SOLICITATION, OFFER, AND AWARD *(Construction, Alteration, or Repair)*	1. SOLICITATION NO. DACW65-03-B-0001	2. TYPE OF SOLICITATION [X] SEALED BID (IFB) [ ] NEGOTIATED *(RFP)*	3. DATE ISSUED 29-Oct-2002	PAGE OF PAGES 1 OF 154

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

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO. W26GLG-2275-1827	6. PROJECT NO.

7. ISSUED BY CODE DACW65	8. ADDRESS OFFER TO *(If Other Than Item 7)* CODE
CONTRACTING OFFICE (CA/CW) US ARMY ENGR DIST NORFOLK ATTN: CENAO-SS-C 803 FRONT STREET NORFOLK VA 23510-1096 TEL:(757) 441-7744 FAX: (757) 441-7183	**See Item 7** TEL: FAX:

9. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. *(Include area code)* *(NO COLLECT CALLS)*
	SUSAN I HURST	(757) 441-7747

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):*

Phase I Embry Dam Removal Project, Sediment Removal, Rappahannock River, Fredericksburg, Virginia

This is an UNRESTRICTED procurement

POC
Susan HURST
757-441-7747 757-441-7183 FAX
susan.i.hurst@usace.army.mil

11. The Contractor shall begin performance within 30 calendar days and complete it within 450 calendar days after receiving [ ] award, [X] notice to proceed. This performance period is [X] mandatory, [ ] negotiable. *(See* FAR 52.211-10 *.)*

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

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 03 Dec 2002 *(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 90 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

Section 00010 - Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Lump Sum		
	Mobilization and Demobilization FFP PURCHASE REQUEST NUMBER: W26GLG-2275-1827				
				NET AMT	

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1	Lump Sum		
	Placement Area FFP Preparation, Maintenance and Final Restoration, complete, including all associated work as indicated and specified PURCHASE REQUEST NUMBER: W26GLG-2275-1827				
				NET AMT	

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		251,384	Cubic Yard		
	Dredging FFP Dredging Sediment from the Upstream Side of Embry Dam, complete, including all associated work as indicated and specified. PURCHASE REQUEST NUMBER: W26GLG-2275-1827				
					_____
				NET AMT	

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004		500	Actual Tons		
OPTION	Contaminated Soils OPTION #1 FFP All costs associated with the removal from the site and offsite disposal of petroleum contaminated soils, complete, including all other associated work as indicated and specified. PURCHASE REQUEST NUMBER: W26GLG-2275-1827				
					_____
				NET AMT	

TOTAL CLINS 0001 through 0004

$_____

FOB: Destination

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)

52.214-3 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)

52.214-12 PREPARATION OF BIDS (APR 1984)

(a) Bidders are expected to examine the drawings, specifications, Schedule, and all instructions. Failure to do so will be at the bidder's risk.

(b) Each bidder shall furnish the information required by the solicitation. The bidder shall sign the bid and print or type its name on the Schedule and each continuation sheet on which it makes an entry. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(c) For each item offered, bidders shall (1) show the unit price, including, unless otherwise specified, packaging, packing, and preservation and (2) enter the extended price for the quantity of each item offered in the "Amount" column of the Schedule. In case of discrepancy between a unit price and an extended price, the unit price will be presumed to be correct, subject, however, to correction to the same extent and in the same manner as any other mistake.

(d) Bids for supplies or services other than those specified will not be considered unless authorized by the solicitation.

(e) Bidders must state a definite time for delivery of supplies or for performance of services, unless otherwise specified in the solicitation.

(f) Time, if stated as a number of days, will include Saturdays, Sundays, and holidays.

(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)

52.214-34 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)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a firm fixed price contract resulting from this solicitation.

(End of clause)

52.217-5 EVALUATION OF OPTIONS (JUL 1990)

(a) Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

(b) The Government may reject an offer as nonresponsive if it is materially unbalanced as to prices for the basic requirement and the option quantities. An offer is unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

(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)

52.225-12 NOTICE OF BUY AMERICAN ACT REQUIREMENT-- CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (MAY 2002)

(a) Definitions. Construction material, designated country construction material, domestic construction material, foreign construction material, and NAFTA country construction material, as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act--Construction Materials under Trade Agreements” (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) Requests for determination 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 FAR clause 52.225-11 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program 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 materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(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, other than designated country or NAFTA country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic, designated country, or NAFTA country 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 FAR clause 52.225-11 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 FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic, designated country, or NAFTA country construction material, and the offeror shall be required to furnish such domestic, designated country, or NAFTA country 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)

52.225-12 NOTICE OF BUY AMERICAN ACT REQUIREMENT-- CONSTRUCTION MATERIALS (MAY 2002) - ALTERNATE I (MAY 2002)

(a) Definitions. Construction material, designated country construction material, domestic construction material, foreign construction material, and NAFTA country construction material, as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act --Construction Materials under Trade Agreements” (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) Requests for determination of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act shall submit the request with its offer, including the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11.

(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 materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(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, other than designated country or NAFTA country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic, designated country, or NAFTA country 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 FAR clause 52.225-11 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 FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic, designated country, or NAFTA country construction material, and the offeror shall be required to furnish

such domestic, designated country, or NAFTA country 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)

52.232-38 SUBMISSION OF ELECTRONIC FUNDS TRANSFER INFORMATION WITH OFFER (MAY 1999)

The offeror shall provide, with its offer, the following information that is required to make payment by electronic funds transfer (EFT) under any contract that results from this solicitation. This submission satisfies the requirement to provide EFT information under paragraphs (b)(1) and (j) of the clause at 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration.

(1) The solicitation number (or other procurement identification number).

(2) The offeror's name and remittance address, as stated in the offer.

(3) The signature (manual or electronic, as appropriate), title, and telephone number of the offeror's official authorized to provide this information.

(4) The name, address, and 9-digit Routing Transit Number of the offeror's financial agent.

(5) The offeror's account number and the type of account (checking, savings, or lockbox).

(6) If applicable, the Fedwire Transfer System telegraphic abbreviation of the offeror's financial agent.

(7) If applicable, the offeror shall also provide the name, address, telegraphic abbreviation, and 9-digit Routing Transit Number of the correspondent financial institution receiving the wire transfer payment if the offeror's financial agent is not directly on-line to the Fedwire and, therefore, not the receiver of the wire transfer payment.

(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 US Army Corps of Engineers, Norfolk District, CENAO-SS-C, 803 Front Street, Norfolk VA 23510

(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)

(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) Site visits may be arranged during normal duty hours by contacting:

Name: Thomas Friberg
Address: US Army Corps of Engineers
803 Front Street
Norfolk VA 23510
Telephone: 757-441-7645

(End of provision)

252.204-7001 COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING (AUG 1999)

(a) The offeror is requested to enter its CAGE code on its offer in the block with its name and address. The CAGE code entered must be for that name and address. Enter "CAGE" before the number.

(b) If the offeror does not have a CAGE code, it may ask the Contracting Officer to request one from the Defense Logistics Information Service (DLIS). The Contracting Officer will--

(1) Ask the Contractor to complete section B of a DD Form 2051, Request for Assignment of a Commercial and Government Entity (CAGE) Code;

(2) Complete section A and forward the form to DLIS; and

(3) Notify the Contractor of its assigned CAGE code.

(c) Do not delay submission of the offer pending receipt of a CAGE code.

(End of provision)

E4LC02 AWARD TO RESPONSIBLE OFFEROR

Responsibility will be determined, prior to award, by the Contracting Officer, either by performing a pre-award survey or conclusions based on a previous pre-award survey and/or any performance data available. A pre-award survey will be performed and the offeror will be required to show that he has the necessary capital, experience, and owns or can procure the necessary plant or other resources to commence the work at the time prescribed in the specifications and thereafter to prosecute and complete the work safely and satisfactorily within the time specified.

E4LC04 EVIDENCE OF AUTHORITY TO SIGN OFFERS

Evidence of the authority of individuals signing offers to submit firm offers on behalf of the offeror is required except where the offer is signed, and shows that it is so signed, by: the President, Vice-President, or Secretary of an

incorporated offeror; a partner in the case of a partnership; or the owner in the case of a sole proprietorship. Failure to submit with the offer satisfactory evidence of the authority of all other persons may be cause for rejection of the offer as invalid or nonresponsive.

E4LC05 PREAWARD SAFETY CONFERENCE

a. Where an apparent low bidder, in performance of contracts during the previous three-year period, incurred one or more accidents, or where, in the opinion of the Contracting Officer, there is any question regarding this compliance with any safety or accident prevention requirement, such bidder, on request of the Contracting Officer prior to any award under this solicitation, shall attend a conference with representatives of the Contracting Officer to discuss any such accidents or non-compliance, the reason for their occurrence, and measures which will be taken to preclude any recurrence thereof.

b. Information elicited at this conference will be used by the Contracting Officer, in conjunction with other information obtained in a preaward survey, in determining the bidder's responsibility.

c. The items discussed, the preventive measures considered, and any conclusions reached in this conference shall be recorded in minutes of the meeting, which shall be authenticated by the signatures of representatives of the bidder and the Contracting Officer, and any procedures noted therein as agreed upon shall become an obligation of the bidder, along with all other safety and accident prevention requirements of the contract, if award is made to him.

E4LC06 INSPECTION OF THE SITE

Prospective bidders are invited to visit the site of the work in order to acquaint themselves as to site conditions and other problems incident to the prosecution of the work. Arrangements for inspection of the site shall be made through the Office the Area Engineer identified in the clause 52.236-27, entitled "SITE VISIT (CONSTRUCTION)."

E4LC07 SUBCONTRACTING PLAN (CONSTRUCTION)

If the offeror is a large business and the offer amount exceeds $1,000,000.00, he shall submit a subcontracting plan within three (3) working days of being notified (either verbally or in writing) that he is the apparent low bidder or is otherwise in line for award. The subcontracting plan shall be reviewed and approved by the Contracting Officer prior to award.

E4LC08 MAGNITUDE OF CONSTRUCTION PROJECT

The estimated contract price of the work for this project is $1,000,000 to $5,000,000.

E4LC09 BASIS OF AWARD

All blanks must be filled in by the bidder. A single award will be made to the lowest responsible, responsive bidder on the basis of the total price bid. Prior to making an award, a pre-award survey will be made and the low bidder will be required to show that he has the necessary capital, experience, and owns or can procure the necessary plant to commence the work at the time prescribed in the specifications and thereafter to prosecute and complete the work safely and satisfactorily within the time specified.

E4LC10 UNBALANCED OFFERS

Any offer which is materially unbalanced as to prices for the Base Items and the Optional Items may be rejected as non-responsive or otherwise not considered for award. An unbalanced offer is one which is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

E4LC13 PERFORMANCE OF WORK BY CONTRACTOR

Offeror's attention is directed to FAR 52.236-1, "Performance of Work by Contractor." Contractor is required to furnish a description of the work which will be performed by his own organization, (e.g., earthwork, paving, etc.), the percentage of the total work this represents, and the estimated cost thereof. Such description of work to be performed by the contractor's own organization shall be provided to the Contracting Officer within 10 days of contract award.

E4LC23 INCURRING COSTS

The Government is not liable for any costs incurred by the offeror submitting an offer in response to this solicitation.

E4LC27 REQUIREMENT FOR "PAYMENT AND PERFORMANCE BONDS" OR "PAYMENT BONDS ONLY"

If the resulting contract is awarded for an amount in excess of $100,000, the contractor shall be required to provide both payment and performance bonds in accordance with FAR 52.228-15, "Performance and Payment Bonds--Construction." FAR 52.228-15 applies only to those contracts awarded for an amount in excess of $100,000.

If the resulting contract is awarded for an amount in excess of $25,000 but no more than $100,000, the contractor shall not be required to provide a performance bond. The required payment bond shall be provided in accordance with FAR 52.228-13, "Alternative Payment Protections." FAR 52.228-13 applies only to those contracts awarded for an amount in excess of $25,000 by no more than $100,000. Neither payment nor performance bonds are required for contracts awarded for an amount less than $25,000.

E4LC 30 CONTRACTOR PERFORMANCE AND BANKING INFORMATION

1. Prior to awarding a contract, the Government must conduct a PRE-AWARD SURVEY of the firm selected for award. In order for us to minimize delays in conducting the survey and awarding the contract, you are requested to provide the following information with your offer:

a. BANK: Branch/Location
Point-of-Contact
Telephone Number/Fax Number

Please contact the bank in advance so they will release the necessary information regarding average balances in your

operating accounts, lines of credit, and credit history.

b. 3 CURRENT PROJECTS OF SIMILAR SCOPE AND SIZE:

Project Title/Contract Number
Customer
Point-of-Contact
Telephone Number/Fax Number
$ Value
% Complete
Scheduled Completion Date

c. 3 COMPLETED PROJECTS OF SIMILAR SCOPE AND SIZE:
Same as CURRENT PROJECTS; however, in lieu of "% Complete" and "Scheduled Completion Date," provide "Completion Date."

d. DO NOT PROVIDE VOLUMINOUS LISTINGS OF YOUR FIRM'S CONTRACTING HISTORY.

2. If you wish to shield this information from public view at the bid opening, the information may be placed in an envelope with the following legend:

PRE-AWARD SURVEY INFORMATION
SOLICITATION NO._____
<YOUR FIRM'S NAME>

E4LC31 SOLICITATION ENVELOPES

Envelopes containing solicitation documents must be sealed and marked with the following information:

SOLICITATION NO.:

BRIEF DESCRIPTION:

CLOSING DATE AND TIME:

E4LC58 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 provision)

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)

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

“Common parent,” as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

“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.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) 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.

(e) 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 _____

(f) Common parent.

___ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

___ Name and TIN of common parent:

Name _____

TIN _____

(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)

52.209-5 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)

52.212-3 OFFEROR REPRESENTATIONS AND CERTIFICATIONS--COMMERCIAL ITEMS (JUL 2002) ALTERNATE I (APR 2002)

(a) Definitions. As used in this provision:

"Emerging small business" means a small business concern whose size is no greater than 50 percent of the numerical size standard for the NAICS code designated.

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 size standards in this solicitation.

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 its stock is owned by one or more women; or

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

"Women-owned business concern" means a concern which 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 whose management and daily business operations are controlled by one or more women.

(b) Taxpayer Identification Number (TIN) (26 U.S.C. 6109, 31 U.S.C. 7701). (Not applicable if the offeror is required to provide this information to a central contractor registration database to be eligible for award.)

(1) All offerors must submit the information required in paragraphs (b)(3) through (b)(5) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the Internal Revenue Service (IRS).

(2) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(3) 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.

(4) 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----------

(5) Common parent.

___ Offeror is not owned or controlled by a common parent;

___ Name and TIN of common parent:

Name----------

TIN----------

(c) Offerors must complete the following representations when the resulting contract is to be performed inside the United States, its territories or possessions, Puerto Rico, the Trust Territory of the Pacific Islands, or the District of Columbia. Check all that apply.

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

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

(3) Service-disabled veteran-owned small business concern. (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (c)(2) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a service-disabled veteran-owned small business concern.

(4) Small disadvantaged business concern. (Complete only if the offeror represented itself as a small business concern in paragraph (c)(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.

(5) Women-owned small business concern. (Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.) The offeror represents that it ( ) is, ( ) is not a women-owned small business concern.

Note: Complete paragraphs (c)(6) and (c)(7) only if this solicitation is expected to exceed the simplified acquisition threshold.

(6) Women-owned business concern (other than small business concern). (Complete only if the offeror is a women-owned business concern and did not represent itself as a small business concern in paragraph (c)(1) of this provision.) The offeror represents that it ( ) is, a women-owned business concern.

(7) Tie bid priority for labor surplus area concerns. If this is an invitation for bid, small business offerors may identify the labor surplus areas in which costs to be incurred on account of manufacturing or production (by offeror or first-tier subcontractors) amount to more than 50 percent of the contract price:

_____

(8) Small Business Size for the Small Business Competitiveness Demonstration Program and for the Targeted Industry Categories under the Small Business Competitiveness Demonstration Program. (Complete only if the offeror has represented itself to be a small business concern under the size standards for this solicitation.)

(i) (Complete only for solicitations indicated in an addendum as being set-aside for emerging small businesses in one of the four designated industry groups (DIGs).) The offeror represents as part of its offer that it ( ) is, ( ) is not an emerging small business.

(ii) (Complete only for solicitations indicated in an addendum as being for one of the targeted industry categories (TICs) or four designated industry groups (DIGs).) Offeror represents as follows:

(A) Offeror's number of employees for the past 12 months (check the Employees column if size standard stated in the solicitation is expressed in terms of number of employees); or

(B) Offeror's average annual gross revenue for the last 3 fiscal years (check the Average Annual Gross Number of Revenues column if size standard stated in the solicitation is expressed in terms of annual receipts).

(Check one of the following):

Average Annual

Number of Employees Gross Revenues

___ 50 or fewer ___ $1 million or less

___ 51 - 100 ___ $1,000,001 - $2 million

___ 101 - 250 ___ $2,000,001 - $3.5 million

___ 251 - 500 ___ $3,500,001 - $5 million

___ 501 - 750 ___ $5,000,001 - $10 million

___ 751 - 1,000 ___ $10,000,001 - $17 million

___ Over 1,000 ___ Over $17 million

(9) (Complete only if the solicitation contains the clause at FAR 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns or FAR 52.219-25, Small Disadvantaged Business Participation Program-Disadvantaged Status and Reporting, and the offeror desires a benefit based on its disadvantaged status.)

(i) General. The offeror represents that either--

(A) It ( ) is, ( ) is not certified by the Small Business Administration as a small disadvantaged business concern and identified, on the date of this representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net), and that no material change in disadvantaged ownership and control has occurred since its certification, and, where the concern is owned by one or more individuals claiming disadvantaged status, 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); or

(B) It ( ) has, ( )(has not submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(ii) Joint Ventures under the Price Evaluation Adjustment for Small Disadvantaged Business Concerns. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements in 13 CFR 124.1002(f) and that the representation in paragraph (c)(9)(i) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. (The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture: _____.)

(10) HUBZone small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(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 (c)(10)(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.

(11) (Complete if the offeror has represented itself as disadvantaged in paragraph (c)(4) or (c)(9) 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.

(d) Certifications and representations required to implement provisions of Executive Order 11246--

(1) Previous Contracts and Compliance. The offeror represents that--

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

(ii) It ( ) has, ( ) has not, filed all required compliance reports.

(2) Affirmative Action Compliance. The offeror represents that--

(i) It ( ) has developed and has on file, ( ) has not developed and does not have on file, at each establishment, affirmative action programs required by rules and regulations of the Secretary of Labor (41 CFR Subparts 60-1 and 60-2), or

(ii) It ( ) has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

(e) Certification Regarding Payments to Influence Federal Transactions (31 U.S.C. 1352). (Applies only if the contract is expected to exceed $100,000.) By submission of its offer, the offeror certifies to the best of its knowledge and belief that 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 award of any resultant contract.

(f) Buy American Act--Balance of Payments Program Certificate. (Applies only if the clause at Federal Acquisition Regulation (FAR) 52.225-1, Buy American Act--Balance of Payments Program--Supplies, is included in this solicitation.)

(1) The offeror certifies that each end product, except those listed in paragraph (f)(2) of this provision, is a domestic end product as defined in the clause of this solicitation entitled ``Buy American Act--Supplies'' and that the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The offeror shall list as foreign end products those end products manufactured in the United States that do not qualify as domestic end products.

(2) Foreign End Products:

Line Item No.:----------
Country of Origin:----------

(List as necessary)

(3) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(g)(1) Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program Certificate. (Applies only if the clause at FAR 52.225-3, Buy American Act--North American Free Trade Agreement--Israeli Trade Act, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(1)(ii) or (g)(1)(iii) of this provision, is a domestic end product as defined in the clause of this solicitation entitled ``Buy American Act--North American Free Trade Agreement--Israeli Trade Act'' and that the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States.

(ii) The offeror certifies that the following supplies are NAFTA country end products or Israeli end products as defined in the clause of this solicitation entitled ``Buy American Act--North American Free Trade Agreement--Israeli Trade Act'':

NAFTA Country or Israeli End Products

Line Item No.:----------
Country of Origin:----------

(List as necessary)

(iii) The offeror shall list those supplies that are foreign end products (other than those listed in paragraph (g)(1)(ii) of this provision) as defined in the clause of this solicitation entitled ``Buy American Act--North American Free Trade Agreement--Israeli Trade Act.'' The offeror shall list as other foreign end products those end products manufactured in the United States that do not qualify as domestic end products.

Other Foreign End Products

Line Item No.:----------
Country of Origin:----------

(List as necessary)

(iv) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(2) Buy American Act--North American Free Trade Agreements--Israeli Trade Act Certificate, Alternate I (May 2002). If Alternate I to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products as defined in the clause of this solicitation entitled “Buy American Act--North American Free Trade Agreement--Israeli Trade Act”:

Canadian End Products:

Line Item No.

(List as necessary)

(3) Buy American Act--North American Free Trade Agreements--Israeli Trade Act Certificate, Alternate II (May 2002). If Alternate II to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products or Israeli end products as defined in the clause of this solicitation entitled “Buy American Act--North American Free Trade Agreement--Israeli Trade Act”:

Canadian or Israeli End Products:

Line Item No.

Country of Origin

(List as necessary)

(4) Trade Agreements Certificate. (Applies only if the clause at FAR 52.225-5, Trade Agreements, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(4)(ii) of this provision, is a U.S.-made, designated country, Caribbean Basin country, or NAFTA country end product, as defined in the clause of this solicitation entitled ``Trade Agreements."

(ii) The offeror shall list as other end products those end products that are not U.S.-made, designated country, Caribbean Basin country, or NAFTA country end products.

Other End Products

Line Item No.:----------
Country of Origin:----------

(List as necessary)

(iii) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25. For line items subject to the Trade Agreements Act, the Government will evaluate offers of U.S.-made, designated country, Caribbean Basin country, or NAFTA country end products without regard to the restrictions of the Buy American Act. The Government will consider for award only offers of U.S.-made, designated country, Caribbean Basin country, or NAFTA country end products unless the Contracting Officer determines that there are no offers for such products or that the offers for such products are insufficient to fulfill the requirements of the solicitation.

(h) Certification Regarding Debarment, Suspension or Ineligibility for Award (Executive Order 12549). (Applies only if the contract value is expected to exceed the simplified acquisition threshold.) The offeror certifies, to the best of its knowledge and belief, that the offeror and/or any of its principals --

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

(2) ( ) 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 Federal, state or local government 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

(3) ( ) Are, ( ) are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses.

(i) Certification Regarding Knowledge of Child Labor for Listed End Products (Executive Order 13126). [The Contracting Officer must list in paragraph (i)(1) any end products being acquired under this solicitation that are included in the List of Products Requiring Contractor Certification as to Forced or Indentured Child Labor, unless excluded at 22.1503(b).]

(1) Listed end products.

Listed End Product

Listed Countries of Origin

---

(2) Certification. (If the Contracting Officer has identified end products and countries of origin in paragraph (i)(1) of this provision, then the offeror must certify to either (i)(2)(i) or (i)(2)(ii) by checking the appropriate block.)

( ) (i) The offeror will not supply any end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product.

( ) (ii) The offeror may supply an end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product. The offeror certifies that it has made a good faith effort to determine whether forced or indentured child labor was used to mine, produce, or manufacture any

such end product furnished under this contract. On the basis of those efforts, the offeror certifies that it is not aware of any such use of child labor.

(j) Certification Regarding Debarment, Suspension or Ineligibility for Award (Executive Order 12549). The offeror certifies, to the best of its knowledge and belief, that--

(1) The offeror and/or any of its principals ( ) are, ( ) are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency; and

(2) ( ) 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 Federal, state or local government 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 ( ) are, ( ) are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses.

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 23499.

(2) The small business size standard is $17,000,000.

(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.

(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; 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) 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.

52.219-19 SMALL BUSINESS CONCERN REPRESENTATION FOR THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (OCT 2000)

(a) Definition.

