.5 Measurement and Payment

No separate measurement and payment will be made for the drain video inspections, including repair and correction of any deficiencies, but all costs for such work shall be considered incidental to and included in the contract lump sum price bid in the schedule for drains for the appropriate dam.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02300

EARTHWORK

03/03

PART 1 GENERAL

1.1 DESCRIPTION OF WORK
1.2 REFERENCES
1.3 MEASUREMENT AND PAYMENT
1.4 SUBMITTALS
1.5 GEOTECHNICAL SITE CONDITIONS
1.5.1 Exploratory Borings
1.5.2 Laboratory Testing
1.5.3 Groundwater
1.6 CLASSIFICATION OF EXCAVATION
1.7 BLASTING

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 STRIPPING OF TOPSOIL
3.2 EXCAVATION
3.3 DISPOSAL OF EXCAVATED MATERIALS
3.4 BACKFILL
3.4.1 Common Fill
3.4.2 Placing Common Fill
3.5 WASTE BERMS
3.5.1 Materials
3.5.2 Placing Material in Waste Berms
3.6 PLACING TOPSOIL
3.7 TESTING
3.7.1 Materials Testing
3.7.2 Density Testing

-- End of Section Table of Contents --

SAVH-02300 (March 2003)

SECTION 02300

EARTHWORK
03/03

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

The work covered by this section consists of furnishing all plant, labor, materials, and equipment and performing all operations in connection with the earthwork required for the construction of the soil-cement shear walls and longitudinal walls in the Clemson Diversion Dams. Earthwork required to widen and repair and pave the access roads and reconstruct the curb and gutter at the access drive into the Upper Dam is not covered in this section, but shall be in accordance with the requirements of Section 02000 SITEWORK. Excavation and backfilling for the embankment trench drains to be installed immediately upstream of the longitudinal soil-cement walls are not covered in this section, but shall be in accordance with the requirements of Section 02250 DRAINS.

1.2 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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

*4

ASTM D 422	(1963; R 1998) Particle-Size Analysis of Soils
ASTM D 2487	(2000) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 4318	(2000) Liquid Limit, Plastic Limit, and Plasticity Index of Soils

1.3 MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for all earthwork required for construction of the soil-cement shear walls and longitudinal walls, but all costs for such work shall be included in the contract lump sum price bid in the schedule for sitework.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section

01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Earthwork Plan; G, ED

*4

Submit plans and a narrative that describes the equipment; methods and procedures; and order and sequence of work to be used to perform the required excavation; backfill and fill, and, especially, how the earthwork will be coordinated with the soil-cement mixing construction and how the mixing spoils will be dried and utilized in the backfill and fill. Submit at least 40 calendar days prior to the start of any excavation work.

SD-03 Product Data

Borrow Source; G, ED

Proposed source of borrow material, at least 40 calendar days prior to the beginning of the use of any borrow material.

1.5 GEOTECHNICAL SITE CONDITIONS

1.5.1 Exploratory Borings

Since the Clemson Upper and Lower Diversion Dams were constructed in 1960 and 1961, numerous borings have been performed off and on, related to seepage problems at the dams, for the design of concrete cutoff walls, and recent concerns about the loose foundation materials. In addition, subsurface data are available from installation logs of piezometers and monitoring wells. The borings included soil sampling of the dam embankment materials and the original foundation alluvial soils and coring of the foundation bedrock. Locations of the borings, piezometers and monitoring wells which fall within this contract and those considered related to the contract are shown on the drawings. Logs of the borings and instrument installations are included in Appendix A. The Government assumes no responsibility for interpretation or deductions made by the Contractor from the logs and borings. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristics of the subsurface materials of the region are to be expected and, if encountered, will not be considered as differing materially within the purview of the DIFFERING SITE CONDITIONS clause of the contract. Soil classifications shown on the logs are the result of laboratory and/or field visual-manual classifications, supplemented in some instances by index testing.

1.5.2 Laboratory Testing

The results of all laboratory index testing performed for the present seismic evaluation study of the dams are included in Appendix B. There has been considerable laboratory testing performed for the dams related to the seepage problems, design of concrete cutoff walls, and recent studies regarding the loose foundation materials. Testing has included index tests, undrained and drained triaxial shear tests, direct shear tests, laboratory vane shear tests, and dispersive soil tests on soil samples and petrographic analyses and compression tests on rock cores. The results of the testing are included in the following reports:

USACE (1981) Design Memorandum 32, "Rehabilitation of Clemson Lower

Diversion Dam, Volumes I and II."

USACE (1982) Design Memorandum 33, "Rehabilitation of Clemson Upper Diversion Dam."

GEI Consultants, Inc. (1994) "Seismic Evaluation of Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

GEI Consultants, Inc. (1995) "Supplemental Report for Seismic Evaluation of Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

GEI Consultants, Inc. (2002) "Design Summary Report, Clemson Upper and Lower Diversion Dams, Clemson, South Carolina."

The above reports are available for review and inspection at the Savannah District Office; to view the reports contact the Project Engineer, Ben Foreman at (912) 652-5370.

1.5.3 Groundwater
*4
The normal full pool for the Hartwell Lake is elevation 660. Time-history plots and cross-section plots of reservoir and piezometric levels for the period December 1995 to January 2002 for both dams are included in Appendix C. The plots are from the 2002 Annual Embankment Instrumentation Report for the Clemson Diversion Dams. The entire report is available for review and inspection at the Savannah District Office; to review the report contact the Project Engineer, Ben Foreman at (912) 652-5370. Also included in the appendix are additional recent water level readings for the piezometers and monitoring wells at the dams. Additional piezometers were installed at both dams in June 2003. Details of the piezometers and water level readings are included in Appendix C.

1.6 CLASSIFICATION OF EXCAVATION

No consideration will be given to the nature of the materials, and all excavation will be designated as unclassified excavation.

1.7 BLASTING

No blasting will be permitted.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 STRIPPING OF TOPSOIL

Within areas to be excavated or to receive fill, topsoil shall be stripped to full depth. Topsoil shall be spread on areas already graded and prepared for topsoil, or transported and deposited in stockpiles convenient to areas that are to receive application of the topsoil later, or at locations indicated or specified. Topsoil shall be kept separate from other excavated materials, brush, litter, objectional weeds, roots, stones larger than 2 inches in maximum dimension, and other materials that would interfere with planting and maintenance operations.

3.2 EXCAVATION

a. Excavation shall be made to the lines, grades and dimensions shown or

described on the drawings, established by the Contracting Officer, or proposed by the Contractor to better accommodate the soil-cement mixing construction and approved by the Contracting Officer.

*4

b. Bidders and the Contractor shall assume all responsibility for deductions and conclusions as to the nature of the materials to be excavated and the difficulties of making and maintaining the required excavations. The Contractor shall determine and provide safe excavation slopes and support meeting OSHA requirements.

c. The Government reserves the right, during the progress of the work, to vary the slopes, grades, or the dimensions of the excavations from those specified herein.

d. All necessary precautions shall be taken to preserve the material below and beyond the established lines of all excavation in the soundest possible condition.

e. Excavation shall be performed in the dry. Refer to Section 02140 DEWATERING for dewatering requirements. No excavation shall be made in frozen materials without written approval.

f. Any and all excess excavation for the convenience of the Contractor or overexcavation performed by the Contractor for any purpose or reason, except as may be ordered in writing by the Contracting Officer, and whether or not due to the fault of the Contractor, shall be at the expense of the Contractor. Where required to complete the work, all such excess excavation and overexcavation shall be refilled with materials designated by the Contracting Officer, and furnished and placed at the expense of and by the Contractor.