"Emerging small business" as used in this solicitation, means a small business concern whose size is no greater than 50 percent of the numerical size standard applicable to the North American Industry Classification System (NAICS) code assigned to a contracting opportunity.

(b) [Complete only if the Offeror has represented itself under the provision at 52.219-1 as a small business concern under the size standards of this solicitation.] The Offeror [ ] is, [ ] is not an emerging small business.

(c) (Complete only if the Offeror is a small business or an emerging small business, indicating its size range.)

Offeror's number of employees for the past 12 months (check this column if size standard stated in solicitation is expressed in terms of number of employees) or Offeror's average annual gross revenue for the last 3 fiscal years (check this column if size standard stated in solicitation is expressed in terms of annual receipts). (Check one of the following.)

No. of Employees Avg. Annual Gross Revenues

____ 50 or fewer ____ $1 million or less

____ 51 - 100 ____ $1,000,001 - $2 million

____ 101 - 250 ____ $2,000,001 - $3.5 million

____ 251 - 500 ____ $3,500,001 - $5 million

____ 501 - 750 ____ $5,000,001 - $10 million

____ 751 - 1,000 ____ $10,000,001 - $17 million

____ Over 1,000 ____ Over $17 million

(End of provision)

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)

52.223-13 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)

E4LC01 CORPORATE CERTIFICATE

Note: Contractor, if a corporation, should cause the following certificate to be executed under its corporate seal, provided that the same officer shall not execute both the contract and the certificate.

CERTIFICATE

I, _____, certify that I am

_____ of the corporation named as Contractor herein, that

_____, was then the _____ of said

corporation; that said contract was duly signed for and in behalf of said corporation of authority

of its governing body, and is within the scope of its corporate powers.

_____
(Name of Corporation)

_____
(Signature)

(Corporate Seal)

NOTE: A CORPORATE OFFICER OTHER THAN THE OFFICER SIGNING THE SOLICITATION MUST FILL OUT AND SIGN THIS FORM.

E4LC17 COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE REPORTING

(a) The Offeror is requested to enter its CAGE code in the space provided below. The CAGE code entered must be for that name and address.

(b) If the Offeror does not have a CAGE code, it may ask the Contracting Officer to request one in accordance with the provisions of DFARS 52.204-7001 in the section of this solicitation entitled "Instructions to Bidders."

(c) Do not delay submission of the offer pending receipt of a CAGE code.

CAGE Code: __ __ __ __ __

( ) UNKNOWN

E4LC18 CONTRACTOR IDENTIFICATION NUMBER

The offeror is to supply his/her Contractor Identification Number, also known as the Data Universal Numbering System (DUNS) number, in the space provided below:

DUNS: __ __ __ __ __ __ __ __ __

This number can be obtained by following the instructions in FAR Clause 52.204-0006, which appears in Section L or Section 00100 of this document.

Section 00700 - Contract Clauses

CLAUSES INCORPORATED BY REFERENCE

52.225-11 Alt I	Buy American Act--Construction Materials Under Trade Agreements (Jul 2002) Alternate I	MAY 2002

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)

52.203-7 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)

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within 30 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 not later than 450 calendar days The time stated for completion shall include final cleanup of the premises.

NOTE:

Total construction time for the contract shall not exceed 450 calendar days. Due to environmental concerns, the scheduled dredging work must be accomplished during the period from 01 July 2003 through 14 January 2004.

All interested parties are informed of the intent to lower the river level on the upstream side of the dam in March 2004 and all contractor plant shall be removed from this upstream area immediately upon completion of dredging.

(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 $650.00 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)

52.211-18 VARIATION IN ESTIMATED QUANTITY (APR 1984)

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price

shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.

52.214-26 AUDIT AND RECORDS--SEALED BIDDING. (OCT 1997)

(a) As used in this clause, records includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with the pricing of any modification to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

(1) The proposal for the modification;

(2) The discussions conducted on the proposal(s), including those related to negotiating;

(3) Pricing of the modification; or

(4) Performance of the modification.

(c) Comptroller General. In the case of pricing any modification, the Comptroller General of the United States, or an authorized representative, shall have the same rights as specified in paragraph (b) of this clause.

(d) Availability. The Contractor shall make available at its office at all reasonable times the materials described in reproduction, until 3 years after final payment under this contract, or for any other period specified in Subpart 4.7 of the Federal Acquisition Regulation (FAR). FAR Subpart 4.7, Contractor Records Retention, in effect on the data of this contract, is incorporated by reference in its entirety and made a part of this contract.

(1) If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement.

(2) Records pertaining to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to the performance of this contract shall be made available until disposition of such appeals, litigation, or claims.

(e) The Contractor shall insert a clause containing all the provisions of this clause, including this paragraph (e), in all subcontracts expected to exceed the threshold in FAR 15.403-4(a)(1) for submission of cost or pricing data.

(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 furnis hed 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)

52.214-29 ORDER OF PRECEDENCE--SEALED BIDDING (JAN 1986)

Any inconsistency in this solicitation or contract shall be resolved by giving precedence in the following order: (a) the Schedule (excluding the specifications); (b) representations and other instructions; (c) contract clauses; (d) other documents, exhibits, and attachments; and (e) the specifications.

(End of clause)

52.217-7 OPTION FOR INCREASED QUANTITY--SEPARATELY PRICED LINE ITEM (MAR 1989)

The Government may require the delivery of the numbered line item, identified in the Schedule as an option item, in the quantity and at the price stated in the Schedule. The Contracting Officer may exercise the option by written notice to the Contractor within the contract performance period. Delivery of added items shall continue at the same rate that like items are called for under the contract, unless the parties otherwise agree.

(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)

52.219-14 LIMITATIONS ON SUBCONTRACTING (DEC 1996)

(a) This clause does not apply to the unrestricted portion of a partial set-aside.

(b) By submission of an offer and execution of a contract, the Offeror/Contractor agrees that in performance of the contract in the case of a contract for--

(1) Services (except construction). At least 50 percent of the cost of contract performance incurred for personnel shall be expended for employees of the concern.

(2) Supplies (other than procurement from a nonmanufacturer of such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.

(3) General construction. The concern will perform at least 15 percent of the cost of the contract, not including the cost of materials, with its own employees.

(4) Construction by special trade contractors. The concern will perform at least 25 percent of the cost of the contract, not including the cost of materials, with its own employees.

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)

52.222-23 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
23%	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
[Contracting Officer shall insert description of the geographical areas where the contract is to be performed, giving the State, county, and city].

(End of provision)

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 AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (APR 1998)

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

All employment openings includes 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.

Appropriate office of the State employment service system means the local office of the Federal-State national system of public employment offices with assigned responsibility to serve the area where the employment opening is to be filled, including the District of Columbia, Guam, the Commonwealth of Puerto Rico, and the Virgin Islands.

Positions that will be filled from within the Contractor's organization means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings that 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.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days, any part of which occurred between August 5, 1964, and May 7, 1975, and was discharged or released therefrom with other than a dishonorable discharge; or

(2) Was discharged or released from active duty for a service-connected disability if any part of such active duty was performed between August 5, 1964, and May 7, 1975.

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

(i) Employment;

(ii) Upgrading;

(iii) Demotion or transfer;

(iv) Recruitment;

(v) Advertising;

(vi) Layoff or termination;

(vii) Rates of pay or other forms of compensation; and

(viii) Selection for training, including apprenticeship.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended.

(c) Listing openings. (1) The Contractor agrees to list all employment openings existing at contract award or occurring during contract performance, at an appropriate office of the State employment service system in the locality where the opening occurs. These openings include those occurring at any Contractor facility, including one not connected with performing this contract. An independent corporate affiliate is exempt from this requirement.

(2) State and local government agencies holding Federal contracts of $10,000 or more shall also list all their employment openings with the appropriate office of the State employment service.

(3) The listing of employment openings with the State employment service system is required at least concurrently with using any other recruitment source or effort and involves the obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing 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.

(4) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State employment service system, 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 system, it need not advise the State system of subsequent contracts. The Contractor may advise the State system 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, Guam, and the Virgin Islands.

(e) 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 disabled veterans and veterans of the Vietnam era, 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. They shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary), and 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 the Act, and is committed to take affirmative action to employ, and advance in employment, qualified disabled veterans and veterans of the Vietnam Era.

(f) 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.

(g) 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. The Contractor shall act as specified by the Deputy Assistant Secretary 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 DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (JAN 1999)

(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)

52.223-3 HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997)

(a) "Hazardous material", as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material (If none, insert "None")	Identification No.

_____ _____

_____ _____

_____ _____

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsible and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to--

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

(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 end product (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)

52.226-1 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES (JUN 2000)

(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 constitutea 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. 1542(c).

"Interested party" means a prime 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 Contractor shall use its best efforts to give Indian organizations and Indian-owned economic enterprises (25 U.S.C. 1544) the maximum practicable opportunity to participate in the subcontracts it awards to the fullest extent consistent with efficient performance of its contract.

(1) 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 an interested party challenges its status or the Contracting Officer has independent reason to question that status. 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 (BIA), 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 notify the Contracting Officer. No incentive payment will be made within 50 working days of subcontract award or while a challenge is pending. If a subcontractor is determined to be an ineligible participant, no incentive payment will be made under the Indian Incentive Program.

(2) The Contractor may request an adjustment under the Indian Incentive Program to the following:

(i) The estimated cost of a cost-type contract.

(ii) The target cost of a cost-plus-incentive-fee prime contract.

(iii) The target cost and ceiling price of a fixed-price incentive prime contract.

(iv) The price of a firm-fixed-price prime contract.

(3) The amount of the adjustment to the prime 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.

(4) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(c) 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. The Contracting Officer will seek funding in accordance with agency procedures.

(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.

(e) 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)

52.227-4 PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract.

(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)

52.228-15 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 (MAY 1997)

(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) Payments to subcontractors and suppliers have been made from previous payments received under the contract, 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 amo unt"), 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) - ALTERNATE I (APR 1984)

(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. Unless otherwise stated in this contract, payments to an assignee of any amounts due or to become due under this contract shall not, to the extent specified in the Act, be subject to reduction or setoff.

(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)

52.232-25 PROMPT PAYMENT (FEB 2002)

Notwithstanding any other payment clause 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 (EFT). 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)(4) of this clause concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Due date. (i) Except as indicated in paragraphs (a)(2) and (c) of this clause, the due date for making invoice payments by the designated payment office is the later of
the following two events:

(A) The 30th day after the designated billing office receives a proper invoice from the Contractor (except as provided in paragraph (a)(1)(ii) of this clause).

(B) The 30th day after Government acceptance of supplies delivered or services performed. For a final invoice, when the payment amount is subject to contract settlement actions, acceptance is deemed to occur on the effective date of the contract settlement.

(ii) If the designated billing office fails to annotate the invoice with the actual date of 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) Certain food products and other payments. (i) Due dates on Contractor invoices for meat, meat food products, or fish; perishable agricultural commodities; and dairy products, edible fats or oils, and food products prepared from edible fats or oils are--

(A) For meat or meat food products, as defined in section 2(a)(3) of the Packers and Stockyard Act of 1921 (7 U.S.C. 182(3)), and as further defined in Pub. L. 98-181, including any edible fresh or frozen poultry meat, any perishable poultry meat food product, fresh eggs, and any perishable egg product, as close as possible to, but not later than, the 7th day after product delivery.

(B) For fresh or frozen fish, as defined in section 204(3) of the Fish and Seafood Promotion Act of 1986 (16 U.S.C. 4003(3)), as close as possible to, but not later than, the 7th day after product delivery.

C) For perishable agricultural commodities, as defined in section 1(4) of the Perishable Agricultural Commodities Act of 1930 (7 U.S.C. 499a(4)), as close as possible to, but not later than, the 10th day after product delivery, unless another date is specified in the contract.

(D) For dairy products, as defined in section 111(e) of the Dairy Production Stabilization Act of 1983 (7 U.S.C. 4502(e)), edible fats or oils, and food products prepared from edible fats or oils, as close as possible to, but not later than, the 10th day after the date on which a proper invoice has been received. Liquid milk, cheese, certain processed cheese products, butter, yogurt, ice cream, mayonnaise, salad dressings, and other similar products, fall within this classification. Nothing in the Act limits this classification to refrigerated products. When questions arise regarding the proper classification of a specific product, prevailing industry practices will be followed in specifying a contract payment due date. The burden of proof that a classification of a specific product is, in fact, prevailing industry practice is upon the Contractor making the representation.

(ii) If the contract does not require submission of an invoice for payment (e.g., periodic lease payments), the due date will be as specified in the contract.

(3) 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)(3)(i) through (a)(3)(x) of this clause. If the invoice does not comply with these requirements, the designated billing office will return it within 7 days after receipt (3 days for meat, meat food products, or fish; 5 days for perishable agricultural commodities, dairy products, edible fats or oils, and food products prepared from edible fats or oils), with the reasons why it is not a proper invoice. The Government will take into account untimely notification when computing any interest penalty owed the Contractor.

(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 the mailing or transmission.)

(iii) Contract number or other authorization for supplies delivered or services performed (including order number and contract line item number).

(iv) Description, quantity, unit of measure, unit price, and extended price of supplies delivered or services performed.

(v) Shipping and payment terms (e.g., shipment number and date of shipment, discount for prompt payment terms). Bill of lading number and weight of shipment will be shown for shipments on Government bills of lading.

(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) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(ix) 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.

(x) Any other information or documentation required by the contract (e.g., evidence of shipment).

(4) 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)(4)(i) through (a)(4)(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, or Contractor compliance with any contract term or condition.

(iii) In the case of a final invoice for any balance of funds due the Contractor for supplies delivered or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(5) 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, Government acceptance is deemed to occur constructively on the 7th day (unless otherwise specified in this contract) after the Contractor delivers the supplies or performs the services in accordance with the terms and conditions of the contract, unless there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. If actual acceptance occurs within the constructive acceptance period, the Government will base the determination of an interest penalty on the actual date of acceptance. The constructive acceptance requirement does not, however, compel Government officials to accept supplies or services, 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.

(6) 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.

(7) 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)(7)(ii) of this clause, postmarked not later than 40 days after 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 is 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.

(iii) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payment. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Fast payment procedure due dates. If this contract contains the clause at 52.213-1, Fast Payment Procedure, payments will be made within 15 days after the date of receipt of the invoice.

(d) 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)

52.232-27 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)

52.236-1 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 15% 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)

52.236-2 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)

(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.

(f) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

(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)

52.236-15 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)

52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997) - ALTERNATE I (APR 1984

(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 assemb ly 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. Upon completing the work under this contract, the Contractor shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the equipment is completed and accepted.

(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)

52.242-13 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)

52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS (MAY 2002)

(a) Definitions. As used this clause--

"Commercial item", has the meaning contained in the clause at 52.202-1, Definitions.

"Subcontract", includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (OCT 2000) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds $500,000 ($1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (APR 2002) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans (DEC 2001) (38 U.S.C. 4212(a)).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (JUN 1998) (29 U.S.C. 793).

(v) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (JUN 2000) (46 U.S.C. Appx 1241) (flowdown not required for subcontracts awarded beginning May 1, 1996).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

(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)

52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.
(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(End of clause)

52.247-34 F.O.B. DESTINATION (NOV 1991)

(a) The term "f.o.b. destination," as used in this clause, means--

(1) Free of expense to the Government, on board the carrier's conveyance, at a specified delivery point where the consignee's facility (plant, warehouse, store, lot, or other location to which shipment can be made) is located; and

(2) Supplies shall be delivered to the destination consignee's wharf (if destination is a port city and supplies are for export), warehouse unloading platform, or receiving dock, at the expense of the Contractor. The Government shall not be liable for any delivery, storage, demurrage, accessorial, or other charges involved before the actual delivery (or "constructive placement" as defined in carrier tariffs) of the supplies to the destination, unless such charges are caused by an act or order of the Government acting in its contractual capacity. If rail carrier is used, supplies shall be delivered to the specified unloading platform of the consignee. If motor carrier (including "piggyback") is used, supplies shall be delivered to truck tailgate at the unloading platform of the consignee, except when the supplies delivered meet the requirements of Item 568 of the National Motor Freight Classification for "heavy or bulky freight." When supplies meeting the requirements of the referenced Item 568 are delivered, unloading (including movement to the tailgate) shall be performed by the consignee, with assistance from the truck driver, if requested. If the contractor uses rail carrier or freight forwarded for less than carload shipments, the contractor shall ensure that the carrier will furnish tailgate delivery, when required, if transfer to truck is required to complete delivery to consignee.

(b) The Contractor shall--

(1)(i) Pack and mark the shipment to comply with contract specifications; or

(ii) In the absence of specifications, prepare the shipment in conformance with carrier requirements;

(2) Prepare and distribute commercial bills of lading;

(3) Deliver the shipment in good order and condition to the point of delivery specified in the contract;

(4) Be responsible for any loss of and/or damage to the goods occurring before receipt of the shipment by the consignee at the delivery point specified in the contract;

(5) Furnish a delivery schedule and designate the mode of delivering carrier; and

(6) Pay and bear all charges to the specified point of delivery.

(End of clause)

52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000)

(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 will 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 will 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.

If the VECP is not accepted, the Contracting Officer will 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.

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) 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 is the sole determiner of the amount of collateral savings.

(h) 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.

(i) 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.)

(End of clause)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (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 the Contracting Officer fail to agree on the whole amount to be paid because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined by the Contracting Officer as follows, but without duplication of any amounts agreed on under paragraph (f) of this clause:

(1) The contract price for completed supplies or services accepted by the Government (or sold or acquired under subparagraph (b)(9) of this clause) not previously paid for, adjusted for any saving of freight and other charges.

(2) The total of--

(i) The costs incurred in the performance of the work terminated, including initial costs and preparatory expense allocable thereto, but excluding any costs attributable to supplies or services paid or to be paid under subparagraph (f)(1) of this clause;

(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)(2)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(2)(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.

(3) 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)

52.249-2 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.

(g) 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 DISPLA Y 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.

(h) 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)

252.227-7033 RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

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.

252.236-7001 CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

(1) Check all drawings furnished immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies;

(4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and

(5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

(1) Large-scale drawings shall govern small-scale drawings; and

(2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

Title	File	Drawing No.
Specifications per table of contents		
Drawings per index	15 drawings	No H-50-50-15

(End of clause)

252.242-7000 POSTAWARD CONFERENCE (DEC 1991)

The Contractor agrees to attend any postaward conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation subpart 42.5.

(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.

252.244-7000 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (DOD) (MAR 2000)

In addition to the clauses listed in paragraph (c) of the Subcontracts for Commercial Items and Commercial Components clause of this contract (Federal Acquisition Regulation 52.244-6), the Contractor shall include the terms of the following clauses, if applicable, in subcontracts for commercial items or commercial components, awarded at any tier under this contract:

252.225-7014 Preference for Domestic Specialty Metals, Alternate I (10 U.S.C. 2241 note).

252.247-7023 Transportation of Supplies by Sea (10 U.S.C. 2631).

252.247-7024 Notification of Transportation of Supplies by Sea (10 U.S.C. 2631).

(End of clause)

252.245-7001 REPORTS OF GOVERNMENT PROPERTY (MAY 1994)

(a) The Contractor shall provide an annual report --

(1) For all DoD property for which the Contractor is accountable under the contract;

(2) Prepared in accordance with the requirements of DD Form 1662, DoD Property in the Custody of Contractors, or approved substitute, including instructions on the reverse side of the form;

(3) In duplicate, to the cognizant Government property administrator, no later than October 31.

(b) The Contractor is responsible for reporting all Government property accountable to this contract, including that at subcontractor and alternate locations.

(End of clause)

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

52.232-5001 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 ___$1,000,000.00_____ 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)

E4LC11 DEPARTMENT OF LABOR WAGE DECISION (CONSTRUCTION)

Any contract awarded as a result of this solicitation will be subject to the U.S. Department of Labor Wage Decision(s) provided below.

General Decision Number VA020026

General Decision Number **VA020026**
Superseded General Decision No. VA010026

State: Virginia

Construction Type:
DREDGING

County(ies):
STATEWIDE

DREDGING CONSTRUCTION PROJECTS (Excluding HOPPER DREDGING)

Modification Number	Publication Date
0	03/01/2002
1	04/19/2002

COUNTY(ies):

STATEWIDE

* ENGI0025J 02/01/2002

	Rates	Fringes
HYDRAULIC DREDGES 20" & OVER		
Leverman	19.22	4.01+a
Engineer	18.09	4.01+a
Derrick Operator	16.78	4.01+a
Electrician	17.10	4.01+a
Carpenter	16.68	3.01+a
Mate	15.70	3.81+a
Welder	16.22	3.81+a
Spill Barge Operator	16.45	3.81+a
Oiler	12.32	3.61+a
Deckhand	11.53	3.61+a
Shoreman	11.30	3.61+a
Handyman	11.53	3.61+a
Fill Placer	16.68	4.01+a
Assistant Fill Placer	15.18	4.01+a
CLAMSHELL DREDGES:		
Operator	19.13	4.01+a
Engineer	17,11	4.01+a
Welder	15.96	3.81+a
Mate	15.37	3.81+a
Oiler	12.32	3.61+a
Deckhand	11.53	3.61+a
Scowman	11.69	3.61+a
Handyman	11.53	3.61+a
TUGS TENDING CLAMSHELL DREDGES:		
LESS THAN 600 HP:		
Tug Master	15.34	4.01+a
Tug Captain	14.85	4.01+a
Tug Deckhand	11.53	3.61+a
TUGS TENDING CLAMSHELL DREDGES:		
600 HP TO 1350 HP:		
Tug Master	16.30	4.01+a
Tug Captain	15.00	4.01+a
Tug Deckhand	11.53	3.61+a
TUGS TENDING CLAMSHELL DREDGES:		
GREATER THAN 1350 HP:		
Tug Master	17.34	4.01+a
Tug Captain	16.44	4.01+a
Tug Engineer	16.44	4.01+a
Tug Deckhand	11.53	3.61+a
STEWARD DEPARTMENT ON		
CLAMSHELL DREDGES::		
Steward	12.70	3.81+a

2nd Cook	11.53	3.61+a
Night Cook	11.53	3.61+a
Messman	11.31	3.61+a
Janitor	11.53	3.61+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Good Friday, Labor Day, Thanksgiving Day, Christmas Day. Plus Vacation contribution of 7% of straight time pay for all hours worked.

SUVA2041A 11/01/1994

	Rates	Fringes
HYDRAULIC DREDGES UNDER 20":		
Leverman	14.53	2.96+a
Engineer	14.18	2.96+a
Derrick Operator	13.20	2.96+a
Electrician	13.45	2.96+a
Carpenter	13.14	2.96+a
Mate	12.39	2.96+a
Welder	12.78	2.96+a
Spill Barge Operator	12.97	2.96+a
Spider Barge Operator	12.97	2.96+a
Tug Master	12.29	2.96+a
Tug Mate	11.76	2.96+a
Steward	10.42	2.96+a
Oiler	10.12	2.96+a
Deckhand	9.50	2.96+a
Tug Deckhand	9.50	2.96+a
Shoreman	9.32	2.96+a
Second Cook	9.50	2.96+a
Messman	9.32	2.96+a
Rodman	9.50	2.96+a
Handyman	9.50	2.96+a
Night Cook	9.50	2.96+a
Janitor/Porter	9.50	2.96+a
DIPPER DREDGES:		
Operator	14.59	2.96+a
Engineer	14.04	2.96+a
Welder	12.78	2.96+a
Mate	12.39	2.96+a
Oiler	10.12	2.96+a
Deckhand	9.50	2.96+a
Launchman	10.12	2.96+a
Scowman	9.63	2.96+a
Rodman	9.50	2.96+a
Handyman	9.50	2.96+a
TUGS:		
(Tending Dipper Dredges)		

Tug Master	13.16	2.96+a
Engineer	12.96	2.96+a
Tug Mate	11.87	2.96+a
Assistant Engineer	11.75	2.96+a
Deckhand	9.37	2.96+a
Cook	9.63	2.96+a

STEWARD DEPARTMENT:
(On Dipper Dredges)

Cook	9.27	2.96+a
Mess Cook	8.74	2.96+a
Messman and Janitor	8.61	2.96+a

DRILL BOATS:

Engineer	14.18	2.96+a
Blaster	13.69	2.96+a
Driller	13.69	2.96+a

FOOTNOTES APPLICABLE TO ALL ABOVE CRAFTS:

a. PAID HOLIDAYS AND VACATION:
New Year's Day, Memorial Day, Independence Day, Good Friday, Labor Day, Thanksgiving Day, and Christmas Day; plus vacation contribution of 7% of straight time pay for all hours worked.