3.3 DISPOSAL OF EXCAVATED MATERIALS

a. So far as practicable, as determined by the Contracting Officer, all suitable materials from excavation required to permit the soil-cement mixing construction shall be used to backfill the excavation following completion of the soil-cement mixing construction.

*4

b. Excavated materials that are unsuitable or are in excess of backfill construction requirements shall be wasted. The disposal of all excavated materials that are to be wasted shall be subject to the approval of the Contracting Officer. Materials to be wasted shall be placed in the waste berm or disposed of at off-site locations approved for such disposal at the expense of the Contractor, at the Contractor's option. Construction debris such as concrete, wood, plastic, and steel shall be disposed of at suitable off-site locations at the expense of the Contractor.

c. Suitable excavated materials can be transported directly to and placed in backfill, provided the materials do not have a moisture content greater than that required for placement and compaction of backfill. When the excavated materials have a moisture content greater than that required for placement and compaction in the backfill, the materials shall be placed temporarily in stockpiles where the materials shall be manipulated and processed with disc harrows until the moisture content is reduced sufficiently to permit placement in accordance with these specifications. No additional payment will be made for processing and drying overly wet excavated suitable materials.

d. When the required excavation progresses at a faster rate than placement

in backfill is being accomplished, such excavated material shall be stockpiled at approved locations until its use is required.

3.4 BACKFILL

3.4.1 Common Fill

*4

For the purposes of these specifications, the term common fill refers to the earthfill materials used to backfill the excavations required for the soil-cement mixing construction. The material to be used for common fill shall be from the required excavations and shall be sandy and clayey silts, clay, silty and clayey sands, or other approved material from approved off-site borrow areas. Material from approved off-site borrow areas shall consist of satisfactory materials classified in accordance with ASTM D 2487 as SM, SC, SW-SC, CL, ML, CL-ML, CH, and MH.

3.4.2 Placing Common Fill

*4

a. The suitability of all materials for use as common fill shall be~~is~~ subject to the approval of the Contracting Officer. No materials shall be placed when either the materials or the foundation on which they would be placed is frozen. Excessively wet materials, as determined by the Contracting Officer, shall be stockpiled and shall be worked to reduce the moisture content to a satisfactory level. Common fill placement shall be stopped due to unsuitable weather conditions upon direction of the Contracting Officer.

b. No brush, roots, sod, or other perishable or unsuitable materials as determined by the field representative of the Contracting Officer shall be used in common fill.

*4

c. Placing shall be performed in a manner to prevent any disturbance or damage to cleanout riser pipes. A protective mound of fill material around cleanout riser pipes shall be maintained above the working surface at all times during placement of backfill/fill. The placement of the protective mound shall be by methods which will not cause disturbance nor damage to the riser pipes. The fill in the mound shall be brought up uniformly around the riser pipes; the use of hand labor will be required. Compaction of the fill in the mound shall be by power driven hand tampers suitable for the material being compacted. Care shall be taken to maintain the verticality of the riser pipes. Methods of placement and compaction shall be subject to approval by the Contracting Officer.~~All materials placed adjacent to a cleanout riser pipe shall be kept at approximately the same level as the placing of common fill progresses.~~

*4

d. Common fill shall be placed in horizontal layers not to exceed ~~12~~9 inches in loose thickness. The layers shall be uniformly spread, distributed, and otherwise manipulated during placement to such an extent that individual loads of material deposited on the fill will not remain intact, and large, open voids in the fill will be eliminated. Layers shall not be placed in a manner which causes shrinkage cracks and open voids from developing in previously placed layers.

e. Common fill shall be placed to the final grades shown or described on the drawings or as directed by the Contracting Officer.

*4

f. Common fill material shall be placed and compacted within such moisture content limits that will ensure a homogeneous fill without visible voids. The upper limit of moisture shall be that which will permit the operation

of the hauling and spreading ~~and compacting~~ equipment on the fill surface without causing heaving, quaking, rutting, cracking, shearing or excessive deformation of the fill. The lower limit shall be the moisture content above which a homogeneous fill without visible voids can be obtained. The Contractor shall excavate and remove and reprocess to a satisfactory moisture content any material which the Contracting Officer considers too wet or too dry, in accordance with the above criteria, to provide a satisfactory fill.

*4

g. The common fill shall be "traffic compacted" by the controlled movement of the hauling and spreading equipment. The hauling and spreading equipment shall be routed across the fill surface so that the compaction effort is uniformly distributed over the entire fill, and that the equipment is routed to the extent that will ensure complete coverage of the entire surface of each layer by the tires and/or treads of the hauling and spreading equipment, i.e., the entire surface area shall be contacted by either a tire or a tread. Equipment shall be routed so as to prevent excessive rutting of the fill surface. All ruts formed shall be broken up, leveled and recompacted before placing additional material.

*4

h. Common fill shall not be placed on wet mixing spoils or other soil-cement waste materials nor wet soils in the installation level ground surface. All mixing spoils and other soil-cement waste materials and wet soils shall be removed from the installation level ground surface before any placement of common fill thereon. The installation level ground surface shall be dried up following soil-cement construction prior to the placement of common fill. No common fill materials shall be placed until the installation level surface has been dried and suitably prepared, and approved by the Contracting Officer.

i. Common fill shall not be placed on a foundation or surface which contains frozen material. This prohibition encompasses all foundation types, including the natural ground, excavated surfaces, and all layers of previously placed common fill. All material that freezes or has been subjected to freeze-thaw action during the construction work, or during periods of temporary shutdowns, such as, but not limited to, nights, holidays, weekends, or winter shutdowns or earthwork operations, shall be removed to a depth that is acceptable to the Contracting Officer and replaced with new material. Alternatively, the material shall be thawed, dried, reworked, and recompacted to the specified criteria before additional material is placed. The Contracting Officer will determine when placement of fill shall cease due to cold weather. The Contracting Officer may elect to use average daily air temperatures, and/or physical observation of the soils for his determination. Common fill material shall not contain frozen clumps of soil, snow, or ice.

3.5 WASTE BERMS

3.5.1 Materials

If the mixing spoils can be mixed and blended with the common fill in such a manner that the resulting mixture can be satisfactorily placed and compacted in accordance with the specifications for placing common fill above, then excess mixing spoils remaining at the completion of the required work may be placed in waste berms constructed along the toe of each dam. Mixing spoils and soil mixed with spoils can be placed in the berms.

3.5.2 Placing Material in Waste Berms

The waste berms shall be constructed to the lines and grades shown on the drawings and as approved by the Contracting Officer. The material placed in the waste berms shall be placed in accordance with the requirements specified in paragraph 3.4.2 above for common fill, except that the material shall be placed in horizontal layers not exceeding 12 inches in loose thickness.

3.6 PLACING TOPSOIL

On areas to receive topsoil, the compacted subgrade soil shall be scarified to a 2-inch depth for bonding of topsoil with subsoil. Topsoil then shall be spread evenly to a thickness of 4 inches minimum and graded to the elevations and slopes shown. Topsoil shall not be spread when frozen or excessively wet or dry. Material required for topsoil in excess of that produced by excavation within the grading limits shall be obtained from off-site areas.