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)(v)).

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

General Decision Number VA020102

General Decision Number **VA020102**
Superseded General Decision No. VA010102

State: Virginia

Construction Type:
HEAVY
SEWER AND WATER LINE

County(ies):
FREDERICKSBURG* MANASSAS PARK* SPOTSYLVANIA
KING GEORGE MANASSAS* STAFFORD
LOUDOUN PRINCE WILLIAM

*INDEPENDENT CITIES

HEAVY CONSTRUCTION PROJECTS (Including Sewer and Water Lines)

Modification Number	Publication Date
0	03/01/2002

COUNTY(ies):
FREDERICKSBURG* MANASSAS PARK* SPOTSYLVANIA
KING GEORGE MANASSAS* STAFFORD
LOUDOUN PRINCE WILLIAM

SUVA2049A 09/30/1996

	Rates	Fringes
BOILERMAKERS	17.42	5.81
CARPENTERS	16.00	
ELECTRICIANS	15.33	
LABORERS:		
Unskilled	8.23	.73
Pipelayers	12.34	.54
PIPEFITTERS	18.57	5.75
POWER EQUIPMENT OPERATORS:		
Backhoes	14.53	.65
Bulldozers	12.73	.65
Loaders	13.22	.65
TRUCK DRIVERS, DUMP	10.04	

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)(v)).

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listed under that identifier do not reflect collectively
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indicate unions whose rates have been determined to be
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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

E4LC12 REQUIRED INSURANCE

The contractor shall procure and maintain during the entire period of performance under this contract, the following minimum insurance:

TYPE	AMOUNT
Workers Compensation	As required by State law
Employer's Liability	$100,000 per person
General Liability	$500,000 per occurrence
Motor Vehicle Liability (for each motor vehicle):	
Bodily injury or death	$200,000 per person $500,000 per occurrence
Property damage	$20,000 per occurrence

Prior to 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.

E4LC 14 PERFORMANCE EVALUATION OF CONTRACTOR

As a minimum, the Contractor's performance will be evaluated upon final acceptance of the work. However, interim evaluations may be prepared at any time during contract performance when determined to be in the best interest of the Government. The format for the evaluation will be DD Form 2626, and the Contractor will be rated either "Outstanding," "Satisfactory," or "Unsatisfactory" in the areas of Contractor Quality Control, Timely Performance, Effectiveness of Management, Compliance with Labor Standards, and Compliance with Safety Standards. The Contractor will be advised on any unsatisfactory rating, either in an individual element or in the overall rating, prior to completing the evaluation; all contractor comments will be made a part of the official record. In compliance with DOD FAR Supplement 236.201, Performance Evaluation Reports will be available to all DOD Contracting Offices for their future use in determining contractor responsibility.

E4LC15 LOCATION OF SITE ON A GOVERNMENT RESERVATION

The site of the work is on a government reservation and all rules and regulations issued by the Commanding Officer covering general safety, security, and sanitary requirements, etc., shall be observed by the contractor.

E4LC16 ACCIDENT PREVENTION PLAN

In accordance with the clause entitled "Accident Prevention," the contractor will not be allowed to commence work on the job site until an acceptable accident prevention plan has been submitted. The contractor will receive official notification of the acceptance of his accident prevention plan.

E4LC26 SMALL BUSINESS STANDARD FOR DREDGING

(a) FAR 52.219-1, SMALL BUSINESS PROGRAM REPRESENTATION, provides the SIC Code and small business size standard for dredging.

(i) Additionally, to be considered small, a firm must perform at least 40% of the yardage with its own dredging equipment or equipment owned by another small dredging firm.

E4LC28 IDENTIFICATION OF CORRESPONDENCE

All correspondence and data submitted by the contractor under this contract shall reference the contract number.

E4LC29 AGENTS

Offers signed by an Agent must be made in the name of the Principal and must be accompanied by evidence of said Agent’s authority to act on behalf of its Principal.

E4LC42 CONTRACTOR PLANT IDENTIFICATION

The contractor's company name/logo shall be permanently and prominently affixed to the port and starboard sides of floating plant and to each side of all land vehicles deployed on an assigned project site. All floating plant shall clearly and conspicuously display Coast Guard personnel rating capacities.

E4LC46 UNAUTHORIZED INSTRUCTIONS FROM GOVERNMENT OR OTHER PERSONNEL

The contractor shall not accept instructions issued by any person, employed by the U.S. Government or otherwise, other than the Contracting Officer or the Authorized Representative of the Contracting Officer acting within the limits of his/her authority as defined in the Designation of Authority letter. A copy of the Designation of Authority letter will be furnished to the contractor at time of contract award.

E4LC49 DESIGNATION OF AUTHORIZED REPRESENTATIVE OF THE CONTRACTOR

The Contractor shall assign a number or employee who will act as Project Manager during the course of this contract or during the course of a delivery order. This official shall be responsible for affording liaison between the contract forces and the contracting office(s). This designation shall be in writing with a copy furnished to the Contracting Officer.

E4LC59 PHYSICAL DATA (APR 1984)

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

(a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by the methods identified in Division 1 of the specification.

(b) Weather conditions: See Division 1 of the specification.

(c) Transportation facilities: See Division 1 of the specification.

(d) Other Physical Data: See Division 1 of the specification.

(End of clause)

TECHNICAL SPECIFICATIONS
FOR
PHASE 1 EMBREY DAM REMOVAL PROJECT
SEDIMENT REMOVAL
RAPPAHANNOCK RIVER
FREDERICKSBURG, VIRGINIA

PREPARED AND
ISSUED BY
DEPARTMENT OF THE ARMY
NORFOLK DISTRICT, CORPS OF ENGINEERS
OPERATIONS BRANCH
WATERFIELD BUILDING
803 FRONT STREET
NORFOLK, VIRGINIA 23510-1096

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-- End of Project Table of Contents --

SECTION 01005

PROJECT WORK REQUIREMENTS AND RESTRICTIONS
08/02

PART 1 GENERAL

1.1 SUBMITTALS

The Contractor shall make submittals for the following listed reports and certificates as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work. 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) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken in accordance with SECTION 01451. 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 and Postconstruction Submittals

Access Plan; G

Submit written plan with narrative description and drawings to indicate access to the site by authorized right-of-way.

Dredging Intent Notification; G

Prior to commencement of dredging, submit a copy of intention to start dredging notification at same time sent to Department of Environmental Quality.

Report of Dredging; G

Upon completion of dredging, submit a copy of completed Report of Dredging with data as specified to Department of Environmental Quality and Virginia Marine Fisheries.

Advance Notice for Dredging

Contractor advance notice for dredging.

Acceptance Section Survey Reports

Contractor request for acceptance section survey reports that will constitue before dredging surveys.

Safety Plan; G

Authorized Plant Operators; G

Hurricane Plan; G

Diving Operations Plan; G

1.2 Special Work Requirements

The Contractor shall perform the scheduled dredging work with a hydraulic dredge and pipeline and place the dredged material in the Government-furnished upland placement area as indicated. All dredging, transport and placement of dredged material under this contract shall be in compliance with all conditions set forth in the Virginia Department of Environmental Quality Water Protection Permit that is included as a part of this contract at the end of SECTION 01355 ENVIRONMENTAL PROTECTION. The contract plans and specifications have been prepared to comply with this permit that was established during the planning and development of this project. Due to environmental concerns the scheduled dredging work must be accomplished during the period from July 1 2003 through 14 January 2004. The Contractor is informed informed of the intent to lower the river level on the upstream side of the dam in March 2004 and all Contractor plant shall be removed from this upstream area immediately upon completion of dredging. The Contractor is informed an Environmental Survey Assessment (ESA) was conducted on the site and the report of conclusions for this ESA is included at the end of SECTION 01355 ENVIRONMENTAL PROTECTION. The Contractor is advised that any deviations from the construction methods and procedures indicated by the plans and specifications that are not prior-approved in writing by the Contracting Officer, and any non-compliance with or violation of the conditions stated in the permits, shall be cause for the Contracting Officer issuing a stop work order. Any stop work orders issued for these causes will not be subject to time extensions or cost recovery by the Contractor. Any non-compliance with or violation of the conditions stated in the permits noted herein may result in revocation of the permits for the project and may result in criminal and civil penalties against the Contractor.

1.2.1 Security and Public Safety of Work Areas

The dredging area is adjacent to the Embrey Dam and somewhat accessible to the general public. The placement area is not readily accessible to the general public; however, the Contractor is informed of the presence of housing in the general vicinity. The Government will not undertake to exclude the public or restrict public access to the dredging or placement area during the work. The Contractor shall be solely responsible for protection of the public at all times for the duration of the contract and fully comply with the provisions of OSHA safe working practices and the Safety and Accident Prevention requirements of these specifications. The Contractor shall employ the use of signs, barricades, barriers, flagmen, and any other devices and measures required to assure public and worker safety at the dredging and placement areas at all times. Unless directed otherwise, the Contractor may perform the scheduled dredging work 24 hours a day, 7 days a week. Any other scheduled work shall be performed Monday through Friday, 8:00am to 4:30pm. During dredging and material placement

operations, the Contractor shall provide at least two competent employees to monitor the Contractor's operations at the placement area 24 hours a day. All lighting associated with the project shall be limited to the immediate area of active construction only. Such lighting shall be shielded, low-pressure sodium vapor lights directed to the maximum extent practical away from populated areas. During the period immediately after material placement operations have been completed and the interior of the placement area is in an undrained condition, temporary safety fencing shall be provided along the centerline of the berm to completely enclose the diked placement area for the purpose of keeping the general public from entering the area. Fencing shall be a minimum 6-foot high chain-link with posts driven into the ground at intervals to afford a secure installation throughout the full length of the fencing. Signs shall be posted at 100-foot intervals to alert any trespassers that the diked placement area contains soft bottom and is unsafe for pedestrian crossing. Fencing shall be provided at the cost of the Contractor and must be removed once the interior of the placement area is dry and final grading of the placement area is complete.

1.2.2 Noise Control and Abatement

The Contractor shall employ the use of properly installed and maintained mufflers, silencers, and manufacturer's recommended sound suppressors on all plant, machinery, and equipment used on this work. The use of sound signals such as whistles, horns, or bells shall not be used if two-way radio communication can accomplish the required function. The Contractor shall not use sound signals, with the exception of those signals required for vessel operations by the U.S. Coast Guard, during the time between sunset and sunrise.

1.2.3 Coordination with Other Contractors

During the period of this contract, other contracts may be in force for the construction of other features of work on or adjacent to the site of work being accomplished under this contract. The Contractor shall arrange his plant, and shall schedule and perform this work, so as to effectively cooperate with all other contractors and Government agencies. It shall be the responsibility of the Contractor on this contract to be fully informed of the extent of the limits of work to be performed by other contractors. Should there be any conflict between these limits, the Contractor shall immediately notify the Contracting Officer of the conflict, and the Contracting Officer's decision shall be final.

1.2.4 Access\Egress to Placement Site

The access\egress to the placement site by vehicular transportation is available by a restricted right-of-way controlled by the City of Fredericksburg as shown on the contract drawing. This right-of-way may be used by the Contractor to access the placement site from the shore for the purpose of mobilizing and demobilizing construction equipment and delivery of materials to construct the work. The Contractor shall prepare, as a part of his Work Plan, Activity Hazard Analysis, Environmental Protection Plan and Progress Schedule, his proposed Access Plan indicating methods for gaining access to the workplace by this right-of-way that does not

unnecessarily impact convenient and safe access to and from the area by the public. Access and egress by this right-of-way is the sole responsibility of the Contractor. All roads approved for the Contractor's use shall be maintained throughout construction and restored to as good condition as existed prior to their use. The Contractor shall keep all roads free of mud and other foreign materials resulting from his operations. The Contractor's vehicles shall at no time follow a vehicle closer than 50 feet, and all vehicles shall pull off the road and come to a complete stop when meeting emergency vehicles and vehicles with flashing lights. All temporary construction shall be removed and the affected area restored to its original condition. All costs for the use of existing transportation facilities, for the construction of temporary facilities, and for maintenance, repair, removal and restoration shall be borne by the Contractor.

1.2.5 Cleated Vehicles

Cleated vehicles shall not be moved over surfaced roads except at the immediate site of the area where they are to be used.

1.3 NOTIFICATIONS OF INTENT TO DREDGE AND REPORTS OF DREDGING

Notifications giving the dates and locations the Contractor intends to start dredging shall be prepared and sent to the agencies as specified below for each respective agency. Upon completion of each dredging item, the Contractor shall prepare a Dredging Intent Notification giving all data as indicated and sent to the respective Environmental Agency as specified. When the Contractor sends a Notification or Report to a respective agency, a copy shall at the same time be furnished to the Contracting Officer. The Contractor shall include the Virginia Water Protection (VWP) Permit Number on all Notifications and Reports.

1.3.1 Notification of Dredging to the Virginia Department of Environmental Quality

The Contractor shall notify the Virginia Department of Environmental Quality, Northern Virginia Regional Office, Attention: Trisha Renaud, 13901 Crown Court, Woodbridge, Virginia 22193, in writing, at least 15 calendar days prior to commencement of dredging operations under this contract. The Contractor shall include the Virginia Water Protection (VWP) Permit Number on all correspondence and reports sent to the Department of Environmental Quality.

1.3.2 Report of Dredging to the Department of Environmental Quality

The Contractor shall notify the Virginia Department of Environmental Quality, Northern Virginia Regional Office, Attention: Trisha Renaud, 13901 Crown Court, Woodbridge, Virginia 22193, in writing, within 30 calendar days of completion of dredging operations. The Contractor shall include in the Report the following information to the Virginia Department of Environmental Quality:

(a) Date on which dredging operations started.
(b) Date on which dredging operations were completed.

(c) Amount of material dredged (in cubic yards)

1.3.3 Notification of Intent to Dredge to Virginia Marine Resources Commission - Habitat Management Division

The Contractor shall notify the Virginia Marine Resources Commission, Habitat Management Division, Third Floor, 2600 Washington Avenue, Newport News, Virginia 23607-0756, in writing, at least 15 calendar days prior to commencement of dredging operations under this contract. The Contractor shall at the same time furnish a copy of the notice to the Contracting Officer. The Contractor shall include the Virginia Marine Resources Commission (VMRC) Permit Number on all correspondence and reports sent to the Virginia Marine Resources Commission.

1.4 PHYSICAL DATA

1.4.1 Physical Conditions Information

The physical conditions indicated on the drawings and in the specifications are the result of site investigations and surveys. Information and data furnished or referred to below is furnished for the Contractor's information; however, it shall be expressly understood that the Government will not be responsible for any interpretation or conclusion drawn from this information or data by the Contractor.

1.4.2 Dredging Related Weather/Physical Conditions

The dredging area is non-tidal. The river is subject to flooding from upstream rainfall and runoff events. The Maximum Water Level Upstream of Embrey Dam is approximately elevation 66.0 feet MSL in 1942. Forecasts for downstream conditions are available from the National Weather Service in Sterling, Virginia, telephone: 703-260-0107, Fax: 703-260-0809, and on NOAA Weather Radio @ 162.400MHz, 162.425MHz, 162.450MHz, 162.475MHz, 162.500MHz and 162.550MHz (available by monitoring on Bearcat Scanners or similar receivers 24 hours a day, 7 days a week), and are also broadcast on local radio stations in Fredericksburg. The Rappahannock River upstream of Embrey Dam is subject to sudden and rapid rises and high velocities. The forecasts for these conditions can be observed at http://va.waterdata.usgs.gov/nwis/current/?type=flow. The Contractor shall satisfy himself as to the hazards likely to arise from the weather conditions during the dredging period. The locations of the work are somewhat protected; however, storms and severe winds may cause suspension of dredging work for short periods.

1.4.3 Sitework Related Adverse Weather Conditions

This provision specifies the procedure for the determination of time extensions for unusually severe weather to perform sitework related functions only 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:

a. 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.

b. 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.

1.4.3.1 Schedule

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 DELAYWORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
10	9	8	6	7	7	9	6	5	5	6	9

1.4.3.2 Records

Upon acknowledgement of the Notice to Proceed and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled site related work except that associated with dredging. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the contractor's scheduled work day.

1.4.3.3 Impacted Days

The number of actual adverse weather 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 the schedule of monthly anticipated adverse weather delays, above, the contracting officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the Contract Clauses entitled "Default (Fixed Price Construction)".

1.4.4 Obstruction of Channel

The Government will not undertake to keep the area of channels free from vessels or other obstructions, except to the extent of such regulations, if any, as may be prescribed by the Secretary of the Army, in accordance with the provisions of Section 7 of the River and Harbor Act, approved 3 August 1917. The Contractor will be required to conduct the work in such manner as to obstruct navigation as little as possible, and in case the Contractors'

plant so obstructs the channel as to make difficult or endanger the passage of vessels, said plant shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a practicable passage. Upon the completion of the work, the Contractor shall promptly remove his plant, including ranges, buoys, piles, and other marks placed by him under this contract in navigable water or on shore.

1.4.5 Responsibility

The Contractor shall hold and save harmless the United States, its officers, and employees from all claims that may arise as a result of the Contractor's negligence in connection with the work performed under the contract, from noncompliance by the Contractor with the provisions of the contract drawings and specifications, or from the instruction of the Contracting Officer.

1.5 LAYOUT OF WORK AND SURVEYS

1.5.1 General

The Contractor shall be responsible for the layout of all work and have all markings placed in the field marked by a licensed Professional Engineer or Surveyor currently licensed in the Commonwealth of Virginia. The markings shall be placed in the immediate work areas only and shall be removed once a work area has been accepted. The Government will establish the tide staff gauge within vicinity of the respective dredging areas. The Contractor shall mark the centerline berm of the placement site at 200 foot intervals with minimum 1 inch diameter steel pipe. Each pipe shall be driven to sufficient depth to remain in place until the placement operations are complete. When set in place, the Contractor shall have the surveyor or engineer clearly label the +223.0-foot NGVD elevations on each pipe. If the crest of the dike is constructed higher than +222.0-foot NGVD, each successive foot rise in elevation shall be marked on each pipe as applicable. The in-place markings will be inspected and approved by the Government before the commencement of work operations. The Contractor shall give the Contracting Officer a minimum of 7 calendar days written notice in advance of the commencement of work operations to assure the completion of the Government verification review of the markings. Upon completion of work operations the Contractor shall remove all markings and dispose in an approved manner. The in-place markings shall be verified by the Government before dredging and dredged material placement operations commence. The Contractor shall provide the Contracting Officer written notice at least 14 calendar days in advance of commencement of dredging and dredged material placement operationsAdvance Notice for Dredging to assure the completion of the initial Government verification review. The Government shall verify all remaining markings as the dredging and dredged material placement operations are allowed to proceed. As applicable, the Government will furnish within 14 calendar days of receipt of a written request by the Contractor, the corner point coordinates for each contract dredging area or acceptance section, and the coordinates and monument descriptions for the existing horizontal control within vicinity of the work areas. All requests shall be addressed to U.S. Army Corps of Engineers, Norfolk District, Operations Branch, Navigation Support and Survey Section, CENAO-TS-ON, 803

Front Street, Norfolk, Virginia 23510-1096. Point of contact concerning this request is Chief, Navigation Support and Survey Section, telephone (757) 441-7125, or FAX (757) 441-7664. The Contractor shall be responsible for using this information to dredge within the areas and prisms as shown, and to deposit the dredged material at the locations indicated. The Contractor shall establish and maintain at his own expense all markings of the dredging and placement areas and shall remove same upon completion of the work. The contract completion time will not be extended due to failure of the Contractor to adequately establish and maintain his markings of the work areas.

1.5.1.1 Electronic Survey and Positioning Systems

When the Contractor utilizes electronic survey and positioning systems to perform dredging and dredged material placement operations, all work accomplished with the use of the systems shall be reviewed and certified as accurate by the Contractor's Quality Control Manager. This signed certification shall be submitted as a part of the Daily Report of Operations in accordance with the requirements of SECTION 01451 to assure that all work performed with the use of the equipment and systems meets contract requirements.

1.5.2 Before Dredging Survey

The Contractor shall give the Contracting Officer written notice for Acceptance Section Survey Reports at least 14 calendar days prior to arrival of the dredge plant at the first work area or acceptance section, and shall furnish written notice at least 14 work days in advance of need for subsequent before dredging surveys. It is understood that the surveys made in response to notice by the Contractor will constitute the before dredging survey and that any subsequent surveys occasioned through Contractor delays will be charged against the Contractor at a rate of $5,500 per day. The Contracting Officer will not be responsible for any delays in the commencement of work caused by incomplete surveys if the Contractor fails to provide adequate advance written notice as specified.

1.5.3 Datum and Bench Marks

The plane of reference for the scheduled work is NGVD, National Geodetic Vertical Datum as indicated. The bench mark elevations are shown on the drawings for the respective work areas. The government will furnish monument descriptions for these bench marks at the Preconstruction Conference.

1.5.4 Use of Coast Guard Navigation Aid Structures

The Commander, Fifth Coast Guard District, has authorized the Norfolk District, Corps of Engineers, and its Contractors to use fixed Federal aids to navigation structures, established and maintained by the U. S. Coast Guard, for support of temporary dredging tide gauges when performing Federal dredging operations. If a Contractor chooses to use navigation aid structures for this purpose, he shall abide by the following requirements:

a. The Contractor shall advise the Commander, Fifth Coast Guard

District, Aids to Navigation Branch, Federal Building, 431 Crawford Street, Portsmouth, Virginia 23704, in writing, of his intention to attach tide gauges to navigation aid and structures, prior to commencing a dredging project. This notice shall include the name of each aid to navigation to which tide gauges are to be attached, and the anticipated dates the gauges will be attached and removed. A copy of this notice shall be furnished at this time to the Contracting Officer.

b. The Contractor shall be required to remove any temporary tide gauges immediately upon completion of dredging operations and demobilization of dredging plant. The Contractor shall at his expense repair or replace any aids that he has damaged or destroyed as a result of the Contractor's use of such aids.

c. This provision refers only to Federal aids to navigation structures and does not authorize the Contractor to utilize aids that are not established and maintained by the U. S. Coast Guard. This provision also does not authorize the Contractor to utilize Federal navigation aid structures for any purposes other than the support of temporary tide gauges.

1.6 INSPECTION

1.6.1 General Inspection Requirements

The presence of the construction representative shall not relieve the Contractor of responsibility for the proper execution of the work in accordance with the specifications. The Contractor will be required:

a. To furnish, on the request of the Contracting Officer or any construction representative, the use of such boats, boatmen, laborers, and material forming a part of the ordinary and usual equipment and crew of the dredging plant as may be reasonably necessary in inspecting and supervising the dredging areas.

b. To furnish, on the request of the Contracting Officer or any construction representative, suitable transportation from all points within the placement area, to and from the various pieces of plant and the staging areas, and within the material placement area as may be reasonably necessary in inspecting and supervising the work. Should the Contractor refuse, neglect, or delay compliance with these requirements, the specific facilities may be furnished and maintained by the Contracting Officer, and any resultant cost incurred by the government will be deducted from any amounts due or to become due the Contractor.

1.7 ORDER OF DREDGING WORK

The order in which the Contractor intends to conduct the dredging work shall be submitted as a part of the Contractor's Progress Schedule. In submitting his proposed order of work, the Contractor is informed that indicated dredging Areas 1, 2, 3, 4, and 5 are to be dredged last, and shall be reflected in his order of work accordingly.

1.8 SHOALING

The drawings and quantity estimates are based on the condition of the dredging area at the time of the most recent surveys; however, the actual quantities to be dredged will be computed from surveys made immediately before dredging. Any shoaling that has developed, subsequent to the surveys indicated on the drawings and contiguous to the areas indicated to be dredged under this contract, shall be removed by the Contractor at the contract unit price for dredging, including any applicable unit price adjustments if so directed by the Contracting Officer. Any such shoaling within contiguous areas will be included as part of the required dredging prism for the purposes of CONTRACT CLAUSE "VARIATION IN ESTIMATED QUANTITIES".

1.8.1 Shoaling Prior to Dredging

The drawings and quantity estimates are based on the condition of the dredging area at the time of the most recent surveys; however, the actual quantities to be dredged will be computed from surveys made immediately before dredging. Any shoaling that has developed, subsequent to the surveys indicated on the drawings and contiguous to the areas indicated to be dredged under this contract, shall be removed by the Contractor at the contract unit price for dredging, including any applicable unit price adjustments if so directed by the Contracting Officer. Any such shoaling within contiguous areas will be included as part of the required dredging prism for the purposes of CONTRACT CLAUSE "VARIATION IN ESTIMATED QUANTITIES".

1.8.2 Shoaling Subsequent to Dredging

If, before the contract is completed, shoaling occurs in any section previously accepted, including shoaling in the finished basin, because of the natural lowering of the side slopes, re-dredging at contract price, including any applicable unit price adjustments, within the limit of available funds, may be done if agreeable to both the Contractor and the Contracting Officer.

1.9 FINAL EXAMINATION AND ACCEPTANCE

As soon as practicable after the completion of the entire work or any portion of the work which in the opinion of the Contracting Officer will not be subject to damage by further operations under the contract, such work will be thoroughly examined at the cost and expense of the Government by sounding, as determined by the Contracting Officer. Should any shoals, lumps, or other lack of contract depth be disclosed by this examination, the Contractor will be required to remove same by dredging at the contract rate for dredging, but if the bottom is soft and the shoal areas are small and form no material obstruction to navigation, the removal of such shoal may be waived at the discretion of the Contracting Officer. The Contractor shall provide adequate advance notice to the Contracting Officer of the completion of dredging of each acceptance section to insure prompt performance of the after dredging acceptance surveys. The Contractor shall provide the notice in writing at least 10 calendar days in advance of anticipated completion of each section of work. If the Contractor fails to

provide this advance notice, the Contracting Officer will not be responsible for any delays caused by incomplete surveys. The Contractor will be notified when soundings are to be made, and may accompany the survey party. When the area is found to be in satisfactory condition, it will be accepted. Should more than two sounding operations by the Government over an area be necessary by reason of work for the removal of shoals disclosed at a prior sounding, the cost of such third and any subsequent sounding operations will be charged against the Contractor at the rate of $3,000 per day for each day in which the Government Plant is engaged in sounding or is en route to or from the site or held at or near the said site for such operations. Final acceptance of the whole or a part of the work and the deductions or corrections of deductions made thereon will not be reopened after having once been made, except on evidence of collusion, fraud, or obvious error, and the acceptance of a completed section shall not change the time of payment of the retained percentages of the whole or any part of the work.

1.10 SIGNAL LIGHTS

The Contractor shall display signal lights and conduct his operations in accordance with the General Regulations of the Department of the Army and of the Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges, and vessels engaged in laying cables or pipe or in submarine or bank protection operations, lights to be displayed on dredge pipe lines, and day signals to be displayed by vessels of more than 65?feet in length moored or anchored in a fairway or channel, and the passing by other vessels of floating plant working in navigable channels, as approved by the Secretary of the Army and the Commandant, U. S. Coast Guard.

1.11 SAFETY AND ACCIDENT PREVENTION

1.11.1 Safety Plan

The contractor shall not commence work at the job-site prior to the Government's review of an acceptable contractor accident prevention plan per the US Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1) and discussion of the accident prevention plan at a pre-work meeting. Allow five days for Government review of the accident prevention plan.

1.11.2 Conflicts

The Contractor shall comply with Occupational Safety and Health Act (OSHA) Standards, Coast Guard, as well as the Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1). When a conflict exists between Corps of Engineers Safety and Health Requirements Manual, nationally recognized consensus standards, or the contract plans and specifications, the most stringent requirements as determined by the Contracting Officer will govern.

1.11.3 Corps of Engineers Standards

Corps of Engineers Manual EM 385-1-1, 1996 edition, is hereby supplemented

or revised as follows:

Means of Escape for Personnel Quartered, or Working on Floating Plant

Two means of escape shall be provided for assembly, sleeping, and messing areas on floating plant. For areas involving 10 or more persons, both means of egress shall be through standard size doors opening to different exit routes. Where nine or fewer persons are involved, one of the means of escape may be a window (minimum dimensions 24 inches by 36 inches) that leads to a different exit route.

Emergency Alarms and Signals

(a) Emergency Alarms - Alarms shall be installed and maintained on all floating plant requiring a crew where it is possible for either a passenger or crewman to be out of sight or hearing from any other person. The alarm system shall be operated from the primary electrical system with standby batteries on trickle charge that will automatically furnish the required energy during an electrical-system failure. A sufficient number of signaling devices shall be placed on each deck so that the sound can be heard distinctly at any point above the usual background noise. All signaling devices shall be so interconnected that actuation can occur from at least one strategic point on each deck.

(b) Fire Alarm Signals - The general fire alarm signal shall be in accordance with Coast Guard Rules and Regulations for Cargo and Miscellaneous Vessels.

(c) Abandon Ship Signals - The signal for abandon ship shall be in accordance with the reference cited in (b) above.

(d) Man-Overboard Signal - Hail and pass the word to the bridge. All personnel and vessels capable of rendering assistance shall respond.

Hurricane Plan

A detailed plan for protection and evacuation of personnel and plant in the event of an impending hurricane or storm shall be submitted for approval as a part of the Contractor's Accident Prevention Program. The plan shall include as a minimum:

(a) The time each phase of the plan will be put in effect. The time shall be the number of hours remaining for the storm to reach the worksite if it continues at the predicted speed and direction.

(b) The safe harbor for personnel and plant specifically identified.

(c) The name of the boat that will be used to move the plant, its type, capacity, speed, and availability.

(d) The estimated time necessary to move the plant to the safe harbor after movement is started.

Equipment and Machinery Operator Authorization

The Contractor shall submit a list of designated personnel qualified and authorized to operate machinery and equipment. The list shall be maintained at the job site in a current status at all times.

1.11.4 Dredge and Attendant Plant

1.11.4.1 Equipment and Machines

All operable equipment and machines, shall be checked for:

(a) Manufacturer's safety instructions, permanent-mounted and easily read.

(b) Guard Rails and lifelines at overboard access areas, as applicable.

(c) Cover exposed moving parts with safety-guards to prevent someone from accidentally stepping or falling on them.

1.11.5 Dozers, Front-End Loaders, Backhoes, and Other Wheeled-Tract Machines

Dozers, front-end loaders, backhoes, and other wheeled-tract machines operated at the upland placement area shall be equipped with rollover protection and seatbelts. All rotating or reciprocating parts, and any parts subject to high operational temperatures that are of such nature or so located as to be or become a hazard to the operating or attending personnel, shall be substantially guarded and insulated to the extent necessary to eliminate the hazard. Walking or working surfaces and platforms shall be of an anti-skid type.

1.11.5.1 Checks

All front end loader?backhoe machines and other machines, such as tractors that utilize a backhoe attachment, shall be checked for:

(a) Exposed backhoe boom swing foot pedals.

(b) Backhoe boom swing lever that can be reached by a man standing on the ground or on the outrigger support bracket.

1.11.5.2 Controls

Where these conditions exist, guards shall be fabricated to:

(a) Cover over exposed foot pedals to prevent someone from accidentally stepping on them.

(b) Enclose the swing lever so as to preclude operation from the ground or from the outrigger support bracket.

1.11.6 Diving Operations Plan

All diving operations shall be planned in accordance with the Corps of Engineers Safety Manual EM 385-1-1 and must be limited to those tasks that cannot be accomplished in any other manner. The Contractor shall submit for approval all information which may affect the work to be accomplished, including divers names, medical examination reports, qualifications of all divers and top-side tenders to be employed in the diving operations, plant and equipment to be employed on the work, and a written dive plan with sketches and narrative descriptions for each phase of the planned dive.

1.12 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE

1.12.1 Costs

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 when the Government can determine both ownership and operating costs for each piece of equipment or equipment groups of similar serial and series from the Contractor's accounting records. When both ownership and operating costs cannot be determined from the Contractor's accounting records, equipment costs shall be based upon the applicable provisions of EP 1110?1?8, "Construction Equipment Ownership and Operating Expense Schedule", Region II. 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 retrospective pricing, the schedule in effect at the time the work was performed shall apply.

1.12.2 Rentals

Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36 substantiated by certified copies of paid invoices. Rates for equipment rented from an organization under common control, lease?purchase or sale?leaseback arrangements will be determined using the schedule except that rental costs leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees are allowable. Costs for major repairs and overhaul are unallowable.

1.12.3 Data

When actual equipment costs are proposed and the total amount of the pricing action is over $25,000, cost or pricing data shall be submitted on the Standard Form 1411, "Contract Pricing Proposal Cover Sheet". By submitting cost or pricing data, the Contractor grants to the Contracting Officer or an authorizing representative the right to examine those books, records, documents and other supporting data that will permit evaluation of the proposed equipment costs. After price agreement the Contractor shall certify that the equipment costs or pricing data submitted are accurate,

complete and current.

1.13 BRIDGE-TO-BRIDGE RADIO COMMUNICATION

In order that radio communication may be made with passing vessels, all dredges engaged in work under this contract shall be equipped with bridge-to-bridge radio telephone equipment. The radio telephone equipment shall operate on a single channel very high frequency (VHF), FM, on a frequency of 156.65 megahertz with low power output having a communication range of approximately ten miles. The Federal Communications Commission has approved the frequency.

1.13.1 Radio

The Contractor shall provide the Government construction representative a portable radio capable of communicating with the dredge for the duration of work under this contract. The Contractor shall maintain the radio as required.

1.14 NOTIFICATION OF COAST GUARD

Prior to commencement of work on this contract, the Contractor shall notify the Commander, Fifth Coast Guard District of his intended operations to dredge and request that it be published in the Local Notice to Mariners. This notification must be given in sufficient time so that it appears in the Notice to Mariners at least 5 workdays prior to the commencement of this contract.

1.14.1 Local Notice To Mariners

The Local Notice To Mariners (LNM) for the Fifth Coast Guard District is available by phone at (757) 398-6367, on the Internet at: http://www.navcen.uscg.gov/lnm/d5/default.htm, and e-mail address: D5Local@LANTD5.uscg.mil. The LNM is the primary means for disseminating information concerning aids to navigation, hazards to navigation, and other items of marine information of interest to mariners on the waters of the United States, its territories, and possessions. These notices are essential to all navigators for the purpose of keeping their charts, light lists, Coast Pilots and other nautical publications up-to-date. These notices are published weekly. They may be obtained free of charge, by making application to the Fifth Coast Guard District, Federal Building, 431 Crawford Street, Portsmouth, Virginia 23704. If the Contractor encounters any objects on the channel bottom during dredging operations or transport of his plant that could be a hazard to navigation, he shall notify the Coast Guard immediately as to location and at the same time notify the Contracting Officer.

1.14.2 Navigation Aids

The Contractor shall not relocate or move any aids to navigation that have been established by the U.S. Coast Guard. If it becomes necessary to have any aid to navigation moved in order to complete dredging operations under this contract, the Contractor shall notify the U.S. Coast Guard in writing at the address above with a copy to the Contracting Officer not less than

15 calendar days prior to such need for movement. The Contractor shall notify the U.S. Coast Guard of the approximate time the navigation aid may be relocated to its original position. All notifications to the U.S. Coast Guard shall at the same time be provided to the Contracting Officer and recorded in the Daily Report of Operations. In the event that the Contractor disturbs or damages any navigation aid during work operations, which includes during mobilization or demobilization of his plant, the Contractor shall immediately stop the activity which disturbed or damaged the navigation aid, take immediate corrective action to prevent further disturbances or damage, and shall notify the Coast Guard immediately as to location, and at the same time notify the Contracting Officer.

1.15 ENVIRONMENTAL LITIGATION

1.15.1 Litigation

If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor or a subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the "Suspension of Work" clause of this contract. The period of such suspension, delay, or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof. The term "environmental litigation" means, a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

1.16 HISTORICAL AND ARCHAEOLOGICAL FINDS

Federal legislation provides for the protection, preservation, and collection of scientific, prehistoric, historic, and archaeological data, including relics and specimens that might otherwise be lost as a result of any Federal construction project. Should the Contractor, or any of the Contractor's employees, or parties operating or associated with the Contractor, in the performance of this contract discover evidence of possible scientific, prehistoric, historic, or archaeological data, the Contractor shall immediately cease work at that location, and notify the Contracting Officer, giving the location and nature of the findings. The Contractor shall forward written confirmation to the Contracting Officer as directed. The Contractor shall exercise care so as not to disturb or damage shipwrecks, artifacts or fossils uncovered during excavation, dredging and material placement operations, and shall provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition. Any person who, without written permission, injures, destroys, excavates, appropriates, moves or removes any historic

or prehistoric artifact, object of antiquity, or archaeological resource is subject to arrest and penalty of law. Where appropriate by reason of discovery, the Contracting Officer may order delays in the time of performance or changes in the work, or both. If such delays or changes are ordered, an equitable adjustment will be made in accordance with the applicable clauses of the contract.

1.17 SCHEDULING AND DETERMINATION OF PROGRESS

In accordance with the Contract Clauses, the Contractor shall submit for approval a practicable Progress Schedule at the Pre-Construction Conference specified in SECTION 01200. The Progress Schedule shall be prepared and certified as complete by the Contractor's Quality Control Representative in the form of a chart graphically indicating the sequence proposed to accomplish each work feature or operation. The chart shall be prepared to show the starting and completion dates of all work features on a linear horizontal time scale beginning with date of Notice to Proceed, arrival date of Contractor's plant to the job site, all activities scheduled prior to dredging, dredging start and completion dates, and calendar days to completion of all work. Each activity in the construction shall be represented by an arrow. The head to tail arrangement of arrows shall flow from left to right and shall show the order and interdependence of activities and the sequence in which the work is to be accomplished as planned by the Contractor. Each arrow representing an activity shall be annotated to show the activity description and duration. Contractor shall indicate on the chart the important work features or operations that are critical to the timely overall completion of the project. Key dates for such important work features and portions of work features are milestone dates and shall be so indicated on the chart. This schedule will be the medium through which the timeliness of the Contractor's construction efforts is appraised. When changes are authorized that result in contract time extensions, the Contractor shall submit a modified chart for approval by the Contracting Officer. The Contract Clause entitled "SCHEDULE FOR CONSTRUCTION CONTRACTS" with reference to overtime and extra shifts, may be invoked when the Contractor fails to start or complete work features or portions of same by the time indicated by the milestone dates of the approved progress chart, or when it is apparent to the Contracting Officer from the Contractor's actual progress that these dates will not be met. Neither on this chart nor on the periodic chart which the Contractor is required to prepare and submit, as described in "SCHEDULE FOR CONSTRUCTION CONTRACTS" of the Contract Clauses, shall the actual progress to be entered include or reflect any materials which may be on the site, but are not yet installed or incorporated in the work. For payment purposes only, an allowance will be made by the Contracting Officer of 100 percent of the invoiced cost of materials or equipment delivered to the site but not incorporated into the construction, pursuant to Contract Clause "PAYMENTS UNDER FIXED?PRICE CONSTRUCTION CONTRACTS". The Contractor's progress schedule shall include a chart of the scheduled work activities plotting scheduled completion percentage based on dollar value on one axis and time on the other axis. The actual progress shall be plotted on the required periodic chart submittals to indicate the percentage of work scheduled and actually completed.

1.18 PROFIT

1.18.1 Weighted Guidelines

Weighted guidelines method of determining profit shall be used on any equitable adjustment change order or modification issued under this contract. The profit factors, expressed as a percent, shall be as follows:

Factor	Rate	Weight	Value
Degree of Risk	20		
Relative difficulty of work	15		
Size of Job	15		
Period of performance	15		
Contractor's investment	5		
Assistance by Government	5		
Subcontracting	25		
	100		

1.18.2 Values

Based on the circumstances of each procurement action, each of the above factors shall be weighted from .03 to .12 as indicated below. The value shall be obtained by multiplying the rate by the weight. The value column when totaled indicates the fair and reasonable profit percentage under the circumstances of the particular procurement.

1.18.2.1 Degree of Risk

Where the work involves no risk or the degree of risk is very small, the weighting should be .03; as the degree of risk increases, the weighting should be increased up to a maximum of .12. Lump sum items will have, generally, a higher weighted value than the unit price items for which quantities are provided. Other things to consider: the portion of the work to be done by subcontractors, nature of work, where work is to be performed, reasonableness of negotiated costs, amount of labor included in costs, and whether the negotiation is before or after performance of work.

1.18.2.2 Relative Difficulty of Work

If the work is most difficult and complex, the weighting should be .12 and should be proportionately reduced to .03 on the simplest of jobs. This factor is tied in to some extent with the degree of risk. Some things to consider: the nature of the work, by whom it is to be done, where, and what is the time schedule.

1.18.2.3 Size of Job

All work not in excess of $100,000 shall be weighted at .12. Work estimated between $100,000 and $5,000,000 shall be proportionately weighted from .12 to .05.

1.18.2.4 Periods of Performance

Jobs in excess of 24 months are to be weighted at .12. Jobs of lesser

duration are to be proportionately weighted to a minimum of .03 for jobs not to exceed 30 days. No weight where additional time not required.

1.18.2.5 Contractor's Investment

To be weighted from .03 to .12 on the basis of below average, average, and above average. Things to consider: amount of subcontracting, mobilization payment item, Government furnished property, equipment and facilities, and expediting assistance.

1.18.2.6 Assistance by Government

To be weighted from .12 to .03 on the basis of average to above average. Things to consider: use of Government owned property, equipment and facilities, and expediting assistance.

1.18.2.7 Subcontracting

Shall be weighted inversely proportional to the amount of subcontracting. Where 80 percent or more of the work is to be subcontracted, the weighting is to be .03 and such weighting proportionately increased to .12 where all the work is performed by the Contractor's own forces.

1.19 PARTNERING

In order to most effectively accomplish this contract, the Government is willing to form a cohesive partnership with the Contractor. This partnership would strive to draw on the strengths of each organization in an effort to achieve a quality project done correctly, within budget, and on time. This partnership would be bilateral in make-up and partnership will be totally voluntary. Any cost associated with effectuating this partnership will be agreed to by all parties and will be shared equally with no change in contract price.

1.20 SUBCONTRACTS AND WORK COORDINATION

Contract Clauses "SUBCONTRACTS", "PERMITS AND RESPONSIBILITIES", and "MATERIAL AND WORKMANSHIP" are supplemented as follows:

(a) Divisions or sections of specifications are not intended to control the Contractor in dividing the work among subcontractors, or to limit work performed by any trade.

(b) Contractor shall be responsible for coordination of the work of the trades, subcontractors, and materials.

(c) The Government or its representative will not undertake to settle any difference between the Contractor and Contractor's subcontractors, or between subcontractors.

(d) The Government reserves the right to refuse to permit employment on the work or require dismissal from the work of any subcontractor who, by reason of previous unsatisfactory work on Corps of Engineers projects, or for any other reason is considered by the Contracting

Officer to be incompetent or otherwise objectionable.

1.21 CONSTRUCTION MANPOWER AND EQUIPMENT REPORT

The Contractor shall submit executed CENAO Form 987, Construction Manpower and Equipment Report daily. The report shall include manpower and equipment for the general and subcontractors. Forms are available from the Contracting Officer.

PART 2 PRODUCTS (THIS PART NOT USED)

PART 3 EXECUTION (THIS PART NOT USED)

-- End of Section --

NORFOLK DISTRICT ACTIVITY HAZARD ANALYSIS FORM (Example Only)

CONTRACT #: (XXXXXXXXXX)	PROJECT / ACTIVITY: EMBREY DAM REMOVAL PROJECT	LOCATION: DATE: FREDERICKSBURG, VA XX\XX\XX
TECHNICAL SPECIFICATION LOCATIONS: (Insert Applicable Section / Paragraph)	PERSON / CREW PERFORMING WORK: (XXXXXXXXXXXX)	FOREMAN OR SUPERVISOR: (XXXXXXXXXXX)

SPECIAL HEALTH AND SAFETY CONSIDERATIONS FOR DREDGED MATERIAL PLACEMENT OPERATIONS :
WORKER SAFETY FOR NIGHT OPERATIONS, DREDGED MATERIAL PLACEMENT INSPECTIONS, COMMUNICATIONS WITH DREDGE AND ISOLATED WORKERS, MANPOWER STAFFING NEEDS, WATER QUALITY TESTING, PLACEMENT AREA CONSTRUCTION

ANALYSIS BY: (APPROVED COMPETENT PERSON)	REVIEWED BY: (CONTRACTOR CQC)	APPROVED BY: (COE REPRESENTATIVE)

ACTIVITY	POTENTIAL HAZARDS	ACTION TO AVOID HAZARDS
MATERIAL PLACEMENT	PIPE AND OUTFALL SAFETY HEAVY EQUIPMENT- EARTHWORK SAFETY PUBLIC ACCESS AND EGRESS	PROVIDE DETAIL WORK PLAN, ADDRESS MANPOWER NEEDS AND REQUIREMENTS, COMMUNICATIONS WITH DREDGE PLAN AND CONTINUOUS CHECK AND RECORDING OF FINDINGS PROCESS, STOP WORK PLAN FOR COMMUNICATION FAILURES
	COMMUNICATION	RADIO CHECKS, ARRANGEMENT FOR CONSTANT COMMUNICATION WITH DREDGE AT PLACEMENT AREA, NIGHT FAILURE PLAN
	WATER QUALITY TESTING	DAY AND NIGHT TESTING PLANS

(Note this form is an example to be used as a guide only by the Contractor in preparing his own Activity Hazard Analysis. The Contractor is required to submit his own Activity Hazard Analysis of all the scheduled work as specified for approval. Contractor responsible for all costs to meet this requirement.

SECTION 01055

SOIL BORING DATA

PART 1 GENERAL

1.1 GENERAL

The following pages are logs of Standard Penetration testing boring logs("B"), Vibracores ("VC") and Probes (###-##) from the the area to be dredged and the Placement Area. The information contained herein represent the basic subsurface conditions at the project site.

1.2 LOCATIONS

Locations are shown on the contract drawings.

1.3 CHARACTER OF MATERIALS

This data is included for information only. Each log is believed to show the nature of the materials encountered at that specific location and to the depth indicated on the log.

1.4 BORING NOTES

1.4.1 Borings Labeled B

Borings labeled as B were performed in accordance with ASTM D 1586, Penetration Test and Split-Barrel Sampling of Soils.

1.4.1.1 Standard Penetration Test (SPT)

The Standard Penetration Test (SPT) indicates depth of a sample and number of blows required to drive a 2 inch (50 mm) O.D. split spoon sampler 6 inches (150 mm), unless otherwise noted, into undisturbed soil with a 140 pound (0.625 kN) hammer falling 30 inches (0.75 meters). The standard penetration "N" value is the sum of the last two 6-inch drives; i.e., 6, 4, 5; N=9 or middle two 6-inch drives; i.e., 6, 4, 5, 3; N=9. Standard penetration values are in the Remarks column on the logs, shown as #+#+#+#, with each # representing the blows for a 6-inch drive, or as noted in the headers of the log sheets.

1.4.1.2 Soils

Soils (ML, CL, GP, etc.) are classified in accordance with ASTM D 2487, Classification of Soils for Engineering Purposes. Available lab data is presented on the logs.