3.7 TESTING

3.7.1 Materials Testing

Soil classification tests shall be performed on common fill material from approved off-site borrow areas as required to confirm the acceptability of the soils. Soil classification tests shall be performed in accordance with ASTM D 2487. One initial classification test shall be required for each different classification of material to be utilized as common fill. As prescribed in ASTM D 2487, grain size analyses in accordance with ASTM D 422 and Atterberg limits in accordance with ASTM D 4318 shall be performed on each different classification. Additional tests shall be performed if noticeable changes in the material occur.

3.7.2 Density Testing

No density testing will be required for the common fill placed under the requirements of this section nor for the material placed in the waste berms.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02821A

FENCING

02/02

PART 1 GENERAL

1.1 REFERENCES
1.2 SUBMITTALS

PART 2 PRODUCTS

2.1 FENCE FABRIC
2.1.1 Chain Link Fence Fabric
2.2 GATES
2.3 POSTS
2.3.1 Metal Posts for Chain Link Fence
2.4 BRACES AND RAILS
2.5 WIRE
2.5.1 Tension Wire
2.6 ACCESSORIES
2.7 OMITTED
2.8 CONCRETE

PART 3 EXECUTION

3.1 INSTALLATION
3.2 EXCAVATION
3.3 POST INSTALLATION
3.3.1 Posts for Chain Link Fence
3.4 RAILS
3.4.1 Top Rail
3.4.2 Bottom Rail
3.5 BRACES AND TRUSS RODS
3.6 TENSION WIRES
3.7 CHAIN LINK FABRIC
3.8 BARBED WIRE SUPPORTING ARMS AND BARBED WIRE
3.8.1 General Requirements
3.9 GATE INSTALLATION
3.10 OMITTED
3.11 GROUNDING

-- End of Section Table of Contents --

UFGS-02821A (February 2002)

SECTION 02821A

FENCING
02/02

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 in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 121	(1999) Zinc-Coated (Galvanized) Steel Barbed Wire
ASTM A 153/A 153M	(2001) Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 392	(1996) Zinc-Coated Steel Chain-Link Fence Fabric
ASTM A 491	(1996) Aluminum-Coated Steel Chain-Link Fence Fabric
ASTM A 585	(1997) Aluminum-Coated Steel Barbed Wire
ASTM A 780	(2000) Repair of Damaged and Uncoated Areas of Hot-Dipped Galvanized Coatings
ASTM A 824	(1995) Metallic-Coated Steel Marcelled Tension Wire for Use With Chain Link Fence
ASTM C 94/C 94M	(2000e2) Ready-Mixed Concrete
ASTM F 1043	(2000) Strength and Protective Coatings on Metal Industrial Chain-Link Fence Framework
ASTM F 1083	(1997) Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
ASTM F 1184	(1994) Industrial and Commercial Horizontal Slide Gates
ASTM F 626	(1996a) Fence Fittings
ASTM F 900	(1994) Industrial and Commercial Swing Gates

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 will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Details; G, RE

Drawings shall show post sizes and sections; post setting and bracing, gate details, barbed wire support arms; details of attachment of fabric and barbed wire to support members; and any other details required to erect the fence along the lines indicated.

SD-07 Certificates

Chain Link Fence; G, RE

Statement, signed by an official authorized to certify on behalf of the manufacturer, attesting that the chain link fence and component materials meet the specified requirements.

PART 2 PRODUCTS

2.1 FENCE FABRIC

Fence fabric shall conform to the following:

2.1.1 Chain Link Fence Fabric

ASTM A 392, Class 1, zinc-coated steel wire with minimum coating weight of 1.2 ounces of zinc per square foot of coated surface, or ASTM A 491, Type I, aluminum-coated steel wire. Fabric shall be fabricated of 9 gauge wire woven in 2 inch mesh. Fabric height shall be as shown. Fabric shall be twisted and barbed on the top selvage and knuckled on the bottom selvage.

2.2 GATES

ASTM F 900 and/or ASTM F 1184. Gate shall be the type and swing shown. Gate frames shall conform to strength and coating requirements of ASTM F 1083 for Group IA, steel pipe, with external coating Type A, nominal pipe size (NPS) 1-1/2. Gate fabric shall be as specified for chain link fabric. Gate leaves more than 8 feet wide shall have either intermediate members and diagonal truss rods or shall have tubular members as necessary to provide rigid construction, free from sag or twist. Gate leaves less than 8 feet wide shall have truss rods or intermediate braces. Gate fabric shall be attached to the gate frame by method standard with the manufacturer except that welding will not be permitted. Latches, hinges, stops, keepers, rollers, and other hardware items shall be furnished as required for the operation of the gate. Latches shall be arranged for padlocking so that the padlock will be accessible from both sides of the gate. Stops shall be provided for holding the gates in the open position. For high security applications, each end member of gate frames shall be extended sufficiently above the top member to carry three strands of barbed wire in horizontal alignment with barbed wire strands on the fence.

2.3 POSTS

2.3.1 Metal Posts for Chain Link Fence

ASTM F 1083, zinc-coated. Group IA, with external coating Type A steel pipe. Group IC steel pipe, zinc-coated with external coating Type A or Type B and Group II , roll-formed steel sections, shall meet the strength and coating requirements of ASTM F 1043. Sizes shall be to match existing fencing and gates. Line posts and terminal (corner, gate, and pull) posts selected shall be of the same designation throughout the fence. Gate post shall be for the gate type specified subject to the limitation specified in ASTM F 900 and/or ASTM F 1184.

2.4 BRACES AND RAILS

ASTM F 1083, zinc-coated, Group IA, steel pipe, size NPS 1-1/4. Group IC steel pipe, zinc-coated, shall meet the strength and coating requirements of ASTM F 1043. Group II, formed steel sections, size 1-21/32 inch, conforming to ASTM F 1043, may be used as braces and rails if Group II line posts are furnished.

2.5 WIRE

2.5.1 Tension Wire

Tension wire shall be Type I or Type II, Class 2 coating, in accordance with ASTM A 824.

2.6 ACCESSORIES

ASTM F 626. Ferrous accessories shall be zinc or aluminum coated. Truss rods shall be furnished for each terminal post. Truss rods shall be provided with turnbuckles or other equivalent provisions for adjustment. Barbed wire shall be 2 strand, 12-1/2 gauge wire, zinc-coated, Class 3 in accordance with ASTM A 121 or aluminum coated Type I in accordance with ASTM A 585. Barbed wire shall be four-point barbed type steel wire. Barbed wire support arms shall be the single arm type and of the design required for the post furnished. Tie wire for attaching fabric to rails, braces, and posts shall be 9 gauge steel wire and match the coating of the fence fabric. Miscellaneous hardware coatings shall conform to ASTM A 153/A 153M unless modified.

2.7 OMITTED

2.8 CONCRETE

ASTM C 94/C 94M, using 3/4 inch maximum size aggregate, and having minimum compressive strength of 3000 psi at 28 days. Grout shall consist of one part portland cement to three parts clean, well-graded sand and the minimum amount of water to produce a workable mix.

PART 3 EXECUTION

3.1 INSTALLATION

Fence shall be installed to match original fence lines and grades. The area on either side of the fence line shall be cleared as required. Line posts shall be spaced equidistant at intervals not exceeding 10 feet. Terminal (corner, gate, and pull) posts shall be set at abrupt changes in vertical and horizontal alignment. Fabric shall be continuous between

terminal posts; however, runs between terminal posts shall not exceed 500 feet. Any damage to galvanized surfaces, including welding, shall be repaired with paint containing zinc dust in accordance with ASTM A 780.

3.2 EXCAVATION

Post holes shall be cleared of loose material. Waste material shall be spread where directed. The ground surface irregularities along the fence line shall be eliminated to the extent necessary to maintain a 2-inch clearance between the bottom of the fabric and finish grade.

3.3 POST INSTALLATION

3.3.1 Posts for Chain Link Fence

Posts shall be set plumb and in alignment. Except where solid rock is encountered, posts shall be set in concrete to the depth indicated on the drawings. Where solid rock is encountered with no overburden, posts shall be set to a minimum depth of 18 inches in rock. Where solid rock is covered with an overburden of soil or loose rock, posts shall be set to the minimum depth indicated on the drawing unless a penetration of 18 inches in solid rock is achieved before reaching the indicated depth, in which case depth of penetration shall terminate. All portions of posts set in rock shall be grouted. Portions of posts not set in rock shall be set in concrete from the rock to ground level. Posts set in concrete shall be set in holes not less than the diameter shown on the drawings. Diameters of holes in solid rock shall be at least 1 inch greater than the largest cross section of the post. Concrete and grout shall be thoroughly consolidated around each post, shall be free of voids and finished to form a dome. Concrete and grout shall be allowed to cure for 72 hours prior to attachment of any item to the posts. Group II line posts may be mechanically driven, for temporary fence construction only, if rock is not encountered. Driven posts shall be set to a minimum depth of 3 feet and shall be protected with drive caps when being set. For high security fences, fence post rigidity shall be tested by applying a 50 pound force on the post, perpendicular to the fabric, at 5 feet above ground; post movement measured at the point where the force is applied shall be less than or equal to 3/4 inch from the relaxed position; every tenth post shall be tested for rigidity; when a post fails this test, further tests on the next four posts on either side of the failed post shall be made; all failed posts shall be removed, replaced, and retested at the Contractor's expense.

3.4 RAILS

3.4.1 Top Rail

Top rail shall be supported at each post to form a continuous brace between terminal posts. Where required, sections of top rail shall be joined using sleeves or couplings that will allow expansion or contraction of the rail. Top rail, if required to match existing fencing, shall be installed as indicated on the drawings.

3.4.2 Bottom Rail

The bottom rail shall be bolted to double rail ends and double rail ends shall be securely fastened to the posts. Bolts shall be peened to prevent easy removal. Bottom rail shall be installed before chain link fabric.

3.5 BRACES AND TRUSS RODS

Braces and truss rods shall be installed as indicated and in conformance with the standard practice for the fence furnished. Horizontal (compression) braces and diagonal truss (tension) rods shall be installed on fences over 6 feet in height. A center brace or 2 diagonal truss rods shall be installed on 12 foot fences. Braces and truss rods shall extend from terminal posts to line posts. Diagonal braces shall form an angle of approximately 40 to 50 degrees with the horizontal.

3.6 TENSION WIRES

Tension wires shall be installed along the top and bottom of the fence line and attached to the terminal posts of each stretch of the fence. Top tension wires shall be installed within the top 4 inches of the installed fabric. Bottom tension wire shall be installed within the bottom 6 inches of the installed fabric. Tension wire shall be pulled taut and shall be free of sag.

3.7 CHAIN LINK FABRIC

Chain link fabric shall be installed on the side of the post indicated. Fabric shall be attached to terminal posts with stretcher bars and tension bands. Bands shall be spaced at approximately 15-inch intervals. The fabric shall be installed and pulled taut to provide a smooth and uniform appearance free from sag, without permanently distorting the fabric diamond or reducing the fabric height. Fabric shall be fastened to line posts at approximately 15-inch intervals and fastened to all rails and tension wires at approximately 12-inch intervals. Fabric shall be cut by untwisting and removing pickets. Splicing shall be accomplished by weaving a single picket into the ends of the rolls to be joined. The bottom of the installed fabric shall be plus or minus 2 inches above the ground.

3.8 BARBED WIRE SUPPORTING ARMS AND BARBED WIRE

3.8.1 General Requirements

Barbed wire supporting arms and barbed wire shall be installed as indicated and as recommended by the manufacturer. Supporting arms shall be anchored to the posts in a manner to prevent easy removal with hand tools. Barbed wire shall be pulled taut and attached to the arms with clips or other means that will prevent easy removal.

3.9 GATE INSTALLATION

Gates shall be installed at the locations shown. Hinged gates shall be mounted to swing as indicated. Latches, stops, and keepers shall be installed as required. Hinge pins and hardware shall be welded or otherwise secured to prevent removal.

3.10 OMITTED

3.11 GROUNDING

Fences shall be grounded on each side of all gates, at each corner, at the closest approach to each building located within 50 feet of the fence, and where the fence alignment changes more than 15 degrees. Grounding locations shall not exceed 650 feet. Each gate panel shall be bonded with a flexible bond strap to its gate post. Fences crossed by powerlines of 600 volts or more shall be grounded at or near the point of crossing and at

distances not exceeding 150 feet on each side of crossing. Ground conductor shall consist of No. 8 AWG solid copper wire. Grounding electrodes shall be 3/4 inch by 10 foot long copper-clad steel rod. Electrodes shall be driven into the earth so that the top of the electrode is at least 6 inches below the grade. Where driving is impracticable, electrodes shall be buried a minimum of 12 inches deep and radially from the fence. The top of the electrode shall be not less than 2 feet or more than 8 feet from the fence. Ground conductor shall be clamped to the fence and electrodes with bronze grounding clamps to create electrical continuity between fence posts, fence fabric, and ground rods. After installation the total resistance of fence to ground shall not be greater than 25 ohms.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02921A

SEEDING

01/02

PART 1 GENERAL

1.1 DESCRIPTION OF WORK
1.2 REFERENCES
1.3 SUBMITTALS
1.4 SOURCE INSPECTION
1.5 DELIVERY, INSPECTION, STORAGE, AND HANDLING
1.5.1 Delivery
1.5.1.1 Delivered Topsoil
1.5.1.2 Soil Amendments
1.5.1.3 Pesticide
1.5.2 Inspection
1.5.3 Storage
1.5.4 Handling
1.5.5 Time Limitation

PART 2 PRODUCTS

2.1 SEED
2.1.1 Seed Classification
2.1.2 Permanent Seed Species and Mixtures
2.1.3 Temporary Seed Species
2.1.4 Quality
2.1.5 Seed Mixing
2.1.6 Substitutions
2.2 TOPSOIL
2.3 SOIL AMENDMENTS
2.3.1 pH Adjuster
2.3.1.1 Limestone
2.3.1.2 Hydrated Lime
2.3.1.3 Burnt Lime
2.3.2 Fertilizer
2.3.3 Nitrogen Carrier Fertilizer
2.3.4 Organic Material
2.3.4.1 Bonemeal
2.3.4.2 Rotted Manure
2.3.4.3 Decomposed Wood Derivatives
2.3.4.4 Omitted
2.3.4.5 Worm Castings
2.3.5 Soil Conditioner
2.3.5.1 Sand
2.3.5.2 Super Absorbent Polymers
2.3.5.3 Calcined Clay
2.3.5.4 Gypsum
2.3.5.5 Expanded Shale, Clay, or Slate (ESCS)
2.4 MULCH
2.4.1 Straw
2.4.2 Hay