1.4.1.3 Densities and Consistencies

Soil densities and consistencies are estimated and are based on the

following tables:

Relative Density of Gravels/Sands According to Results of SPT

No. of Blows N	Relative Density
0-4	Very Loose
4-10	Loose
10-30	Medium
30-50	Dense
Over 50	Very Dense

Consistency of Clays/Silts, According to Results of SPT

No. of Blow N	Consistency
0-2	Very Soft
2-4	Soft
4-8	Medium
8-15	Stiff
15-30	Very Stiff
Over 30	Hard

1.4.2 Vibracores

Vibracores labeled VC were performed in the Rappahannock River from a pontoon barge using a 3.5-inch diameter vibracore. The vibracore sample depth was to refusal.

1.4.2.1 Classification

Soils (ML, CL, GP, etc.) are classified in accordance with ASTM D 2487, Classification of Soils for Engineering Purposes. Available lab data is presented on the logs.

1.4.3 Probes

To help define the sediment/bedrock interface, 71 probings were done along seven cross-sections upstream of Embrey dam. Probe number designations relate to the station and location (i.e. probe "1700-02" is probe number 2 along cross-section 17+00). Probes were approximately every 50 feet along each cross-section. Locations are shown on the drawings. The sediments were probed using a 20-foot long pipe from a small work boat. The pipe was attached to a small pump to jet the pipe through the stiffer sediments. The probe was initially lowered through the sediment by the pipes weight only, without the aid of the pump. Field logs recorded depth of water, depth of sediment, and depth to refusal; however, not all probes reached refusal due to the 20-foot pipe limitation. Classifications and designation of "Rock" are estimated based on the feel of the pipe going through the material, no samples were taken.

1.4.4 Elevations

All elevation and locations are approximate, and are based on existing topography.

1.4.5 Dates

Dates shown on logs are completion dates.

1.4.6 Abbreviations

Abbreviation	Meaning
BOH	Bottom of Hole
brn	Brown
cly	Clayey
crs, c	Coarse
DH	drill hole
dia	diameter
do	Ditto
dk	Dark
fn, f	Fine
gry	Gray
gvy	Gravelly
HP	High Plasticity
lt	Light
med, m	Medium
MP	Medium Plasticity

Abbreviation	Meaning
NP	Nonplastic
PHI	Friction Angle
PI	Plastic Index
Piez	Piezometer
PL	Plastic Limit
plast	Plasticity, Plastic
PP	Pocket Penentrometer
sat	Saturated
som	Some
SPT	Standard Penetration Testing
tr	Trace
v	Very
v.f.	Very Fine
vert	Vertical
w	Moisture Content
WOR	Weight of Rod
WOH	Weight of Hammer
&	and

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

Vibracore Report and Logs – Rappahannock River

Geotechnical Engineering Services
Proposed Breaching of Embrey Dam
Fredricksburg, Virginia

Project 993635

Schnabel Engineering

Geotechnical Engineering Services, Proposed Breaching of Embrey Dam, Fredricksburg, Virginia

Project 993635

March 10, 2000

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EXECUTIVE SUMMARY

The project site is underlain by saturated alluvial soils consisting of silts, clays and sands to a maximum depth of about 21 ft below the water surface. Thickness of the alluvial soils ranges from 0.2 ft to 9.7 ft. Beneath these alluvial soils, bedrock is present. Refusal on bedrock was recorded at depths of 9 ft to 21 ft below the water surface. Bedrock is undifferientiated meta-sedimentary and meta-igneous rock.

Analytical chemical testing of the alluvial soils indicate low to moderate levels of nitrogen (TKN), nitrogen (ammonia), nitrogen (nitrite), nitrogen (nitrate) and phosphorus. High levels of aluminum were detected in the soils. Trace to low levels of antimony, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, silver, sodium, thallium, vanadium and zinc were also detected.

Please refer to the report and the appendices for actual test results.

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Appendices:

Appendix A: Subsurface Exploration Data
Appendix B: Soil Laboratory Test Results
Appendix C: Analytical Chemical Test Results

1 INTRODUCTION

1.1 Scope of Services

The objective of this study is to conduct a subsurface exploration and laboratory testing program to characterize the subsurface conditions for this project. The scope of this study is as defined in our proposal for this project dated December 8, 1999 and our revised proposal addendum dated January 11, 2000. Our services included subsurface exploration, field engineering, soil laboratory testing, analytical chemical testing of soils and, preparation of a data report.

1.2 Project Description

We understand there are plans to breach this 22 ft high dam on the Rappahannock River. We further understand that significant depths of sediment have accumulated behind the dam, and that the Corps of Engineers would like to investigate the composition of these materials.

1.3 Site Description

The project site is a section of the Rappahannock River located immediately east of the I-95 crossing in Fredericksburg, Virginia. From the I-95 crossing, the site extends eastward for about 3,500 ft to the Embrey Dam. Width of the river in this area is about 400 to 700 ft. Bedrock outcroppings exist in this area of the river and can be visually observed as projections above the surface of the water. This section of the Rappahannock River is non-tidal. The pool elevation of the river is about El 53.

We obtained the site information from an undated site plan titled Embrey Dam, prepared by Department of the Army, Norfolk District, Corps of Engineers, Norfolk, Virginia, and through our site visits.

2 DATA COLLECTION AND ANALYSIS

2.1 Geology

The site is located on the fall line. The fall line is the boundary between the Piedmont physiographic province to the west and the Coastal Plain physiographic province to the east. The fall line is a northerly trending line where the underlying bedrock surfaces (rises), separating it from the marine sediments of the last major transgression of the Atlantic Ocean. The Coastal Plain generally consists of gently seaward dipping sediments of Cretaceous to recent geologic age. The Piedmont generally consists of metamorphic and igneous rocks of Pre-Cambrian to Jurassic geologic age overlain by residual soils.

The site is situated in the Rappanannock River Drainage Basin. Within this basin, recent alluvial soils underlie the river and its floodplain. Beneath the alluvium, Pre-Cambrian undifferientiated meta-sedimentary and meta-igneous bedrock is present.

2.2 Data Collection Techniques

Nineteen Vibracores were drilled at this site under our observation by Aqua Survey Inc., of Flemmington, New Jersey. Specific observations, remarks, and logs for the vibracores, classification criteria and sampling protocols are included in Appendix A. Approximate vibracore locations are shown in Figure A1 in Appendix A.

Vibracores were advanced from a pontoon barge through the alluvium to refusal on the underlying bedrock. Samples were collected in disposable 3.5 inch diameter butyrate liners. End caps were placed on each end of the liner and sealed with duct tape. Sample recoveries generally ranged from 14% to 67%.

Composite samples were obtained from the vibracore samples for analytical chemical testing. Composite samples were stored on ice until their arrival at the chemical laboratory. Analytical chemical testing was performed on the composite samples by EnviroCompliance, Laboratories, Inc., of Ashland, Virginia.

Our geotechnical laboratory conducted tests on selected samples obtained in the vibracores. This testing aided in the classification of soils encountered in the subsurface exploration. The natural moisture content values of selected soil samples are shown in

the remrks column of the vibracore logs in Appendix A. The results of the remaining laboratory tests are presented in Appendix B.

2.3 Generalized Subsurface Stratigraphy

We have characterized the following generalized subsurface soil stratigraphy based on the vibracore data presented in Appendix A:

Stratum A: Stratum A consists of coarse-grained alluvium. Stratum A is composed of POORLY GRADED SAND (SP), POORLY GRADED SAND WITH SILT (SP-SM) and CLAYEY SAND (SC). Stratum A was encountered in all of the vibracore locations to depths of 8.7 ft to 20.6 ft, except for VC-6, which had no recovery.

Stratum B: Stratum B consists of fine-grained alluvium. Stratum B is composed of FAT CLAY (CH), SILT (ML) and ELASTIC SILT (MH). Stratum B was generally encountered in the eastern section of the site below Stratum A but was also interlayered within Stratum A. Stratum B was encountered in Vibracores VC-8, VC-10, ,VC-12,VC-13,VC-14, VC-16 and VC-19. Stratum B was encountered to the maximum depths of the vibracores 8.8 to 19.6 ft.

3 LABORATORY TESTING

3.1 Geotechnical Testing

Our geotechnical laboratory conducted tests on selected samples obtained in the vibracores. Our testing included 22 natural moisture tests, 22 Atterberg Limits, 22 full sieves, two specific gravity tests and eight hydrometer tests.

The results of our soil laboratory testing are included in Appendix B. Natural moisture contents of the samples are presented in the remarks column on the vibracore logs included in Appendix A.

Thirteen samples representing the coarse-grained alluvial soils of Stratum A were classified. Laboratory analyses of these samples indicated POORLY GRADED SAND (SP) and CLAYEY SAND (SC). Natural moisture content of Stratum A soils ranged from 5.1% to 25.3%. These natural moisture contents are likely skewed due to the vertical migration of the free water in the permeable sands within the butyrate sample liners. Plasticity Indices for the soils of Stratum A ranged from non-plastic to 18.

Nine samples representing the fine-grained alluvial soils of Stratum B were classified. Laboratory analyses of these samples indicated they classify as SILT (ML) and ELASTIC SILT (MH). Natural moisture content of Stratum B soils ranged from 37.4% to 59.8%. Plasticity Indices of Stratum B ranged from 7 to 15. The specific gravity of Stratum B ranged from 2.68 to 2.70.

3.2 Analytical Chemical Testing

EnviroCompliance Laboratories, Inc. of Ashland, Virginia performed analytical chemical testing of the on-site soils. Sediment samples were tested for TCL-SVOC, TCL-TPH, TCL-PAH, TCL-Pesticides, TCL-PCB, TAL-Metals, Cyanide, Nitrogen (TKN), Nitrogen (Ammonia), Nitrogen (Nitrate), Nitrogen (Nitrite), Phosphorus (All Forms), BOD, COD, Sulfides (Titrimetric) and Sulfides (Distallation). All testing was performed as ellutriate testing. Samples of on-site river water were collected and used as the ellutriate for the testing. The chemical test results are included as Appendix C.

Composite samples were divided into two areas. Area No. 1 is defined as the upstream area of the limit of study. Area No. 2 is defined as the downstream area of the limit of

study. These areas were divided in an effort to compare significant sediment accummulation behind the existing dam to shallower depths of sediment accumulation further upstream of the existing dam. Areas No. 1 and No. 2 were further subdivided into the upper recoverable sediments and the lower recoverable sediments. Upper and lower divisions were made in an effort to profile chemical concentrations throughout the column of sediment. Composite sample areas are indicated in Figure A1.

Results of the analytical chemical testing indicate low to moderate levels of ammonia (TKN), ammonia, nitrites, nitrates and phosphorus. Metal analysis indicated generally high levels of aluminum. Trace to low levels of antimony, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, silver, sodium, thallium, vanadium and zinc were also detected. Results indicate low levels of sulfides are present in sediments immediately behind the existing dam. The detected analytes and the corresponding concentrations are presented in the Table 1 below.

Table 1					
Analyte	**Ellutriate/ River Water (mg/L)**	**Upper Sediments Area 1 (mg/L)**	**Lower Sediments Area 1 (mg/L)**	**Upper Sediments Area 2 (mg/L)**	**Lower Sediments Area 2 (mg/L)**
Ammonia (TKN)	0.4	5.2	9.2	10.2	28.4
Ammonia	BDL	4.1	7.2	6.3	14.4
Phosphorus	0.13	2.87	2.26	2.05	7.01
COD	24	79	152	16	1319
Nitrite	BDL	0.02	0.25	0.19	BDL
Nitrate	0.8	0.9	0.9	1.0	1.2
BOD	< 2	2	3	<2	4
Sulfide (Titrimetric)	BDL	BDL	BDL	1.0	1.0
Sulfide (Distillation)	BDL	BDL	BDL	1.0	1.0
Aluminum	0.244	49.451	115.085	91.760	24.104
Antimony	BDL	0.019	0.039	0.004	0.064
Beryllium	BDL	0.003	0.008	BDL	0.012
Calcium	5.0	BDL	BDL	77.0	BDL
Chromium	0.002	0.008	0.091	0.079	0.030
Cobalt	0.002	0.047	0.093	0.033	0.157
Copper	BDL	0.043	0.140	0.003	0.175
Iron	0.73	9.5	70.2	63.3	21.2
Lead	BDL	BDL	0.046	BDL	0.048
Magnesium	2.848	3.238	5.526	6.363	10.271
Manganese	0.054	0.313	0.620	3.420	1.213
Nickel	BDL	BDL	0.027	0.019	0.007
Potassium	1.91	2.88	8.56	5.63	5.63
Silver	BDL	BDL	0.001	BDL	0.002
Sodium	4.4	4.5	7.4	8.7	4.5
Thallium	BDL	BDL	0.020	BDL	0.036
Vanadium	BDL	0.13	0.33	BDL	0.32
Zinc	BDL	0.08	0.17	BDL	0.27

BDL = Below Detection Limit

4 LIMITATIONS

This report has been prepared to aid in the evaluation of this site and to assist in the design of the project. It is intended for use concerning this specific project.

We have performed our services and prepared this report according to generally accepted geotechnical engineering practices. No warranty, express or implied, is made as to the data included in this report.

SUBSURFACE EXPLORATION DATA

Subsurface Exploration Procedures
General Notes for Subsurface Exploration Logs
Identification of Soil
Vibracore Logs, V-1 through VC-19
Location Plan, Figure A1

SUBSURFACE EXPLORATION PROCEDURES

Vibracore Procedure

Vibracores were advanced from a pontoon barge at the water surface. The vibracore sample apparatus was lowered through the water to the top of the sediment. A measurement of the depth of water was then made. The vibracores were then advanced by using compressed air to vibrate a stainless steel sample core barrel through the underlying sediment. The core barrel was lined with a butyrate sample liner to retain the sediment. The vibracores were advanced through the sediment to refusal on the underlying bedrock. A final depth of penetration was measured and the core barrel brought to the deck of the pontoon barge. Once on the deck of the barge, the butyrate sample liner was removed from the core barrel and sealed with end caps and duct tape. The sample was then labeled with the job number, date, vibracore number, sample depth, and top and bottom.

Soil Classification Criteria

The group symbols on the vibracore logs represent the Unified Soil Classification System Group Symbols (ASTM D-2487) based on visual observation and limited laboratory testing of the samples. Criteria for visual identification of soil samples are included in this appendix. Some variation may be expected between samples visually classified and samples classified in the laboratory.

Vibracore Locations and Elevations

The vibracores were performed at locations which we staked in the field by using GPS. Approximate vibracore locations are shown in Figure A1. Water surface elevations at the vibracore locations were obtained from the pool grade indicated on the site plan. These locations and elevations should be considered no more accurate than the methods and plans used to obtain them.

SCHNABEL ENGINEERING ASSOCIATES, INC.

GENERAL NOTES FOR SUBSURFACE EXPLORATION LOGS

1. Numbers in sampling data column next to Standard Penetration Test (SPT) symbols indicate blows required to drive a 2 inch O.D., 1-3/8 inch I.D. sampling spoon 6 inches using a 140 pound hammer falling 30 inches. The Standard Penetration Test (SPT) N value is the number of blows required to drive the sampler 12 inches, after a 6 inch seating interval. The Standard Penetration Test is performed in accordance with ASTM-1586.

2. Visual classification of soil is in accordance with terminology set forth in "Identification of Soil." The ASTM D-2487 group symbols (e.g. CL) shown in the classification column are based on visual observations.

3. Estimated ground water levels indicated by ▽; these levels are only estimates from available data and may vary with precipitation, porosity of the soil, site topography, etc.

4. Refusal at the surface of rock, boulder, or obstruction is defined as an SPT resistance of 100 blows for 2 inches or less of penetration.

5. The logs and related information depict subsurface conditions only at the specific locations and at the particular time when drilled or excavated. Soil conditions at other locations may differ from conditions occurring at these locations. Also, the passage of time may result in a change in the subsurface soil and ground water conditions at the test boring, test pit and/or hand auger locations.

6. The stratification lines represent the approximate boundary between soil and rock types as obtained from the subsurface exploration. Some variation may also be expected vertically between samples taken. The soil profile, water level observations and penetration resistances presented on these logs have been made with reasonable care and accuracy and must be considered only an approximate representation of subsurface conditions to be encountered at the particular location.

7. Key to symbols and abbreviations:

▯	5÷10÷15	Standard Penetration Test
▯	3T 24/18	2" or 3" Undisturbed Tube Sample Length Pushed/Recovery (in inches)
		Rock Core Sample Core Diamater Size/Recovery %/RQD%
w		Water Content
Do		Ditto
WOW		Water Observation Well
PP		Pocket Penetrometer Reading (TSF)
FID		Flame Ionization Detector Reading (PPM)
PID		Photoionization Detector Reading (PPM)
GP		Geostick Penetration Reading (inches)

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Consulting Geotechnical Engineers

IDENTIFICATION OF SOILS

I. DEFINITION OF SOIL GROUP NAMES (ASTM D-2487-83)

			SYMBOL	GROUP NAME
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels – More than 50% of coarse fraction retained on No. 4 sieve Coarse, ¾" to 3" Fine, No. 4 to ¾"	Clean Gravels Less than 5% fines	GW	Well graded gravel
			GP	Poorly graded gravel
		Gravels with fines More than 12% fines	GM	Silty gravel
			GC	Clayey gravel
	Sands – 50% or more of coarse Fraction passes No. 4 sieve Coarse, No. 40 to No. 4 Medium, No. 40 to No. 10 Fine, No. 200 to No. 40	Clean Sands Less than 5% fines	SW	Well-graded sand
			SP	Poorly graded sand
		Sands with fines More than 12% fines	SM	Silty sand
			SC	Clayey sand
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays – Liquid Limit less than 50 Low to medium plasticity	Inorganic	CL	Lean clay
			ML	Silt
		Organic	OL	Organic clay
				Organic silt
	Silts and Clays – Liquid Limit 50 or more Medium to high plasticity	Inorganic	CH	Fat clay
			MH	Elastic silt
		Organic	OH	Organic clay
				Organic silt
Highly Organic Soils	Primarily organic matter, dark in color and organic odor		PT	Peat

II. DEFINITION OF MINOR SOIL COMPONENT PROPORTIONS

Adjective Form			Examples
	Gravelly Sandy	30% or more coarse grained	Gravelly lean clay
"With"	With gravel With sand	15% or more coarse grained	Fat clay with gravel
	With silt With clay	5% to 12% fine grained	Poorly graded sand with silt
"Trace"	Trace gravel Trace sand	1% to 15% coarse grained	Silty sand, trace gravel
	Trace clay Trace silt	1% to 5% fine grained	Poorly graded sand, trace clay

III. GLOSSARY OF MISCELLANEOUS TERMS

SYMBOLS ..... Unified Soil Classification Symbols are shown above as group symbols. Dual symbols are used for borderline classifications.

BOULDERS & COBBLES..... Boulders are considered rounded pieces of rock larger than 12 inches, while cobbles range from 3 to 12 inch size.

DISINTEGRATED ROCK ..... Residual rock materials with a standard penetration resistance (SPT) between 60 blows per foot and refusal. Refusal is defined as a SPT of 100 blows for 2" or less penetration.

ROCK FRAGMENTS ..... Angular pieces of rock, distinguished from transported gravel, which have separated from original vein or strata and are present in a soil matrix.

QUARTZ ..... A hard silica mineral often found in residual soils.

IRONITE ..... Iron oxide deposited within a soil layer forming cemented deposits.

CEMENTED SAND..... Usually localized rock-like deposits within a soil stratum composed of sand grains cemented by calcium carbonate or other materials.

MICA ..... A soft plate of silica mineral found in many rocks, and in residual or transported soil derived therefrom.

ORGANIC MATERIALS ..... (Excluding Peat)
- Topsoil .....Surface soils that support plant life and which contain considerable amounts of organic matter;
- Organic Matter .....Soil containing organic colloids throughout its structure;
- Lignite .....Hard, brittle decomposed organic matter with low fixed carbon content (a low grade of coal).

FILL..... Man-made deposit containing soil, rock and often foreign matter.

PROBABLE FILL ..... Soils which contain no visually detected foreign matter but which are suspect with regard to origin.

LENSES..... 0 to ½ inch seam of minor soil component.

LAYERS..... ½ to 12 inch seam of minor soil component.

POCKET..... Discontinuous body of minor soil component.

COLOR SHADES..... Light to dark to indicate substantial difference in color.

MOISTURE CONDITIONS ..... Wet, moist or dry to indicate visual appearance of specimen.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-1 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/11/00 **Finished:** 1/11/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/11	--	--	--	--
Completion	1/11	--	--	--	--
Casing Pulled	1/11	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
+53	Water				5			RAPPAHANNOCK RIVER
8.2 8.7	Fine to coarse poorly graded sand, trace silt and gravel, contains mica, shell and leaf fragments, wet - brown Core terminated at 8.7 ft	SP	44.8 44.3	A		REC=33.3%		ALLUVIUM Vibracore refusal at 8.7 ft.

Comments:
2 inch recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-2 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/11/00 **Finished:** 1/11/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/11	--	--	--	--
Completion	1/11	--	--	--	--
Casing Pulled	1/11	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water				5			RAPPAHANNOCK RIVER
9.2 9.7	Fine to coarse poorly graded sand, trace silt, contains shell and leaf fragments, wet - brown Core terminated at 9.7 ft	SP	43.8 43.3	A		REC=33.3%		ALLUVIUM Vibracore refusal at 9.7 ft.

Comments:
2 inch recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-3 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/11/00 **Finished:** 1/11/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/11	--	--	--	--
Completion	1/11	--	--	--	--
Casing Pulled	1/11	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							RAPPAHANNOCK RIVER
5.0	Fine to coarse poorly graded sand, trace silt and gravel, contains mica, shell and leaf fragments, wet - brown	SP	48.0	A	5	REC=28%	10.4	ALLUVIUM
10.0	Core terminated at 10.0 ft		43.0		10			Vibracore refusal at 10 ft.

Comments:
1.4 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-4 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/12/00 **Finished:** 1/12/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/12	--	--	--	--
Completion	1/12	--	--	--	--
Casing Pulled	1/12	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water				5 10			RAPPAHANNOCK RIVER
12.1 12.6	Fine to coarse poorly graded sand, trace silt and gravel, contains mica, shell and leaf fragments, wet - brown Core terminated at 12.6 ft	SP	40.9 40.4	A		REC=67%		ALLUVIUM Vibracore refusal at 12.6 ft.

Comments:
4 inch recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-5 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/12/00 **Finished:** 1/12/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/12	--	--	--	--
Completion	1/12	--	--	--	--
Casing Pulled	1/12	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water				5			RAPPAHANNOCK RIVER
7.7	Fine to coarse poorly graded sand, trace silt and gravel, contains mica and shell fragments, wet - brown	SP	45.3	A	10	REC=14%	11.8	ALLUVIUM
14.7	Core terminated at 14.7 ft		38.3					Vibracore refusal at 14.7 ft.

Comments:
1 foot recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-6 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/12/00 **Finished:** 1/12/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/12	--	--	--	--
Completion	1/12	--	--	--	--
Casing Pulled	1/12	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							
					5			RAPPAHANNOCK RIVER
					10			
14.7 15.0			38.3 38.0		15	REC=0%		ALLUVIUM
	Core terminated at 15 ft.							Vibracore refusal at 15 ft.

Comments:
No recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-7 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/12/00 **Finished:** 1/12/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/12	--	--	--	--
Completion	1/12	--	--	--	--
Casing Pulled	1/12	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							RAPPAHANNOCK RIVER
2.8	Fine to coarse poorly graded sand, trace silt and gravel, wet - brown	SP	50.2	A	5	REC=5%		ALLUVIUM
9.5	Core terminated at 9.5 ft		43.5					Vibracore refusal at 9.5 ft.

Comments:
4 inch recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-8 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/12/00 **Finished:** 1/12/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/12	--	--	--	--
Completion	1/12	--	--	--	--
Casing Pulled	1/12	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water				5 10			RAPPAHANNOCK RIVER
14.0	Silt, trace sand, contains clayey sand layers and organic matter, wet - gray	ML	38.4	B	15	REC=63%	37.4	ALLUVIUM
19.6	Fine to medium clayey sand, trace gravel, wet - brown	SC	33.4	A	20		25.3	
20.6	Core terminated at 20.6 ft		32.4					Vibracore refusal at 20.6 ft.

Comments:
3.8 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-9 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/13/00 **Finished:** 1/13/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/13	--	--	--	--
Completion	1/13	--	--	--	--
Casing Pulled	1/13	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							RAPPAHANNOCK RIVER
2.5	Fine to coarse poorly graded sand, trace silt and gravel, contains shell fragments, wet - brown	SP	50.5	A	5 10	REC=49%	5.1 11.7	ALLUVIUM
11.8	Core terminated at 11.8 ft		41.2					Vibracore refusal at 11.8 ft.

Comments:
4.6 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-10 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/13/00 **Finished:** 1/13/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/13	--	--	--	--
Completion	1/13	--	--	--	--
Casing Pulled	1/13	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water				5 10			RAPPAHANNOCK RIVER
12.4	Fine to coarse poorly graded sand, trace silt and gravel, contains organic matter and elastic silt lenses, wet - brown	SP	40.6	A		REC=38%		
13.4	Silt, trace sand, contains mica and organic matter, wet - brown	ML	39.6	B	15		53.1	ALLUVIUM
18.5	Core terminated at 18.5 ft		34.5					Vibracore refusal at 18.5 ft.

Comments:
2.3 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-11 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/12/00 **Finished:** 1/12/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/12	--	--	--	--
Completion	1/12	--	--	--	--
Casing Pulled	1/12	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							RAPPAHANNOCK RIVER
5.6	Fine to coarse poorly graded sand, trace silt and gravel, contains fat clay layers, organic matter and shell fragments, wet - brown and gray	SP	47.4	A	5 10	REC=28%	4.8	ALLUVIUM
13.6	Core terminated at 13.6 ft		39.4					Vibracore refusal at 13.6 ft.

Comments:
2.2 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-12 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/13/00 **Finished:** 1/13/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/13	--	--	--	--
Completion	1/13	--	--	--	--
Casing Pulled	1/13	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							RAPPAHANNOCK RIVER
5.2	Fine to coarse poorly graded sand, trace silt and gravel, contains shell fragments and organic matter, wet - brown	SP	47.8	A	5		6.1	ALLUVIUM
8.8	Elastic silt, trace sand and gravel, contains organic matter and silty sand layers, wet - brown	MH	44.2	B	10		59.8	
13.0	Silt, trace sand, contains mica, wet - brown	ML	40.0			REC=65%	51.9	
14.4	Core terminated at 14.4 ft		38.6					Vibracore refusal at 14.4 ft.

Comments:
6.0 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-13 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/13/00 **Finished:** 1/13/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/13	--	--	--	--
Completion	1/13	--	--	--	--
Casing Pulled	1/13	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water				5 10			RAPPAHANNOCK RIVER
12.2	Fine to coarse poorly graded sand, trace silt and gravel, wet - brown	SP	40.8	A				
13.2	Silt with sand, trace gravel, contains organic matter and silty sand lenses, wet - brown	ML	39.8		15	REC=41%		ALLUVIUM
	do, trace sand			B			49.9	
18.5	Core terminated at 18.5 ft		34.5				51.3	Vibracore refusal at 18.5 ft.

Comments:
2.6 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-14 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/12/00 **Finished:** 1/12/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/12	--	--	--	--
Completion	1/12	--	--	--	--
Casing Pulled	1/12	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							RAPPAHANNOCK RIVER
4.1	Fine to coarse poorly graded sand with gravel, trace silt, contains shell fragments and organic matter, wet - brown	SP	48.9	A	5	REC=47%	5.6	
7.1	Silt, trace sand and gravel, contains mica and organic matter, wet - brown	ML	45.9	B	10		48.2	ALLUVIUM
13.1	Core terminated at 13.1 ft		39.9					Vibracore refusal at 13.1 ft

Comments:
4.2 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-15 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/12/00 **Finished:** 1/12/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/12	--	--	--	--
Completion	1/12	--	--	--	--
Casing Pulled	1/12	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water				5			RAPPAHANNOCK RIVER
8.0	Fine to coarse poorly graded sand, trace silt and gravel, contains wood and shell fragments and elastic silt layers, wet - brown	SP	45.0	A	10	REC=21%	8.9	ALLUVIUM
14.7	Core terminated at 14.7 ft		38.3					Vibracore refusal at 14.7 ft.

Comments:
1.4 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-16 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/12/00 **Finished:** 1/12/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/12	--	--	--	--
Completion	1/12	--	--	--	--
Casing Pulled	1/12	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							RAPPAHANNOCK RIVER
					5			
6.4	Fine to coarse poorly graded sand with gravel, trace silt, contains shell fragments, organic matter and mica, wet - brown	SP	46.6	A		REC=56%		
8.4	Silt, trace sand, contains mica and organic matter, wet - brown	ML	44.6				10.9	ALLUVIUM
					10			
				B				
							52.4	
					15			
15.4	Core terminated at 15.4 ft		37.6					Vibracore refusal at 15.4 ft.

Comments:
5 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-17 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/13/00 **Finished:** 1/13/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/13	--	--	--	--
Completion	1/13	--	--	--	--
Casing Pulled	1/13	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							RAPPAHANNOCK RIVER
4.8	Fine to coarse poorly graded sand, trace silt and gravel, contains shell fragments, organic matter and silty sand layers, wet - brown and gray	SP	48.2	A	5 10	REC=46%	6.2 21.1	ALLUVIUM
14.2	Core terminated at 14.2 ft		38.8					Vibracore refusal at 14.2 ft.

Comments:
4.3 ft recovery of sample.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-18 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/13/00 **Finished:** 1/13/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/13	--	--	--	--
Completion	1/13	--	--	--	--
Casing Pulled	1/13	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							RAPPAHANNOCK RIVER
					5			
5.6	Fine to coarse poorly graded sand with silt and gravel, contains mica and organic matter, wet - brown	SP-SM	47.4	A		REC=100%		ALLUVIUM
6.6	Core terminated at 6.6 ft		46.4					

Comments:
1) 1 ft recovery of sample.
2) Vibracore terminated at 6.6 ft due to excessively high winds creating unstable platform and unsafe conditions.

SCHNABEL ENGINEERING ASSOCIATES CONSULTING GEOTECHNICAL ENGINEERS TEST BORING LOG	**Project:** Proposed Breaching of Embrey Dam Fredericksburg, Virginia	**Contract Number:** 993635 **Boring Number:** VC-19 **Sheet:** 1 of 1

Boring Contractor: Aqua-Survey
Flemington, New Jersey

Boring Foreman: J. Nickels

Drilling Method: Vibracoring

Drilling Equipment: 4" I.D. Vibracore

SEA Representative: D. Shaff

Dates Started: 1/13/00 **Finished:** 1/13/00

Location: See Location Plan, Figure A1

Ground Surface Elevation: 53.0±

Ground Water Observations

	Date	Time	Depth	Casing	Caved
Encountered	1/13	--	--	--	--
Completion	1/13	--	--	--	--
Casing Pulled	1/13	--	--	--	--

DEPTH (FT.)	STRATA DESCRIPTION	CLASS.	ELEV. (FT.)	STRATUM	SAMPLING DEPTH	SAMPLING DATA	W (%)	REMARKS
	Water							RAPPAHANNOCK RIVER
6.8 7.3	Fine to coarse poorly graded sand, trace silt and gravel, contains shell fragments and organic matter, wet - brown	SP ML	46.2 45.7	A	5	REC=52%	14.3	
	Silt, trace sand, contains mica, wet - brown			B	10 15		53.6	ALLUVIUM
16.5	Core terminated at 16.5 ft		36.5					Vibracore refusal at 16.5 ft.

Comments:
5 ft recovery of sample.

LEGEND

APPROXIMATE VIBRACORE LOCATION

COMPOSITE SAMPLE AREAS

Schnabel Engineering

PROPOSED **BREACHING** OF EMBREY DAM

FREDRICKSBURG, VIRGINIA

LOCATION PLAN

SCALE	DATE	
1"=400'	MARCH 2000	
DRAWN BY: CDT	CHECKED BY: ED	REVISED DATE
CONTRACT NO. 993635	FIGURE A1	REVISED DATE

SOIL LABORATORY TEST RESULTS

Summary of Soil Laboratory Tests (6)
Gradation Curves (8)
Raw Soil Laboratory Data

Appendix B
Contract 993635

SUMMARY OF SOIL LABORATORY TESTS

BORING	VC-3	VC-5	VC-8	VC-8
DEPTH	9'-10'	13.7'-14.7'	18.6'-19.6'	19.6'-20.6'
SAMPLE TYPE	3.5" TUBE	3.5" TUBE	3.5" TUBE	3.5" TUBE
STRATUM	A	A	B	A
SAMPLE DESCRIPTION	FINE TO COARSE POORLY GRADED SAND (SP), TRACE SILT AND GRAVEL, BROWN	FINE TO COARSE POORLY GRADED SAND (SP), TRACE SILT, CONTAINS SHELL FRAGMENTS, BROWN	SILT (ML), TRACE SAND, BROWN	FINE TO MEDIUM CLAYEY SAND (SC), BROWN
NATURAL MOISTURE CONTENT (%)	10.4	11.8	37.4	25.3
NATURAL WET DENSITY (pcf)	--	--	--	--
LIQUID LIMIT	NP	NP	39	38
PLASTIC LIMIT	NP	NP	27	20
PLASTICITY INDEX	NP	NP	12	18
GRADATION DATA				
(% FINER THAN SIEVE)				
¾"	100.0	100.0	100.0	100.0
NO. 4	97.7	96.3	100.0	100.0
NO. 40	4.5	4.8	94.6	64.1
NO. 200	1.2	0.5	86.9	34.3
MOISTURE DENSITY RELATION DATA (ASTM D-698)				
MAXIMUM DRY DENSITY (pcf)	--	--	--	--
OPTIMUM MOISTURE CONTENT (%)	--	--	--	--
CBR TEST DATA (VTM-8)				
BEFORE SOAK CBR	--	--	--	--
AFTER SOAK CBR	--	--	--	--
% SWELL	--	--	--	--
COMPACTED SAMPLE DRY DENSITY (pcf)	--	--	--	--
COMPACTED SAMPLE MOISTURE CONTENT (%)	--	--	--	--
REMARKS	SEE GRADATION CURVE	SEE GRADATION CURVE	SEE GRADATION CURVE	SEE GRADATION CURVE

NOTES: 1. Soil tests in accordance with applicable ASTM, AASHTO and VTM Standards

Appendix B
Contract 993635

SUMMARY OF SOIL LABORATORY TESTS

BORING	VC-9	VC-9	VC-10	VC-11
DEPTH	7.5'-8.5'	10.5'-11.5'	17.4'-18.4'	11.5'-12.6'
SAMPLE TYPE	3.5" TUBE	3.5" TUBE	3.5" TUBE	3.5" TUBE
STRATUM	A	A	B	A
SAMPLE DESCRIPTION	FINE TO COARSE POORLY GRADED SAND (SP), TRACE SILT, CONTAINS SHELL FRAGMENTS, BROWN	FINE TO COARSE POORLY GRADED SAND (SP), TRACE SILT AND GRAVEL, CONTAINS MICA, BROWN	SILT (ML), TRACE SAND, CONTAINS MICA, BROWN	FINE TO COARSE POORLY GRADED SAND (SP), TRACE SILT, CONTAINS MICA AND SHELL FRAGMENTS, BROWN
NATURAL MOISTURE CONTENT (%)	5.1	11.7	53.1	4.8
NATURAL WET DENSITY (pcf)	--	--	--	--
LIQUID LIMIT	NP	NP	40	NP
PLASTIC LIMIT	NP	NP	28	NP
PLASTICITY INDEX	NP	NP	12	NP
GRADATION DATA				
(% FINER THAN SIEVE)				
¾"	100.0	100.0	100.0	100.0
NO. 4	99.6	98.0	100.0	94.7
NO. 40	10.2	12.9	99.4	7.7
NO. 200	0.9	1.0	97.1	1.9
MOISTURE DENSITY RELATION DATA (ASTM D-698)				
MAXIMUM DRY DENSITY (pcf)	--	--	--	--
OPTIMUM MOISTURE CONTENT (%)	--	--	--	--
CBR TEST DATA (VTM-8)				
BEFORE SOAK CBR	--	--	--	--
AFTER SOAK CBR	--	--	--	--
% SWELL	--	--	--	--
COMPACTED SAMPLE DRY DENSITY (pcf)	--	--	--	--
COMPACTED SAMPLE MOISTURE CONTENT (%)	--	--	--	--
REMARKS	SEE GRADATION CURVE	SEE GRADATION CURVE	SEE GRADATION CURVE SPECIFIC GRAVITY (ASTM D-854) = 2.70	SEE GRADATION CURVE

NOTES: 1. Soil tests in accordance with applicable ASTM, AASHTO and VTM Standards

Appendix B
Contract 993635

SUMMARY OF SOIL LABORATORY TESTS

BORING	VC-12	VC-12	VC-12	VC-13
DEPTH	8.2'-8.8'	12.2'-13'	13.2'-14.2'	16.2'-17.2'
SAMPLE TYPE	3.5" TUBE	3.5" TUBE	3.5" TUBE	3.5" TUBE
STRATUM	A	B	B	B
SAMPLE DESCRIPTION	FINE TO COARSE POORLY GRADED SAND (SP), TRACE SILT, CONTAINS SHELL FRAGMENTS, BROWN	ELASTIC SILT (MH), TRACE SAND, CONTAINS MICA, BROWN	SILT (ML), TRACE SAND, CONTAINS MICA, BROWN	SILT (ML), TRACE SAND, CONTAINS MICA, BROWN
NATURAL MOISTURE CONTENT (%)	6.1	59.8	51.9	49.9
NATURAL WET DENSITY (pcf)	--	--	--	--
LIQUID LIMIT	NP	50	40	46
PLASTIC LIMIT	NP	35	30	29
PLASTICITY INDEX	NP	15	10	17
GRADATION DATA (% FINER THAN SIEVE)				
¾"	100.0	100.0	100.0	100.0
NO. 4	90.9	100.0	100.0	100.0
NO. 40	4.2	98.6	98.6	96.5
NO. 200	0.8	93.4	95.9	93.0
MOISTURE DENSITY RELATION DATA (ASTM D-698)				
MAXIMUM DRY DENSITY (pcf)	--	--	--	--
OPTIMUM MOISTURE CONTENT (%)	--	--	--	--
CBR TEST DATA (VTM-8)				
BEFORE SOAK CBR	--	--	--	--
AFTER SOAK CBR	--	--	--	--
% SWELL	--	--	--	--
COMPACTED SAMPLE DRY DENSITY (pcf)	--	--	--	--
COMPACTED SAMPLE MOISTURE CONTENT (%)	--	--	--	--
REMARKS	SEE GRADATION CURVE	SEE GRADATION CURVE	SEE GRADATION CURVE	SEE GRADATION CURVE

NOTES: 1. Soil tests in accordance with applicable ASTM, AASHTO and VTM Standards

Appendix B
Contract 993635

SUMMARY OF SOIL LABORATORY TESTS

BORING	VC-13	VC-14	VC-14	VC-15
DEPTH	17.2'-18.2'	5'-6'	12.1'-13.1'	13.5'-14.5'
SAMPLE TYPE	3.5" TUBE	3.5" TUBE	3.5" TUBE	3.5" TUBE
STRATUM	B	A	B	A
SAMPLE DESCRIPTION	SILT (ML), TRACE SAND, CONTAINS MICA, BROWN	FINE TO COARSE POORLY GRADED SAND WITH GRAVEL (SP), BROWN	SILT (ML), TRACE SAND, CONTAINS MICA, BROWN	FINE TO COARSE POORLY GRADED SAND (SP), TRACE GRAVEL, CONTAINS MICA, BROWN
NATURAL MOISTURE CONTENT (%)	51.3	5.6	48.2	8.9
NATURAL WET DENSITY (pcf)	--	--	--	--
LIQUID LIMIT	41	NP	42	NP
PLASTIC LIMIT	28	NP	29	NP
PLASTICITY INDEX	13	NP	13	NP
GRADATION DATA				
(% FINER THAN SIEVE)				
¾"	100.0	100.0	100.0	100.0
NO. 4	99.6	84.6	100.0	98.0
NO. 40	95.0	2.6	99.0	7.4
NO. 200	93.0	0.3	89.5	0.4
MOISTURE DENSITY RELATION DATA (ASTM D-698)				
MAXIMUM DRY DENSITY (pcf)	--	--	--	--
OPTIMUM MOISTURE CONTENT (%)	--	--	--	--
CBR TEST DATA (VTM-8)				
BEFORE SOAK CBR	--	--	--	--
AFTER SOAK CBR	--	--	--	--
% SWELL	--	--	--	--
COMPACTED SAMPLE DRY DENSITY (pcf)	--	--	--	--
COMPACTED SAMPLE MOISTURE CONTENT (%)	--	--	--	--
REMARKS	SEE GRADATION CURVE	SEE GRADATION CURVE	SEE GRADATION CURVE	SEE GRADATION CURVE

NOTES: 1. Soil tests in accordance with applicable ASTM, AASHTO and VTM Standards

Appendix B
Contract 993635

SUMMARY OF SOIL LABORATORY TESTS

BORING	VC-16	VC-16	VC-17	VC-17
DEPTH	7'-8'	14.4'-15.4'	10.3'-11.3'	12.3'-13.3'
SAMPLE TYPE	3.5" TUBE	3.5" TUBE	3.5" TUBE	3.5" TUBE
STRATUM	A	B	A	A
SAMPLE DESCRIPTION	FINE TO COARSE POORLY GRADED SAND WITH GRAVEL (SP), BROWN	SILT (ML), TRACE SAND, CONTAINS MICA, BROWN	FINE TO COARSE POORLY GRADED SAND (SP), TRACE SILT AND GRAVEL, CONTAINS MICA, BROWN	FINE TO COARSE POORLY GRADED SAND (SP), TRACE SILT AND GRAVEL, BROWN
NATURAL MOISTURE CONTENT (%)	10.9	52.4	6.2	21.1
NATURAL WET DENSITY (pcf)	--	--	--	--
LIQUID LIMIT PLASTIC LIMIT PLASTICITY INDEX	NP NP NP	48 33 15	NP NP NP	NP NP NP
GRADATION DATA				
(% FINER THAN SIEVE)				
¾" NO. 4 NO. 40 NO. 200	88.8 72.9 8.9 1.3	100.0 100.0 99.5 96.7	100.0 91.6 3.3 0.3	100.0 93.6 6.7 0.9
MOISTURE DENSITY RELATION DATA (ASTM D-698)				
MAXIMUM DRY DENSITY (pcf)	--	--	--	--
OPTIMUM MOISTURE CONTENT (%)	--	--	--	--
CBR TEST DATA (VTM-8)				
BEFORE SOAK CBR	--	--	--	--
AFTER SOAK CBR	--	--	--	--
% SWELL	--	--	--	--
COMPACTED SAMPLE DRY DENSITY (pcf)	--	--	--	--
COMPACTED SAMPLE MOISTURE CONTENT (%)	--	--	--	--
REMARKS	SEE GRADATION CURVE	SEE GRADATION CURVE	SEE GRADATION CURVE	SEE GRADATION CURVE

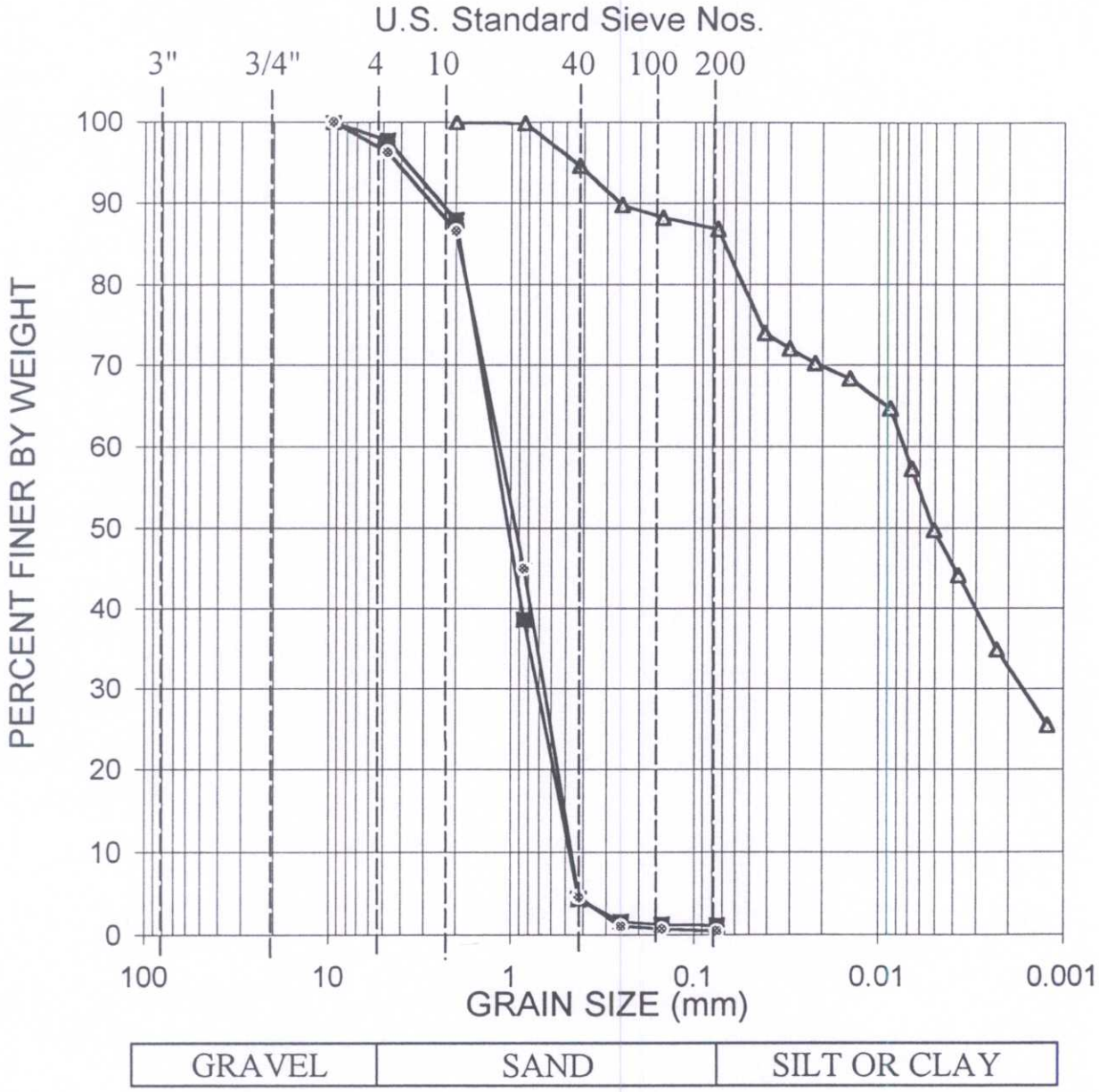
NOTES: 1. Soil tests in accordance with applicable ASTM, AASHTO and VTM Standards

Appendix B
Contract 993635

SUMMARY OF SOIL LABORATORY TESTS

BORING	VC-19	VC-19		
DEPTH	6.8'-7.3'	15.3'-16.3'		
SAMPLE TYPE	3.5" TUBE	3.5" TUBE		
STRATUM	A	B		
SAMPLE DESCRIPTION	FINE TO COARSE POORLY GRADED SAND (SP), TRACE SILT AND GRAVEL, BROWN	SILT (ML), TRACE SAND, CONTAINS MICA, BROWN		
NATURAL MOISTURE CONTENT (%)	14.3	53.6		
NATURAL WET DENSITY (pcf)	--	--		
LIQUID LIMIT **PLASTIC LIMIT** **PLASTICITY INDEX**	NP NP NP	36 29 7		
GRADATION DATA				
(% FINER THAN SIEVE)				
¾"	100.0	100.0		
NO. 4	89.7	100.0		
NO. 40	8.6	99.8		
NO. 200	0.3	99.3		
MOISTURE DENSITY RELATION DATA (ASTM D-698)				
MAXIMUM DRY DENSITY (pcf)	--	--		
OPTIMUM MOISTURE CONTENT (%)	--	--		
CBR TEST DATA (VTM-8)				
BEFORE SOAK CBR	--	--		
AFTER SOAK CBR	--	--		
% SWELL	--	--		
COMPACTED SAMPLE DRY DENSITY (pcf)	--	--		
COMPACTED SAMPLE MOISTURE CONTENT (%)	--	--		
REMARKS	SEE GRADATION CURVE	SEE GRADATION CURVE SPECIFIC GRAVITY (ASTM D-854) = 2.68		