2.4.3 Wood Cellulose Fiber
2.4.4 Paper Fiber
2.5 ASPHALT ADHESIVE
2.6 WATER
2.7 PESTICIDE
2.8 SURFACE EROSION CONTROL MATERIAL
2.8.1 Surface Erosion Control Blanket
2.8.2 Surface Erosion Control Fabric
2.8.3 Surface Erosion Control Net
2.8.4 Surface Erosion Control Chemicals
2.8.5 Hydrophilic Colloids
2.8.6 Erosion Control Material Anchors

PART 3 EXECUTION

3.1 INSTALLING SEED TIME AND CONDITIONS
3.1.1 Seeding Time
3.1.2 Seeding Conditions
3.1.3 Equipment Calibration
3.1.4 Soil Test
3.2 SITE PREPARATION
3.2.1 Finished Grade and Topsoil
3.2.2 Application of Soil Amendments
3.2.2.1 Applying pH Adjuster
3.2.2.2 Applying Fertilizer
3.2.2.3 Applying Soil Conditioner
3.2.2.4 Applying Super Absorbent Polymers
3.2.3 Tillage
3.2.4 Prepared Surface
3.2.4.1 Preparation
3.2.4.2 Omitted
3.2.4.3 Debris
3.2.4.4 Protection
3.3 INSTALLATION
3.3.1 Installing Seed
3.3.1.1 Broadcast Seeding
3.3.1.2 Drill Seeding
3.3.1.3 Rolling
3.3.2 Hydroseeding
3.3.3 Mulching
3.3.3.1 Hay or Straw Mulch
3.3.3.2 Mechanical Anchor
3.3.3.3 Asphalt Adhesive Tackifier
3.3.3.4 Non-Asphaltic Tackifier
3.3.3.5 Asphalt Adhesive Coated Mulch
3.3.3.6 Wood Cellulose Fiber, Paper Fiber, and Recycled Paper
3.3.4 Watering Seed
3.4 SURFACE EROSION CONTROL
3.4.1 Surface Erosion Control Material
3.4.2 Temporary Seeding
3.4.2.1 Soil Amendments
3.4.2.2 Remaining Soil Amendments
3.5 QUANTITY CHECK
3.6 APPLICATION OF PESTICIDE
3.6.1 Technical Representative
3.6.2 Application
3.7 RESTORATION AND CLEAN UP
3.7.1 Restoration
3.7.2 Clean Up

3.8 PROTECTION OF INSTALLED AREAS
3.9 SEED ESTABLISHMENT PERIOD
3.9.1 Commencement
3.9.2 Satisfactory Stand of Grass Plants
3.9.3 Maintenance During Establishment Period
3.9.3.1 Mowing
3.9.3.2 Post-Fertilization
3.9.3.3 Pesticide Treatment
3.9.3.4 Repair or Reinstall
3.9.3.5 Maintenance Record

-- End of Section Table of Contents --

UFGS-02921A (January 2002)

SECTION 02921A

SEEDING
01/02

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

The work covered by this section consists of furnishing all plant, labor, equipment and material and performing all operations in connection with the establishment of a permanent grass cover, and a temporary grass cover, where applicable, on all open earth areas disturbed under this contract or previously bare, and any other area specifically designated, in accordance with the contract drawings and these specifications.

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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 602	(1995a) Agricultural Liming Materials
ASTM D 2028	(1976; R 1997) Cutback Asphalt (Rapid-Curing Type)
ASTM D 4972	(1995a) pH of Soils
ASTM D 5268	(1992; R 1996) Topsoil Used for Landscaping Purposes
ASTM D 5883	(1996el) Use of Rotary Kiln Produced Expanded Shale, Clay or Slate (ESCS) as a Mineral Amendment in Topsoil Used for Landscaping and Related Purposes
ASTM D 977	(1998) Emulsified Asphalt

U.S. DEPARTMENT OF AGRICULTURE (USDA)

AMS Seed Act	(1995) Federal Seed Act Regulations Part 201

1.3 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 will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment; G, RE
Surface Erosion Control Material; G, RE
Chemical Treatment Material; G, RE

Manufacturer's literature including physical characteristics, application and installation instructions for equipment, surface erosion control material and chemical treatment material.

A listing of equipment to be used for the seeding operation.

Delivery; G, RE

Delivery schedule.

Finished Grade and Topsoil; G, RE

Finished grade status.

Topsoil; G, RE

Availability of topsoil from the stripping and stock piling operation.

Quantity Check; G, RE

Bag count or bulk weight measurements of material used compared with area covered to determine the application rate and quantity installed.

Seed Establishment Period; G, RE

Calendar time period for the seed establishment period. When there is more than one seed establishment period, the boundaries of the seeded area covered for each period shall be described.

Maintenance Record; G, RE

Maintenance work performed, area repaired or reinstalled, diagnosis for unsatisfactory stand of grass plants.

Application of Pesticide; G, RE

Pesticide treatment plan with sequence of treatment work with dates and times. The pesticide trade name, EPA registration number, chemical composition, formulation, concentration of original and diluted material, application rate of active ingredients, method of application, area treated, amount applied; and the name and state license number of the state certified applicator shall be included.

SD-04 Samples

Delivered Topsoil; G, RE

Samples taken from several locations at the source.

Soil Amendments; G, RE

A 10-pound sample.

Mulch; G, RE

A 10-pound sample.

SD-06 Test Reports

Equipment Calibration; G, RE

Certification of calibration tests conducted on the equipment used in the seeding operation.

Soil Test; G, RE

Certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

SD-07 Certificates

Seed; G, RE
Topsoil; G, RE
pH Adjuster; G, RE
Fertilizer; G, RE
Organic Material; G, RE
Soil Conditioner; G, RE
Mulch; G, RE
Asphalt Adhesive; G, RE
Pesticide; G, RE

Prior to the delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following:

a. Seed. Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, date tested, and State certification.

b. Topsoil. Particle size, pH, organic matter content, textural class, soluble salts, chemical and mechanical analyses.

c. pH Adjuster. Calcium carbonate equivalent and sieve analysis.

d. Fertilizer. Chemical analysis and composition percent.

e. Organic Material: Composition and source.

f. Soil Conditioner: Composition and source.

g. Mulch: Composition and source.

h. Asphalt Adhesive: Composition.

i. Pesticide. EPA registration number and registered uses.

1.4 SOURCE INSPECTION

The source of delivered topsoil shall be subject to inspection.

1.5 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.5.1 Delivery

A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.

1.5.1.1 Delivered Topsoil

Prior to the delivery of any topsoil, its availability shall be verified in paragraph TOPSOIL. A soil test shall be provided for topsoil delivered to the site.

1.5.1.2 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.5.1.3 Pesticide

Pesticide material shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses.