NOTES: 1. Soil tests in accordance with applicable ASTM, AASHTO and VTM Standards



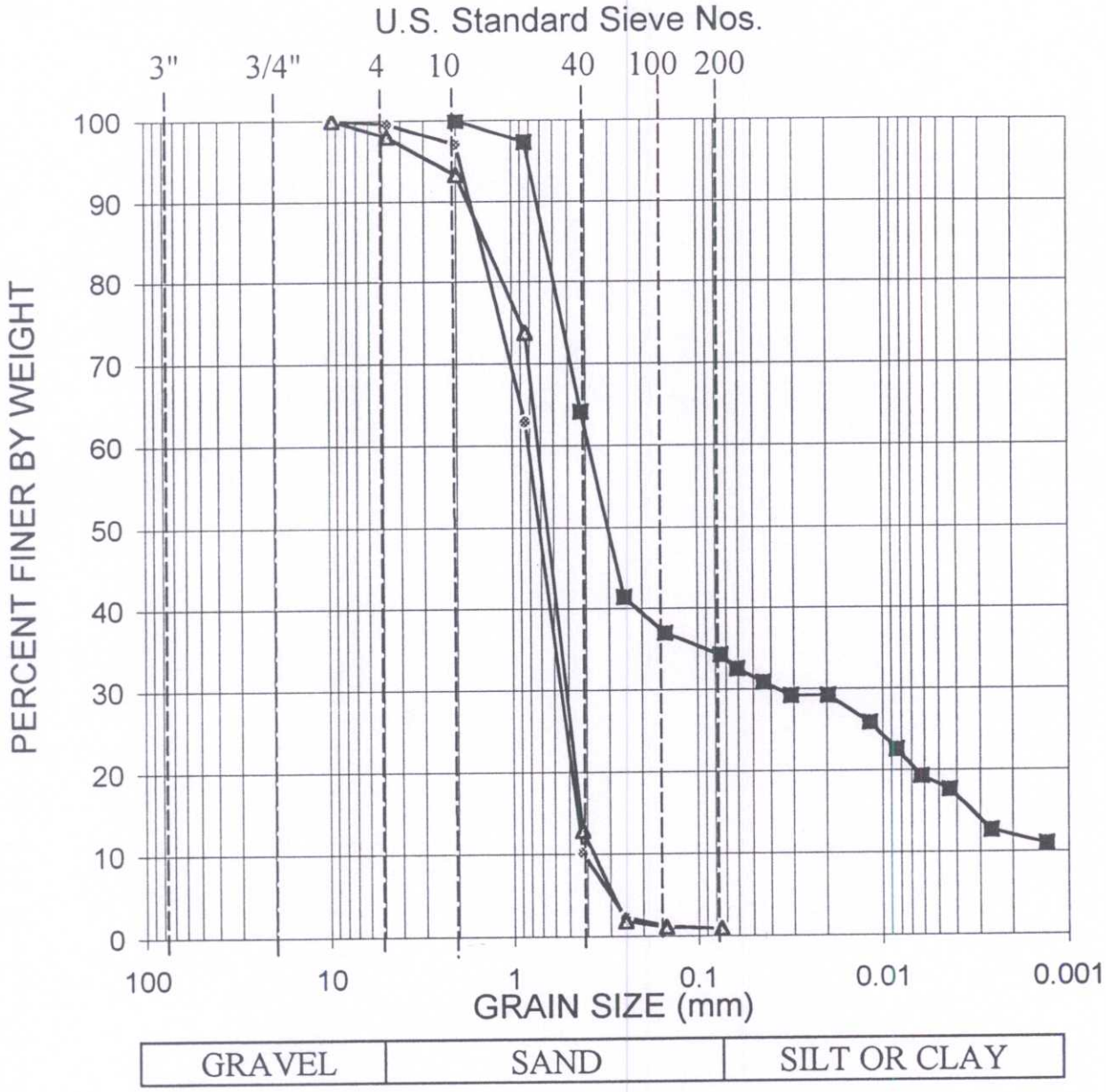
Key	Sample	Depth(ft.)	Sample Description	Class.	LL	PI
■	VC-3	9'-10'	FINE TO COARSE POORLY GRADED SAND, TRACE SILT AND GRAVEL, BROWN	SP	NP	NP
●	VC-5	13.7'-14.7'	FINE TO COARSE POORLY GRADED SAND, TRACE SILT, CONTAINS SHELL FRAGMENTS, BROWN	SP	NP	NP
▲	VC-8	18.6'-19.6'	SILT, TRACE SAND, BROWN	ML	39	12

Schnabel Engineering

GRADATION CURVES

Project: Embrey Dam, Fredericksburg, Virginia

Contract No. 993635



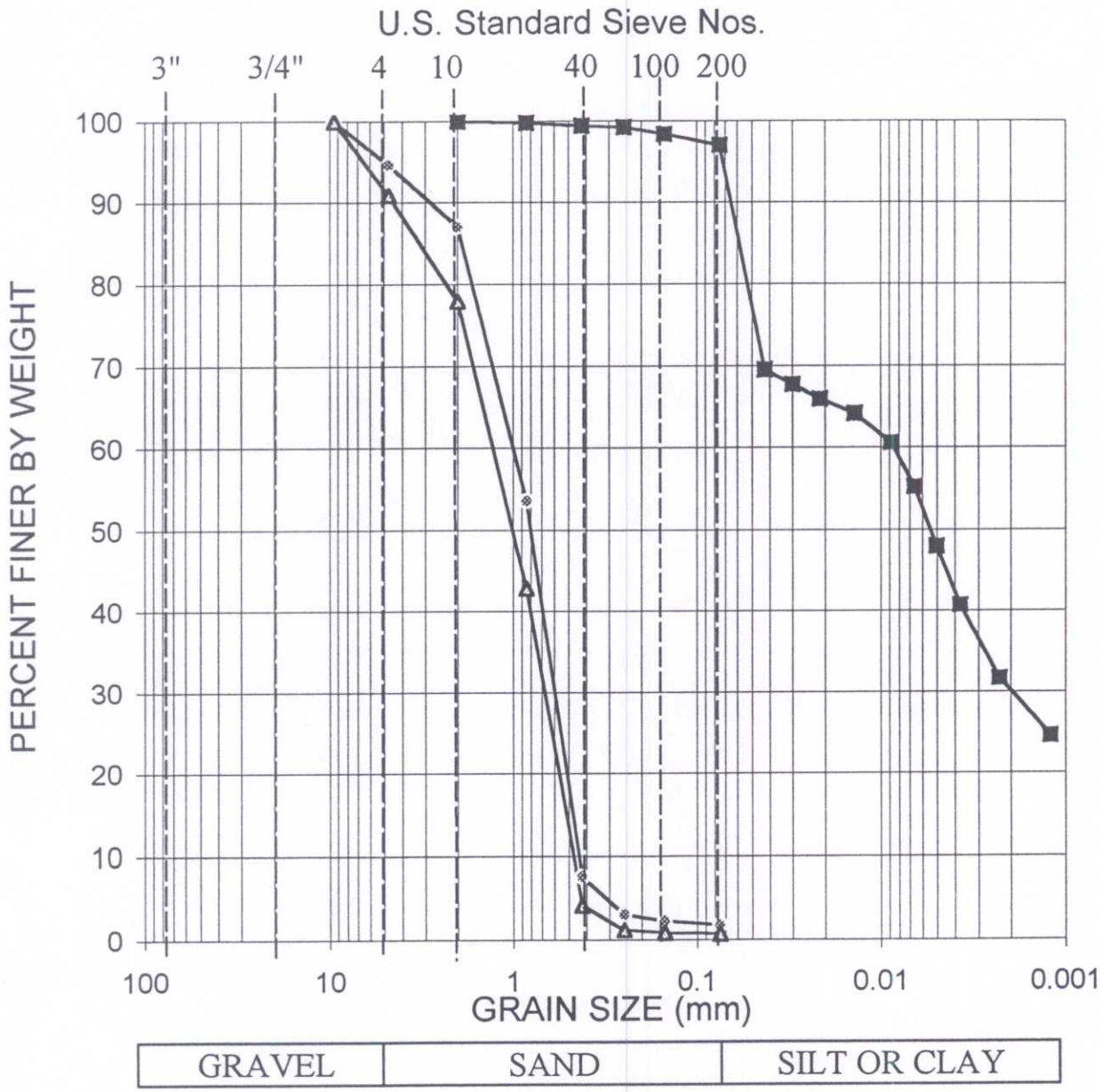
Key	Sample	Depth(ft.)	Sample Description	Class.	LL	PI
■	VC-8	19.6'-20.6'	FINE TO MEDIUM CLAYEY SAND, BROWN	SC	38	18
○	VC-9	7.5'-8.5'	FINE TO COARSE POORLY GRADED SAND, TRACE SILT, CONTAINS SHELL FRAGMENTS, BROWN	SP	NP	NP
▲	VC-9	10.5'-11.5'	FINE TO COARSE POORLY GRADED SAND, TRACE SILT AND GRAVEL, BROWN	SP	NP	NP

Schnabel Engineering

GRADATION CURVES

Project: Embrey Dam, Fredericksburg, Virginia

Contract No. 993635



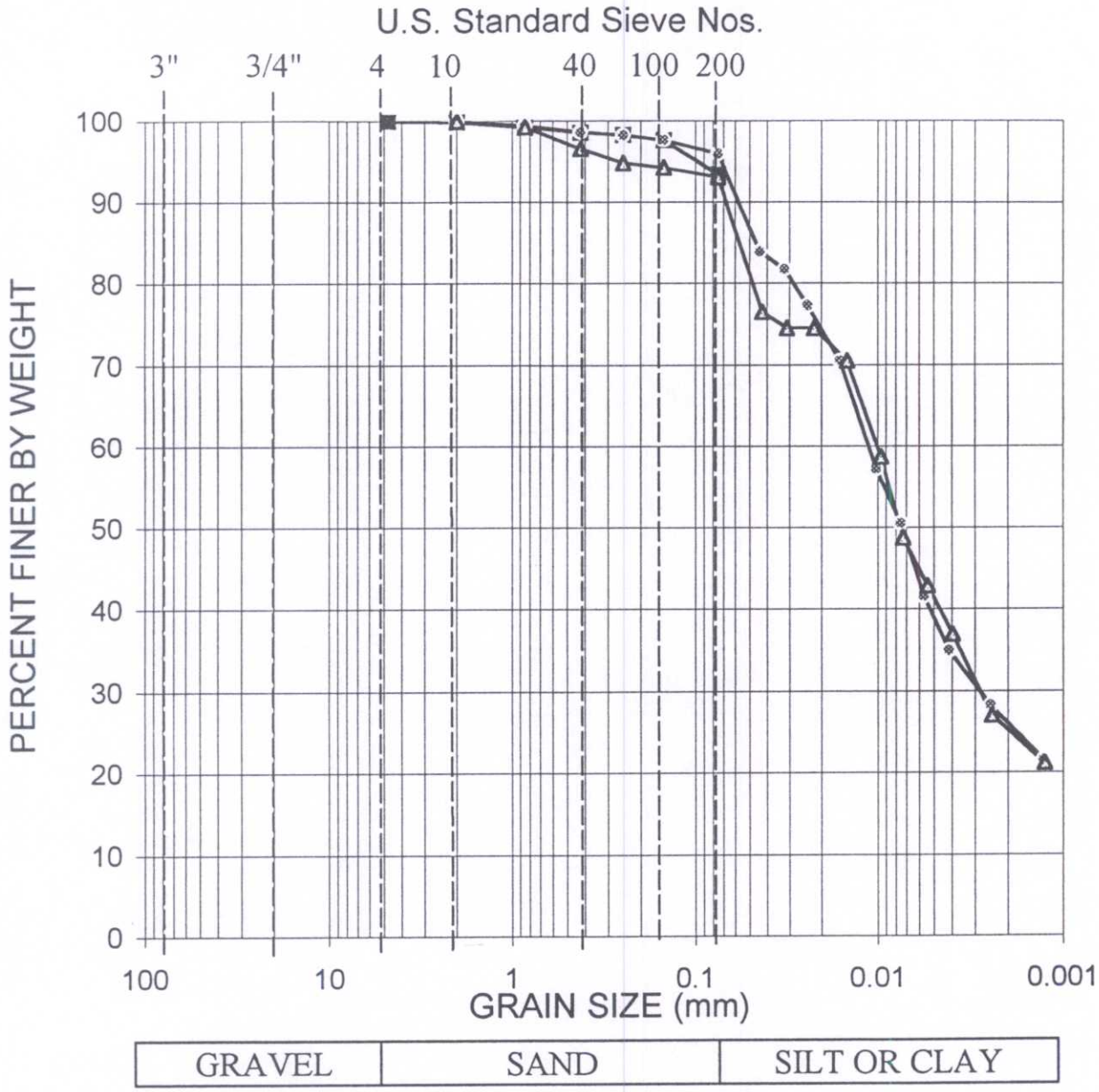
Key	Sample	Depth(ft.)	Sample Description	Class.	LL	PI
■	VC-10	17.4'-18.4'	SILT, TRACE SAND, CONTAINS MICA, BROWN	ML	40	12
○	VC-11	11.6'-12.6'	FINE TO COARSE POORLY GRADED SAND, TRACE SILT, CONTAINS MICA, BROWN	SP	NP	NP
▲	VC-12	8.2'-8.8'	FINE TO COARSE POORLY GRADED SAND, TRACE SILT, CONTAINS SHELL FRAGMENTS, BROWN	SP	NP	NP

Schnabel Engineering

GRADATION CURVES

Project: Embrey Dam, Fredericksburg, Virginia

Contract No. 993635



Key	Sample	Depth(ft.)	Sample Description	Class.	LL	PI
■	VC-12	12.2'-13'	ELASTIC SILT, TRACE SAND, CONTAINS MICA, BROWN	MH	50	15
○	VC-12	13.2'-14.2'	SILT, TRACE SAND, CONTAINS MICA, BROWN	ML	40	10
▲	VC-13	16.2'-17.2'	SILT, TRACE SAND, CONTAINS MICA, BROWN	ML	46	17

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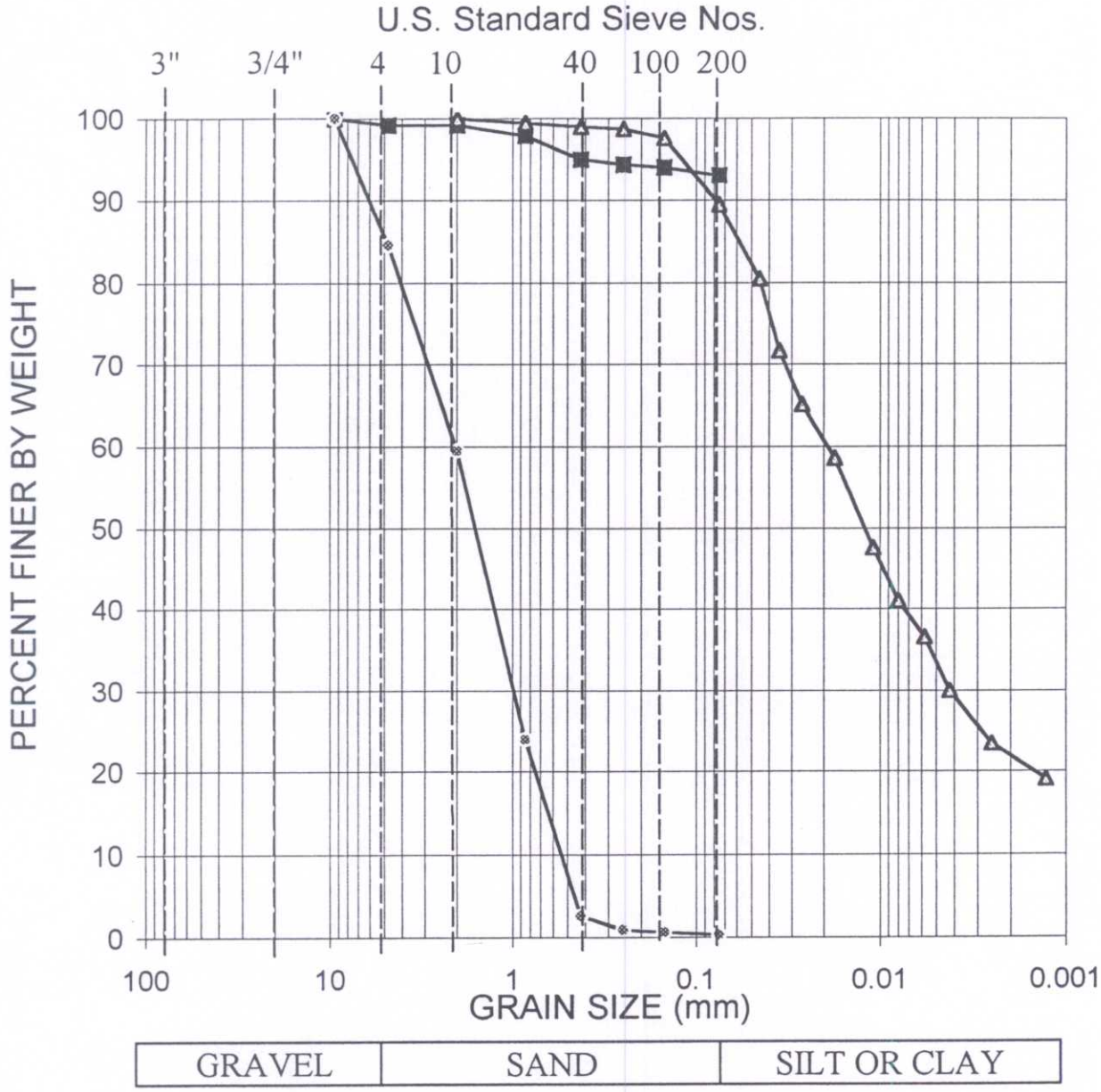
GRADATION CURVES

Project: Embrey Dam, Fredericksburg, Virginia

Contract No. 993635



Key	Sample	Depth(ft.)	Sample Description	Class.	LL	PI
■	VC-13	17.2'-18.2'	SILT, TRACE SAND AND GRAVEL, CONTAINS MICA, BROWN	ML	41	13
●	VC-14	5'-6'	FINE TO COARSE POORLY GRADED SAND WITH GRAVEL, BROWN	SP	NP	NP
▲	VC-14	12.1'-13.1'	SILT, TRACE SAND, CONTAINS MICA, BROWN	ML	42	13

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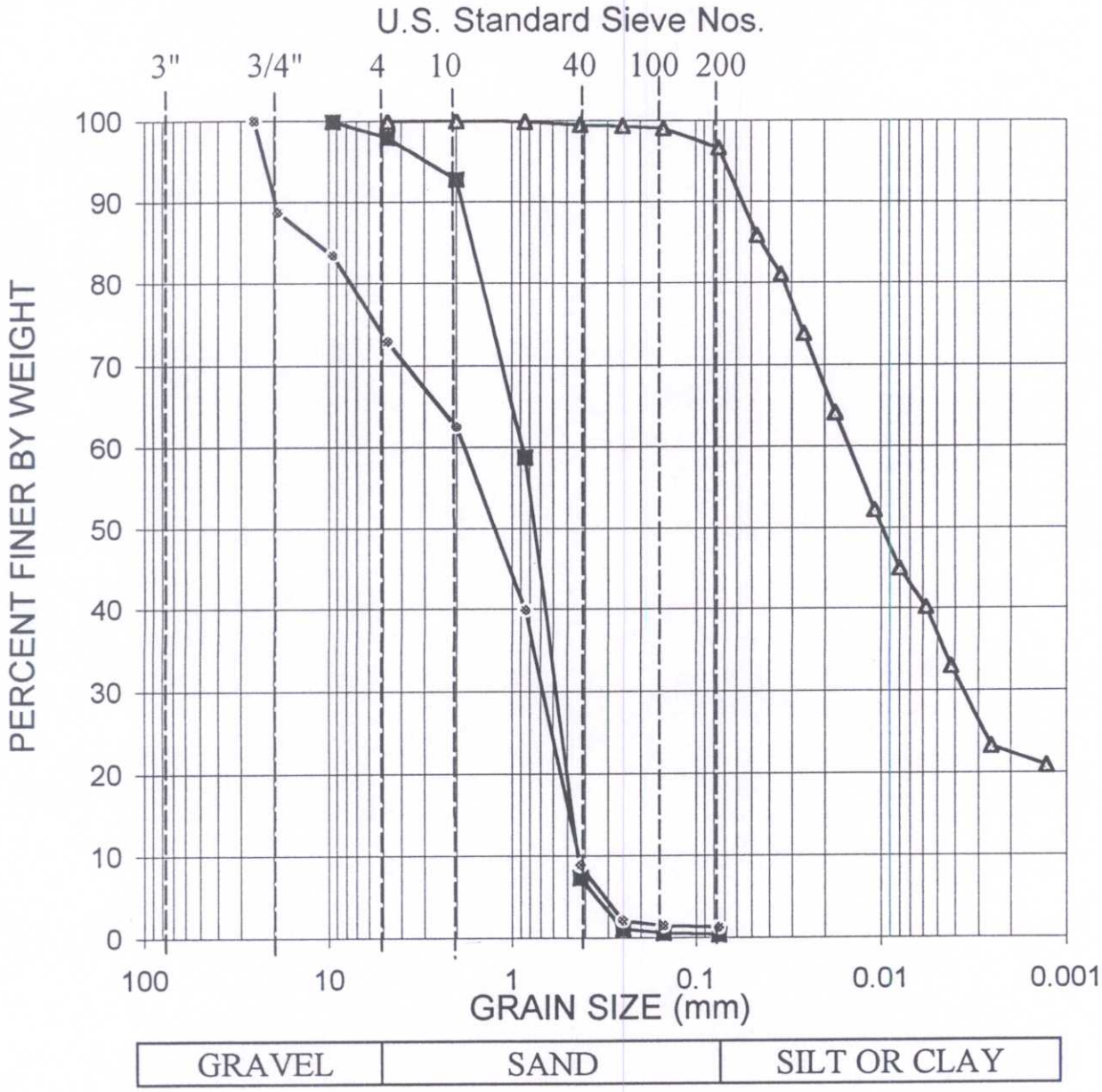
GRADATION CURVES