1.5.2 Inspection

Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected. Other materials shall be inspected for compliance with specified requirements. The following shall be rejected: open soil amendment containers or wet soil amendments; topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter; and topsoil that contains viable plants and plant parts. Unacceptable materials shall be removed from the job site.

1.5.3 Storage

Materials shall be stored in approved areas. Seed, lime, and fertilizer shall be stored in cool, dry locations away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with seeding operation materials.

1.5.4 Handling

Except for bulk deliveries, materials shall not be dropped or dumped from vehicles.

1.5.5 Time Limitation

Hydroseeding time limitation for holding seed in the slurry shall be a

maximum 24 hours.

PART 2 PRODUCTS

2.1 SEED

2.1.1 Seed Classification

State-certified seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS Seed Act and applicable state seed laws.

2.1.2 Permanent Seed Species and Mixtures

The kinds of seed, the planting dates and the rates of application of seed shall be as shown below. All rates shown are in pounds per acre.

Planting Dates, March 15 - August 31

Common Name of Seed	Rate
Common Bermuda (hulled)	65
Sericea Lespedesza (scarified)	50
Kentucky 31 Fescue	30
Pensacola Bahia	25

Planting Dates, August 31 - March 14

Common Name of Seed	Rate
Common Bermuda (unhulled)	80
Sericea Lespedesza (unhulled, unscarified)	60
Kentucky 31 Fescue	30
Annual Rye Grass	20
Rye Grain	20

2.1.3 Temporary Seed Species

The kinds of seed, the planting dates, and the rates of application of seed shall be as shown below. All rates shown are in pounds per acre.

Planting Date	Common Name of Seed	Rate
1 Sep - 15 Apr	Rye Grain	60
	Annual Rye Grass	20
16 Apr - 31 Aug	Brown Top Millet	50

2.1.4 Quality

Weed seed shall be a maximum 1 percent by weight of the total mixture.

2.1.5 Seed Mixing

The mixing of seed shall be by the seed supplier prior to delivery, or on site, if performed in the presence of the Quality Control Manager.

2.1.6 Substitutions

Substitutions will not be allowed without written request and approval from the Contracting Officer.

2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. When available, the topsoil shall be the existing surface soil stripped and stockpiled onsite in accordance with Section 02300 EARTHWORK. When additional topsoil is required beyond the available topsoil from the stripping operation, topsoil shall be delivered and amended as recommended by the soil test for the seed specified. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter. Topsoil shall be free from viable plants and plant parts. Topsoil shall be tested at several locations over the site to verify if satisfactory organic matter exists. Contractor has the option to add acceptable organic matter to obtain a soil with a minimum organic matter content of 1 percent by analysis. The assistance of the local soil conservation service (USDA), or agricultural extension service (county agent) office is recommended.

2.3 SOIL AMENDMENTS

Soil amendments shall consist of pH adjuster, fertilizer, organic material and soil conditioners meeting the following requirements. Vermiculite shall not be used.

2.3.1 pH Adjuster

The pH adjuster shall be an agricultural liming material in accordance with ASTM C 602. These materials may be burnt lime, hydrated lime, ground limestone, sulfur, or shells. The pH adjuster shall be used to create a favorable soil pH for the plant material specified.

2.3.1.1 Limestone

Limestone material shall contain a minimum calcium carbonate equivalent of 80 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and a minimum 55 percent shall pass through a No. 60 sieve. To raise soil pH, ground limestone shall be used.

2.3.1.2 Hydrated Lime

Hydrated lime shall contain a minimum calcium carbonate equivalent of 110 percent. Gradation: A minimum 100 percent shall pass through a No. 8 sieve and a minimum 97 percent shall pass through a No. 60 sieve.

2.3.1.3 Burnt Lime

Burnt lime shall contain a minimum calcium carbonate equivalent of 140 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and a minimum 35 percent shall pass through a No. 60 sieve.

2.3.2 Fertilizer

It shall be as recommended by the soil test. Fertilizer shall be controlled release commercial grade, free flowing, uniform in composition, and consist of a nitrogen-phosphorus-potassium ratio. The fertilizer shall be derived from sulphur coated urea, urea formaldehyde, plastic or polymer

coated pills, or isobutylenediurea (IBDU). Fertilizer shall be balanced with the inclusion of trace minerals and micro-nutrients.

2.3.3 Nitrogen Carrier Fertilizer

It shall be as recommended by the soil test. Nitrogen carrier fertilizer shall be commercial grade, free flowing, and uniform in composition. The fertilizer may be a liquid nitrogen solution.

2.3.4 Organic Material

Organic material shall consist of either bonemeal, rotted manure, decomposed wood derivatives, or worm castings.

2.3.4.1 Bonemeal

Bonemeal shall be finely ground, steamed bone product containing from 2 to 4 percent nitrogen and 16 to 40 percent phosphoric acid.

2.3.4.2 Rotted Manure

Rotted manure shall be unleached horse, chicken or cattle manure containing a maximum 25 percent by volume of straw, sawdust, or other bedding materials. It shall contain no chemicals or ingredients harmful to plants. The manure shall be heat treated to kill weed seeds and be free of stones, sticks, and soil.

2.3.4.3 Decomposed Wood Derivatives

Decomposed wood derivatives shall be ground bark, sawdust, yard trimmings, or other wood waste material that is free of stones, sticks, soil, and toxic substances harmful to plants, and is fully composted or stabilized with nitrogen.

2.3.4.4 Omitted

2.3.4.5 Worm Castings

Worm castings shall be screened from worms and food source, and shall be commercially packaged.

2.3.5 Soil Conditioner

Soil conditioner shall be sand, super absorbent polymers, calcined clay, or gypsum for use singly or in combination to meet the requirements of the soil test.

2.3.5.1 Sand

Sand shall be clean and free of toxic materials. Gradation: A minimum 95 percent by weight shall pass a No. 10 sieve and a minimum 10 percent by weight shall pass a No. 16 sieve. Greensand shall be balanced with the inclusion of trace minerals and nutrients.

2.3.5.2 Super Absorbent Polymers

To improve water retention in soils, super absorbent polymers shall be sized and applied according to the manufacturer's recommendations. Polymers shall be added as a soil amendment and be cross-linked

polyacrylamide, with an absorption capacity of 250-400 times its weight. Polymers shall also be added to the seed and be a starch grafted polyacrylonitrite, with graphite added as a tacky sticker. It shall have an absorption capacity of 100 plus times its weight.

2.3.5.3 Calcined Clay

Calcined clay shall be granular particles produced from montmorillonite clay calcined to a minimum temperature of 1200 degrees F. Gradation: A minimum 90 percent shall pass a No. 8 sieve; a minimum 99 percent shall be retained on a No. 60 sieve; and a maximum 2 percent shall pass a No. 100 sieve. Bulk density: A maximum 40 pounds per cubic foot.

2.3.5.4 Gypsum

Gypsum shall be commercially packaged, free flowing, and a minimum 95 percent calcium sulfate by volume.

2.3.5.5 Expanded Shale, Clay, or Slate (ESCS)

Rotary kiln produced ESCS material shall be in conformance with ASTM D 5883.

2.4 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.4.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.4.2 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings, furnished in an air-dry condition suitable for placing with commercial mulch-blowing equipment.

2.4.3 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate placement during application. Composition on air-dry weight basis: 9 to 15 percent moisture, pH range from 4.5 to 6.0.

2.4.4 Paper Fiber

Paper fiber mulch shall be recycled news print that is shredded for the purpose of mulching seed.

2.5 ASPHALT ADHESIVE

Asphalt adhesive shall conform to the following: Emulsified asphalt, conforming to ASTM D 977, Grade SS-1; and cutback asphalt, conforming to ASTM D 2028, Designation RC-70.

2.6 WATER

Water shall be the responsibility of the Contractor, unless otherwise noted. Water shall not contain elements toxic to plant life.

2.7 PESTICIDE

Pesticide shall be insecticide, herbicide, fungicide, nematocide, rodenticide or miticide. For the purpose of this specification, a soil fumigant shall have the same requirements as a pesticide. The pesticide material shall be EPA registered and approved.

2.8 SURFACE EROSION CONTROL MATERIAL

Surface erosion control material shall conform to the following:

2.8.1 Surface Erosion Control Blanket

Blanket shall be machine produced mat of wood excelsior formed from a web of interlocking wood fibers; covered on one side with either knitted straw blanket-like mat construction; covered with biodegradable plastic mesh; or interwoven biodegradable thread, plastic netting, or twisted kraft paper cord netting.

2.8.2 Surface Erosion Control Fabric

Fabric shall be knitted construction of polypropylene yarn with uniform mesh openings 3/4 to 1 inch square with strips of biodegradable paper. Filler paper strips shall have a minimum life of 6 months.

2.8.3 Surface Erosion Control Net

Net shall be heavy, twisted jute mesh, weighing approximately 1.22 pounds per linear yard and 4 feet wide with mesh openings of approximately 1 inch square.

2.8.4 Surface Erosion Control Chemicals

Chemicals shall be high-polymer synthetic resin or cold-water emulsion of selected petroleum resins.

2.8.5 Hydrophilic Colloids

Hydrophilic colloids shall be physiologically harmless to plant and animal life without phytotoxic agents. Colloids shall be naturally occurring, silicate powder based, and shall form a water insoluble membrane after curing. Colloids shall resist mold growth.

2.8.6 Erosion Control Material Anchors

Erosion control anchors shall be as recommended by the manufacturer.

PART 3 EXECUTION

3.1 INSTALLING SEED TIME AND CONDITIONS

3.1.1 Seeding Time

Seed shall be installed from Mar 15 to Aug 31 for spring and summer establishment; and from Aug 31 to Mar 14 for fall and winter establishment.

3.1.2 Seeding Conditions

Seeding operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the seeding operations, proposed alternate times shall be submitted for approval.

3.1.3 Equipment Calibration

Immediately prior to the commencement of seeding operations, calibration tests shall be conducted on the equipment to be used. These tests shall confirm that the equipment is operating within the manufacturer's specifications and will meet the specified criteria. The equipment shall be calibrated a minimum of once every day during the operation. The calibration test results shall be provided within 1 week of testing.

3.1.4 Soil Test

Delivered topsoil, existing soil in smooth graded areas, and stockpiled topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts analysis, and mechanical analysis. Sample collection on site shall be random over the entire site. Sample collection for stockpiled topsoil shall be at different levels in the stockpile. The soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. The test shall determine the quantities and type of soil amendments required to meet local growing conditions for the seed species specified.

3.2 SITE PREPARATION

3.2.1 Finished Grade and Topsoil

The Contractor shall verify that finished grades are as indicated on drawings, and the placing of topsoil, smooth grading, and compaction requirements have been completed in accordance with Section 02300 EARTHWORK, prior to the commencement of the seeding operation.

3.2.2 Application of Soil Amendments

3.2.2.1 Applying pH Adjuster

The pH adjuster shall be applied as recommended by the soil test. The pH adjuster shall be incorporated into the soil to a maximum 4-inch depth or may be incorporated as part of the tillage operation.

3.2.2.2 Applying Fertilizer

The fertilizer shall be applied as recommended by the soil test. Fertilizer shall be incorporated into the soil to a maximum 4-inch depth or may be incorporated as part of the tillage or hydroseeding operation.

3.2.2.3 Applying Soil Conditioner

The soil conditioner shall be as recommended by the soil test. The soil conditioner shall be spread uniformly over the soil a minimum 1 inch depth and thoroughly incorporated by tillage into the soil to a maximum 4-inch depth.

3.2.2.4 Applying Super Absorbent Polymers

Polymers shall be spread uniformly over the soil as recommended by the manufacturer and thoroughly incorporated by tillage into the soil to a maximum 4-inch depth.

3.2.3 Tillage

Soil on slopes up to a maximum 3-horizontal-to-1-vertical shall be tilled to a minimum 4-inch depth. On slopes between 3-horizontal-to-1-vertical and 1-horizontal-to-1 vertical, the soil shall be tilled to a minimum 2-inch depth by scarifying with heavy rakes, or other method. Rototillers shall be used where soil conditions and length of slope permit. On slopes 1-horizontal-to-1 vertical and steeper, no tillage is required. Drainage patterns shall be maintained as indicated on drawings. Areas compacted by construction operations shall be completely pulverized by tillage. Soil used for repair of surface erosion or grade deficiencies shall conform to topsoil requirements. The pH adjuster, fertilizer, and soil conditioner may be applied during this procedure.

3.2.4 Prepared Surface

3.2.4.1 Preparation

The prepared surface shall be a maximum 1 inch below the adjoining grade of any surfaced area. New surfaces shall be blended to existing areas. The prepared surface shall be completed with a light raking to remove debris.

3.2.4.2 Omitted

3.2.4.3 Debris

Debris and stones over a maximum 3 inches in any dimension shall be removed from the surface.

3.2.4.4 Protection

Areas with the prepared surface shall be protected from compaction or damage by vehicular or pedestrian traffic and surface erosion.

3.3 INSTALLATION

Prior to installing seed, any previously prepared surface compacted or damaged shall be reworked to meet the requirements of paragraph SITE PREPARATION. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution.

3.3.1 Installing Seed

Seeding method shall be broadcast seeding, drill seeding, or hydroseeding. Seeding procedure shall ensure even coverage. Gravity feed applicators, which drop seed directly from a hopper onto the prepared soil, shall not be used because of the difficulty in achieving even coverage, unless otherwise approved. Absorbent polymer powder shall be mixed with the dry seed at the rate recommended by the manufacturer.

3.3.1.1 Broadcast Seeding

Half the total rate of seed application shall be broadcast in 1 direction, with the remainder of the seed rate broadcast at 90 degrees from the first direction. Seed shall be covered a maximum 1/4 inch depth by disk harrow, steel mat drag, cultipacker, or other approved device.

3.3.1.2 Drill Seeding

Seed shall be uniformly drilled to a maximum 1/2 inch depth, using equipment having drills a maximum 7 inches distance apart. Row markers shall be used with the drill seeder. Half the total rate of seed application shall be drilled in one direction, with the remainder of the seed rate drilled at 90 degrees from the first direction. The drilling equipment shall be maintained with half full seed boxes during the seeding operations.

3.3.1.3 Rolling

The entire area shall be firmed with a roller not exceeding 90 pounds per foot roller width. Slopes over a maximum 3-horizontal-to-1 vertical shall not be rolled. Areas seeded with seed drills equipped with rollers shall not be rolled.

3.3.2 Hydroseeding

Seed and fertilizer shall be added to water and thoroughly mixed to meet the rates specified. The time period for the seed to be held in the slurry shall be a maximum 24 hours. Wood cellulose fiber mulch and tackifier shall be added at the rates recommended by the manufacturer after the seed, fertilizer, and water have been thoroughly mixed to produce a homogeneous slurry. Slurry shall be uniformly applied under pressure over the entire area. The hydroseeded area shall not be rolled.

3.3.3 Mulching

3.3.3.1 Hay or Straw Mulch

Hay or straw mulch shall be spread uniformly at the rate of 2 tons per acre. Mulch shall be spread by hand, blower-type mulch spreader, or other approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of steep slopes, and continued uniformly until the area is covered. The mulch shall not be bunched or clumped. Sunlight shall not be completely excluded from penetrating to the ground surface. All areas installed with seed shall be mulched on the same day as the seeding. Mulch shall be anchored immediately following spreading.

3.3.3.2 Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer; a scalloped-disk land packer designed to force mulch into the soil surface; or other suitable equipment.

3.3.3.3 Asphalt Adhesive Tackifier

Asphalt adhesive tackifier shall be sprayed at a rate between 10 to 13 gallons per 1000 square feet. Sunlight shall not be completely excluded from penetrating to the ground surface.

3.3.3.4 Non-Asphaltic Tackifier

Hydrophilic colloid shall be applied at the rate recommended by the manufacturer, using hydraulic equipment suitable for thoroughly mixing with water. A uniform mixture shall be applied over the area.

3.3.3.5 Asphalt Adhesive Coated Mulch

Hay or straw mulch may be spread simultaneously with asphalt adhesive applied at a rate between 10 to 13 gallons per 1000 square feet, using power mulch equipment which shall be equipped with suitable asphalt pump and nozzle. The adhesive-coated mulch shall be applied evenly over the surface. Sunlight shall not be completely excluded from penetrating to the ground surface.

3.3.3.6 Wood Cellulose Fiber, Paper Fiber, and Recycled Paper

Wood cellulose fiber, paper fiber, or recycled paper shall be applied as part of the hydroseeding operation. The mulch shall be mixed and applied in accordance with the manufacturer's recommendations.

3.3.4 Watering Seed

Watering shall be started immediately after completing the seeding of an area. Water shall be applied to supplement rainfall at a rate sufficient to ensure moist soil conditions to a minimum 1 inch depth. Run-off and puddling shall be prevented. Watering trucks shall not be driven over turf areas, unless otherwise directed. Watering of other adjacent areas or plant material shall be prevented.

3.4 SURFACE EROSION CONTROL

3.4.1 Surface Erosion Control Material

Where indicated or as directed, surface erosion control material shall be installed in accordance with manufacturer's instructions. Placement of the material shall be accomplished without damage to installed material or without deviation to finished grade.

3.4.2 Temporary Seeding

During contract delays affecting the seeding operation. or when a quick cover is required to prevent surface erosion, or when directed, the areas designated shall be seeded in accordance with temporary seed species listed under Paragraph SEED.

3.4.2.1 Soil Amendments

When soil amendments have not been applied to the area, the quantity of 1/2 of the required soil amendments shall be applied and the area tilled in accordance with paragraph SITE PREPARATION. The area shall be watered in accordance with paragraph Watering Seed.

3.4.2.2 Remaining Soil Amendments

The remaining soil amendments shall be applied in accordance with the paragraph Tillage when the surface is prepared for installing seed.

3.5 QUANTITY CHECK

For materials provided in bags, the empty bags shall be retained for recording the amount used. For materials provided in bulk, the weight certificates shall be retained as a record of the amount used. The amount of material used shall be compared with the total area covered to determine the rate of application used. Differences between the quantity applied and the quantity specified shall be adjusted as directed.

3.6 APPLICATION OF PESTICIDE

When application of a pesticide becomes necessary to remove a pest or disease, a pesticide treatment plan shall be submitted and coordinated with the installation pest management program.

3.6.1 Technical Representative

The certified installation pest management coordinator shall be the technical representative, and shall be present at all meetings concerning treatment measures for pest or disease control. They may be present during treatment application.

3.6.2 Application

A state certified applicator shall apply required pesticides in accordance with EPA label restrictions and recommendations. Clothing and personal protective equipment shall be used as specified on the pesticide label. A closed system is recommended as it prevents the pesticide from coming into contact with the applicator or other persons. Water for formulating shall only come from designated locations. Filling hoses shall be fitted with a backflow preventer meeting local plumbing codes or standards. Overflow shall be prevented during the filling operation. Prior to each day of use, the equipment used for applying pesticide shall be inspected for leaks, clogging, wear, or damage. Any repairs are to be performed immediately. A pesticide plan shall be submitted.

3.7 RESTORATION AND CLEAN UP

3.7.1 Restoration

Existing turf areas, pavements, and facilities that have been damaged from the seeding operation shall be restored to original condition at Contractor's expense.

3.7.2 Clean Up

Excess and waste material shall be removed from the seeded areas and shall be disposed offsite. Adjacent paved areas shall be cleaned.

3.8 PROTECTION OF INSTALLED AREAS

Immediately upon completion of the seeding operation in an area, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed.

3.9 SEED ESTABLISHMENT PERIOD

3.9.1 Commencement

The seed establishment period to obtain a healthy stand of grass plants shall begin on the first day of seeding work under this contract and shall

continue through the remaining life of the contract and end 12 months after the last day of the seeding operation required by this contract. Written calendar time period shall be furnished for the seed establishment period. When there is more than one seed establishment period, the boundaries of the seeded area covered for each period shall be described. The seed establishment period shall be modified for inclement weather, shut down periods, or for separate completion dates of areas.

3.9.2 Satisfactory Stand of Grass Plants

Grass plants shall be evaluated for species and health when the grass plants are a minimum 1 inch high. A satisfactory stand of grass plants from the seeding operation shall be a minimum 100 grass plants per square foot. The total bare spots shall not exceed 2 percent of the total seeded area.

3.9.3 Maintenance During Establishment Period

Maintenance of the seeded areas shall include eradicating weeds, insects and diseases; protecting embankments and ditches from surface erosion; maintaining erosion control materials and mulch; protecting installed areas from traffic; mowing; watering; and post-fertilization.

3.9.3.1 Mowing

Areas shall be mowed once during the season to a minimum 3-inch height. Clippings shall be removed when the amount cut prevents sunlight from reaching the ground surface.

3.9.3.2 Post-Fertilization

The fertilizer shall be applied as recommended by the soil test. A maximum 1/2 pound per 1000 square feet of actual available nitrogen shall be provided to the grass plants. The application shall be timed prior to the advent of winter dormancy and shall be made without burning the installed grass plants.

3.9.3.3 Pesticide Treatment

Treatment for disease or pest shall be in accordance with paragraph APPLICATION OF PESTICIDE.

3.9.3.4 Repair or Reinstall

Unsatisfactory stand of grass plants and mulch shall be repaired or reinstalled, and eroded areas shall be repaired in accordance with paragraph SITE PREPARATION.

3.9.3.5 Maintenance Record

A record of each site visit shall be furnished, describing the maintenance work performed; areas repaired or reinstalled; and diagnosis for unsatisfactory stand of grass plants.

-- End of Section --