Project: Embrey Dam, Fredericksburg, Virginia

Contract No. 993635



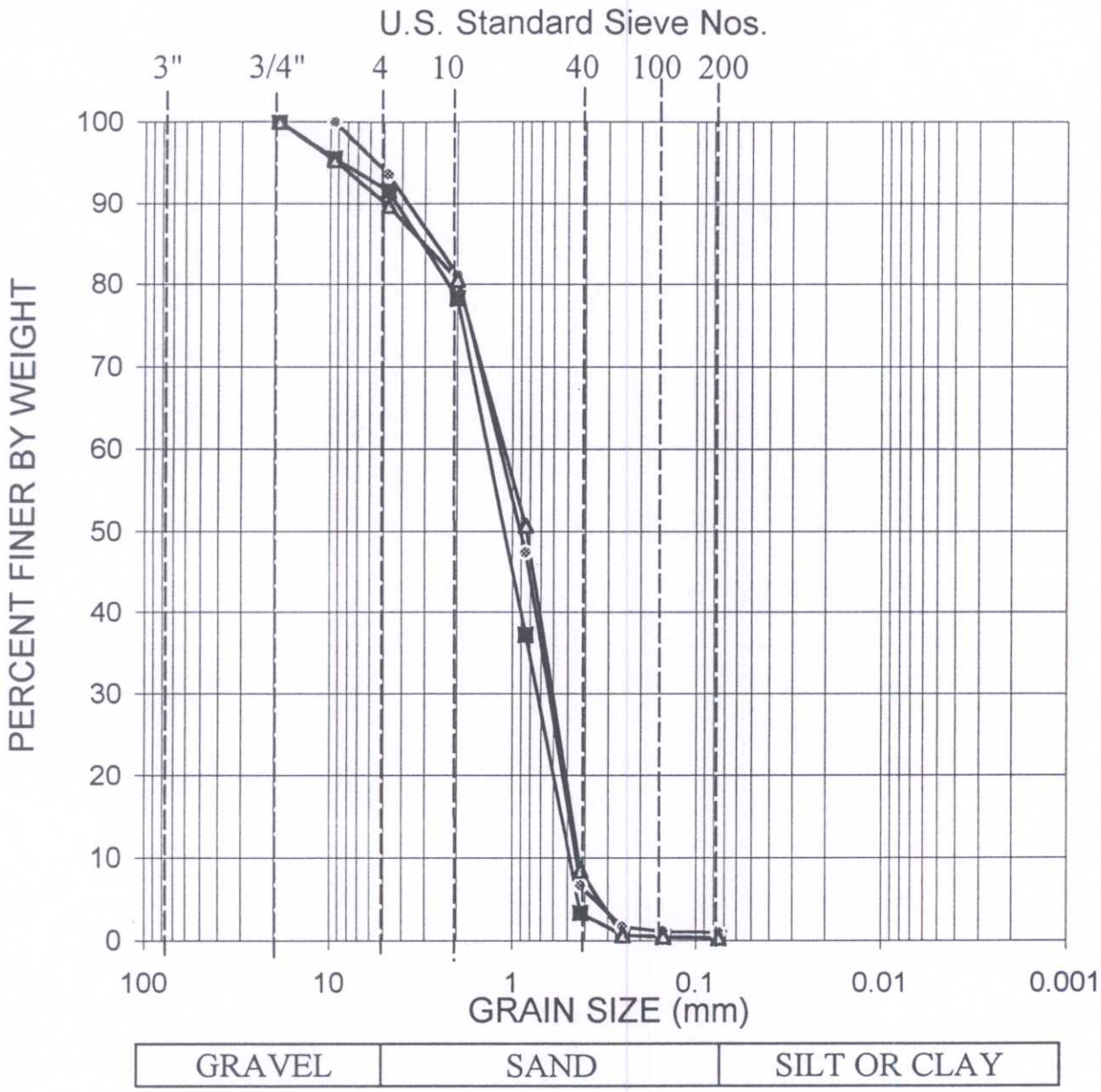
Key	Sample	Depth(ft.)	Sample Description	Class.	LL	PI
■	VC-15	13.5'-14.5'	FINE TO COARSE POORLY GRADED SAND, TRACE GRAVEL, CONTAINS MICA, BROWN	SP	NP	NP
○	VC-16	7'-8'	FINE TO COARSE POORLY GRADED SAND WITH GRAVEL, BROWN	SP	NP	NP
▲	VC-16	14.4'-15.4'	SILT, TRACE SAND, CONTAINS MICA, BROWN	ML	48	15

Schnabel Engineering

GRADATION CURVES

Project: Embrey Dam, Fredericksburg, Virginia

Contract No. 993635



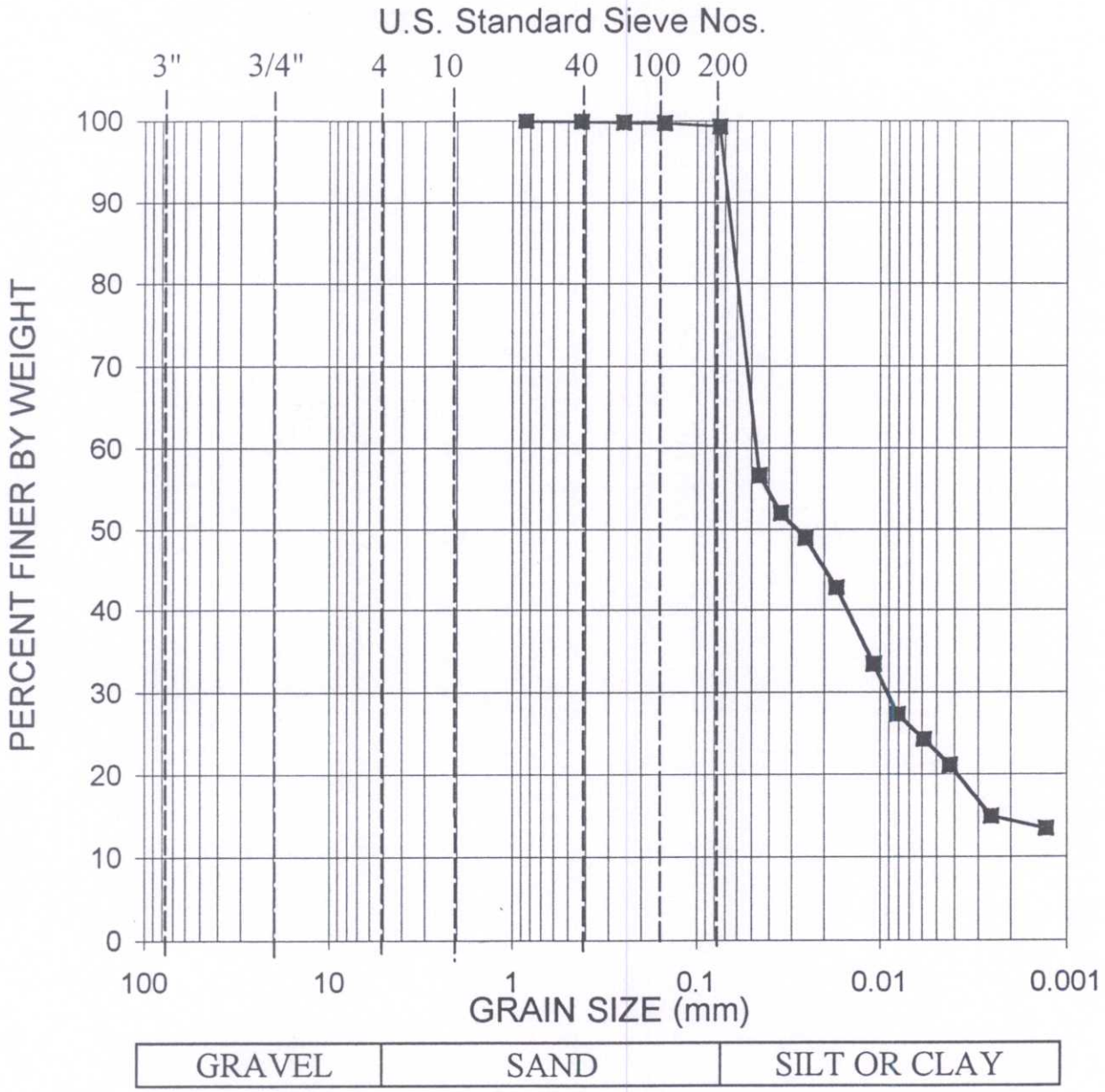
Key	Sample	Depth(ft.)	Sample Description	Class.	LL	PI
■	VC-17	10.3'-11.3'	FINE TO COARSE POORLY GRADED SAND, TRACE SILT AND GRAVEL, CONTAINS MICA, BROWN	SP	NP	NP
○	VC-17	12.3'-13.3'	FINE TO COARSE POORLY GRADED SAND, TRACE SILT AND GRAVEL, BROWN	SP	NP	NP
▲	VC-19	6.8'-7.3'	FINE TO COARSE POORLY GRADED SAND, TRACE SILT AND GRAVEL, BROWN	SP	NP	NP

Schnabel Engineering

GRADATION CURVES

Project: Embrey Dam, Fredericksburg, Virginia

Contract No. 993635



Key	Sample	Depth(ft.)	Sample Description	Class.	LL	PI
■	VC-19	15.3'-16.3'	SILT, TRACE SAND, CONTAINS MICA, BROWN	ML	36	7

Schnabel Engineering

GRADATION CURVES

Project: Embrey Dam, Fredericksburg, Virginia

Contract No. 993635

Probing Logs – Rappahannock River

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0200-01
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	15.6
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
47.4	4.6					
			Coarse Sand			
45.6	6.4					
			Clayish Sand No Rock Pushed by hand to 6.4 feet, then pumped.			
36.4	15.6					

4. HOLE NO. (As shown on drawing title and file number)	0200-02
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	18.5
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.5	6.5					
			Sandy/Coarse Then rock @ 18.5' Pushed by hand to 9.9 feet, then pumped.			
33.5	18.5					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0200-03
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	10.4
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
47.6	4.4					
			Packed Sand Then hard gravel or stone, could not penetrate below 10.4' Pushed by hand to 4.6 feet, then pumped.			
41.6	10.4					

4. HOLE NO. (As shown on drawing title and file number)	0200-04
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	14.3
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
46.1	5.9					
			Somewhat easy sand (silt)			
39.7	12.3					
			Very Packed Sand or clay No Rock, could not penetrate below 14.3' Pushed by hand to 12.3 feet, then pumped.			
37.7	14.3					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0200-05
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	14.1
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.9	6.1					
			Easy/Soft Silty			
42.4	9.6					
			Sandy Then very hard gravel or sand, could not penetrate below 14.1' Pushed by hand to 12.1 feet, then pumped.			
37.9	14.1					

4. HOLE NO. (As shown on drawing title and file number)	0200-06
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	18.0
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.9	6.1					
			Soft Sand			
38.8	13.2					
			Sand, Clay & Gravel Very difficult to push, could not penetrate below 18' No Rock Pushed by hand to 13.2 feet, then pumped.			
34.0	18.0					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0200-07
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	19.9
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
46.0	6.0		Sand with Clay Then very hard Pushed by hand to 10.6 feet, then pumped.			
32.1	19.9					

4. HOLE NO. (As shown on drawing title and file number)	0200-08
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	12.5
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
46.2	5.8		Sandy / Silty Then felt like rock @ 12.5' Pushed by hand to 9.9 feet, then pumped.			
39.5	12.5					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0200-09
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	12.7
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.6	6.4					
45.0	7.0		Silt			
			Clay, sand, and some gravel			
40.6	11.4					
39.3	12.7		Gravel, could not penetrate below 12.7' Pushed by hand to 11.4 feet, then pumped.			

4. HOLE NO. (As shown on drawing title and file number)	0200-10
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	20.0
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.2	6.8					
44.6	7.4		Silt			
			Clayish Sand			
39.3	12.7					
			Sand Then Rock @20' Pushed by hand to 12.7 feet, then pumped.			
32.0	20.0					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0200-11
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	20.5
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
43.9	8.1					
43.4	8.6		Silt			
			Coarse Sand			
39.3	12.7					
			Sand/Silty Clayish/Organics No Rock Pushed by hand to 12.7 feet, then pumped.			
31.5	20.5					

4. HOLE NO. (As shown on drawing title and file number)	0200-12
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	20.5
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
43.0	9.0					
			Coarse Sand			
40.0	12.0					
			Clayish Sand No Rock Pushed by hand to 12.0 feet, then pumped.			
31.5	20.5					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0200-13
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	21.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
42.6	9.4					
42.3	9.7		Silt			
			Clayish Sand No Rock Pushed by hand to 17.5 feet, then pumped.			
31.0	21.0					

4. HOLE NO. (As shown on drawing title and file number)	0700-01
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	11.2
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
47.9	4.1					
			Loose Sand			
42.6	9.4					
			Coarse Sand Then could not penetrate below 11.2' Pushed by hand to 9.4 feet, then pumped.			
40.8	11.2					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0700-02
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	14.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.4	6.6					
45.2	6.8		Silty Easy Coarse Silty Clayish Sand Then very hard, could not penetrate below 14.0' Pushed by hand to 13.1 feet, then pumped.			
38.0	14.0					

4. HOLE NO. (As shown on drawing title and file number)	0700-03
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	15.0
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
46.8	5.2					
46.3	5.7		Silty Sand Coarse sand and Gravel Then very hard @15', could not penetrate below 15.0' Pushed by hand to 9.6 feet, then pumped.			
37.0	15.0					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0700-04
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	13.6
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
47.6	4.4					
46.9	5.1		Silty Sand			
			Sand / Fairly Easy			
41.7	10.3					
			Coarse Sand Could not penetrate below 13.6' Pushed by hand to 10.3 feet, then pumped.			
38.4	13.6					

4. HOLE NO. (As shown on drawing title and file number)	0700-05
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.9
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
47.8	4.2					
47.3	4.7		Silty Sand			
			Sandy			
44.6	7.4					
			Coarse Sand Then very hard, could not penetrate below 16.9' Pushed by hand to 7.4 feet, then pumped.			
35.1	16.9					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0700-06
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	20.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
47.0	5.0					
46.4	5.6		Silty Sand Coarse Sand			
41.6	10.4		Hard Sand with Clay No Rock Pushed by hand to 10.4 feet, then pumped.			
32.0	20.0					

4. HOLE NO. (As shown on drawing title and file number)	0700-07
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	20.5
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.5	6.5					
45.3	6.7		Silty Sand Sand / Fairly Easy			
40.5	11.5		Coarse Sand No Rock Pushed by hand to 11.5 feet, then pumped.			
31.5	20.5					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0700-08
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	20.3
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
44.5	7.5					
44.3	7.7		Silt / Sand Easy Coarse Sand			
37.6	14.4		Coarse Sand with Clay No Rock Pushed by hand to 14.4 feet, then pumped.			
31.7	20.3					

4. HOLE NO. (As shown on drawing title and file number)	0700-09
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	21.0
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
42.3	9.7					
42.2	9.8		Silty Sand Loose Sand			
35.9	16.1		Coarse Sand with Clay and Silt No Rock Pushed by hand to 16.1 feet, then pumped.			
31.0	21.0					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	0700-10
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	21.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
41.1	10.9					
			Easy Clayish Sand No Rock Pushed by hand to 18 feet, then pumped.			
31.0	21.0					

4. HOLE NO. (As shown on drawing title and file number)	0700-11
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	21.0
16. DATE HOLE	STARTED 5 June 01; COMPLETED 5 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
40.4	11.6					
39.4	12.6		Silty Clay			
			Silty Sand with Clay No Rock Pushed by hand to 18.7 feet, then pumped.			
31.0	21.0					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	1200-01
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	13.3
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
44.5	7.5					
44.1	7.9		Silty Sandy / Silty Clayish			
41.1	10.9		Sandy Then Rock @ 13.3' Pushed by hand to 10.9 feet, then pumped.			
38.7	13.3					

4. HOLE NO. (As shown on drawing title and file number)	1200-02
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	19.2
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
46.2	5.8					
46.0	6.0		Silty Sandy			
41.9	10.1		Coarse Sandy with Clayish No Rock Pushed by hand to 10.1 feet, then pumped.			
32.8	19.2					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	1200-03
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.6
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			water			
48.0	4.0					
			Easy Sand			
40.4	11.6					
			Coarse Sand No Rock Pushed by hand to 11.6 feet, then pumped.			
35.4	16.6					

4. HOLE NO. (As shown on drawing title and file number)	1200-04
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	13.9
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
49.9	2.1					
49.8	2.2		Silt Sandy, Silty, Clayish			
44.5	7.5					
			Coarse Sand			
40.3	11.7					
			Gravel Then could not penetrate below 13.9' Pushed by hand to 7.4 feet, then pumped.			
38.1	13.9					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	1200-05
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	14.3
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
49.6	2.4		Sandy			
45.5	6.5		Coarse Clayish Sand Then Rock @ 14.3' Pushed by hand to 6.5 feet, then pumped.			
37.7	14.3					

4. HOLE NO. (As shown on drawing title and file number)	1200-06
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.9
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
48.4	3.6					
48.2	3.8		Silty Clayey Sand and Small Gravel Then Rock @ 16.9' Pushed by hand to 10.2 feet, then pumped.			
35.1	16.9					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	1200-07
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	17.6
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.7	6.3					
45.5	6.5		Silty Sand and clay Then Rock @ 17.6' Pushed by hand to 13.7 feet, then pumped.			
34.4	17.6					

4. HOLE NO. (As shown on drawing title and file number)	1200-08
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.2
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
42.1	9.9					
			Sandy / clayey Then Rock @ 16.2' Pushed by hand to 15.5 feet, then pumped.			
35.8	16.2					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	1200-09
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	17.4
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
41.0	11.0					
39.8	12.2		Silty			
			Easy Penetration -- Sandy / Silty			
36.3	15.7					
34.6	17.4		Sandy / Clayey Then hard, could not penetrate below 17.4' Pushed by hand to 15.7 feet, then pumped.			

4. HOLE NO. (As shown on drawing title and file number)	1200-10
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.8
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
39.9	12.1					
38.7	13.3		Silty			
			Sandy / Clayey Then Rock @ 16.8' Pushed by hand to 16.8 feet, then pumped.			
35.2	16.8					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	1700-01
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	13.3
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
46.4	5.6					
46.2	5.8		Silt			
45.0	7.0		Sandy / Silty Clay with Coarse Sand Then, could not penetrate below 13.3' Pushed by hand to 7.0 feet, then pumped.			
38.7	13.3					

4. HOLE NO. (As shown on drawing title and file number)	1700-02
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	12.6
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
47.0	5.0		Coarse Sand			
43.4	8.6		Coarse Sand, then Clay, then Gravel Then rock or gravel, could not penetrate below 12.6' Pushed by hand to 8.6 feet, then pumped.			
39.4	12.6					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	1700-03
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	10.6
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
47.9	4.1					
47.7	4.3		Silty Coarse Sand			
44.4	7.6		Sand, then clay with gravel Then hard, could not penetrate below 10.6' Pushed by hand to 7.6 feet, then pumped.			
41.4	10.6					

4. HOLE NO. (As shown on drawing title and file number)	1700-04
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	9.1
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
48.3	3.7		Sandy with silty clay			
44.9	7.1		Sandy / Clayey (Sand bar with gravel) Then very hard, could not penetrate below 9.1' Pushed by hand to 7.1 feet, then pumped.			
42.9	9.1					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	1700-05
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	10.8
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
48.9	3.1		Sandy / Clayey			
45.2	6.8		Coarse Sand			
43.2	8.8		Clay with Gravel Then clay with gravel, could not penetrate below 10.8'			
41.2	10.8					

4. HOLE NO. (As shown on drawing title and file number)	1700-06
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	8.5
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
48.8	3.2		Coarse Sand			
44.5	7.5		Coarse sand and gravel Then could not penetrate below 9.5' Pushed by hand to 7.5 feet, then pumped.			
42.5	9.5					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	1700-07
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	15.8
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.7	6.3					
45.6	6.4		Silty Sandy / Clayey Easy penetration			
40.0	12.0		Sandy, Silty, Clayey Then rock @ 15.8' Pushed by hand to 12.0 feet, then pumped.			
36.2	15.8					

4. HOLE NO. (As shown on drawing title and file number)	1700-08
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	16.5
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
42.5	9.5					
41.9	10.1		Silty Silty / Sandy / Clayey Then could not penetrate below 16.5' Pushed by hand to 15.5 feet, then pumped.			
35.5	16.5					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	1700-09
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	14.2
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
39.6	12.4					
38.7	13.3		Silty			
37.8	14.2		Silty Sand Then Rock @ 14.2' Pushed by hand to 13.3 feet, then pumped.			

4. HOLE NO. (As shown on drawing title and file number)	1700-10
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	15.4
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
39.1	12.9					
38.4	13.6		Silty			
36.6	15.4		Silty / Sandy Then Rock @ 15.4' Pushed by hand to 13.6 feet, then pumped.			

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	2200-01
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	10.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
46.8	5.2					
46.7	5.3		Silty Sandy / Silty			
42.5	9.5					
42.0	10.0		Sandy Then Rock @ 10' Pushed by hand to 9.5 feet, then pumped.			

4. HOLE NO. (As shown on drawing title and file number)	2200-02
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	8.9
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
47.5	4.5					
			Coarse Sand			
45.5	6.5					
			Coarse sand / Clay Then Rock @ 8.9' Pushed by hand to 6.5 feet, then pumped.			
43.1	8.9					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	2200-03
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	12.7
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
46.9	5.1		Coarse Sand Then could not penetrate below 12.9' Pushed by hand to 9.6 feet, then pumped.			
39.3	12.7					

4. HOLE NO. (As shown on drawing title and file number)	2200-04
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	13.3
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
44.9	7.1		Coarse Sand Then Rock @ 13.3' Pushed by hand to 10.9 feet, then pumped.			
38.7	13.3					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	2200-05
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	18.9
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
39.6	12.4		Clayish Sand -- Easy Penetration			
34.3	17.7					
33.1	18.9		Sand Then Rock @ 18.9' Pushed by hand to 17.7 feet, then pumped.			

4. HOLE NO. (As shown on drawing title and file number)	2200-06
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	12.7
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
48.2	3.8					
48.1	3.9		Silty Clayish Sand -- Easy Penetration			
43.8	8.2		Sandy / Silty / Clayish Then Rock @ 12.7' Pushed by hand to 8.2 feet, then pumped.			
39.3	12.7					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	2200-07
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	14.8
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
37.4	14.6					
37.2	14.8		Then Rock @ 14.8' Pushed by hand to 14.8 feet, then pumped.			

4. HOLE NO. (As shown on drawing title and file number)	2200-08
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	14.0
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
38.8	13.2					
38.0	14.0		Silt Then Rock @ 14' Pushed by hand to 14.0 feet, then pumped.			

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	2200-09
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	12.1
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
40.5	11.5					
39.9	12.1		Silt Then Rock @ 12.1' Pushed by hand to 12.1 feet, then pumped.			

4. HOLE NO. (As shown on drawing title and file number)	2200-10
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	13.5
16. DATE HOLE	STARTED 20 June 01; COMPLETED 20 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
43.2	8.8					
42.3	9.7		Silt			
			Clayish Sand Then Rock @ 13.5' Pushed by hand to 13.5 feet, then pumped.			
38.5	13.5					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	2700-01
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	9.9
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.9	6.1					
			Coarse Sand Then Rock @ 9.9' Pushed by hand to 9.4 feet, then pumped.			
42.1	9.9					

4. HOLE NO. (As shown on drawing title and file number)	2700-02
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	10.9
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
47.6	4.4					
			Coarse Sand			
43.2	8.8					
			Coarse Sand / Some Clay Then hard, could not penetrate below 10.9' Pushed by hand to 8.8 feet, then pumped.			
41.1	10.9					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	2700-03
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	9.9
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.9	6.1					
45.8	6.2		Silt			
			Coarse Sand Then Rock @ 9.9' Pushed by hand to 8.8 feet, then pumped.			
42.1	9.9					

4. HOLE NO. (As shown on drawing title and file number)	2700-04
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	11.4
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
42.5	9.5					
			Coarse Sand Then Rock @ 11.4' Pushed by hand to 11.1 feet, then pumped.			
40.6	11.4					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	2700-05
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	11.1
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Rock @ 11.1'			
40.9	11.1					

4. HOLE NO. (As shown on drawing title and file number)	2700-06
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	11.0
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
41.2	10.8					
41.0	11.0		Silty Then Rock @ 11' Pushed by hand to 11.0 feet.			

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	2700-07
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	12.1
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
40.9	11.1					
39.9	12.1		Silt Then Rock @ 12.1' Pushed by hand to 12.1 feet.			

4. HOLE NO. (As shown on drawing title and file number)	2700-08
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	9.8
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
42.7	9.3					
42.2	9.8		Silt Then Rock @ 9.8' Pushed by Hand to 9.8 feet.			

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	3200-01
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	6.9
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
46.3	5.7					
			Coarse Sand and Pea Gravel Then could not penetrate below 6.9' Pushed by Hand to 6.9 feet.			
45.1	6.9					

4. HOLE NO. (As shown on drawing title and file number)	3200-02
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	8.7
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.7	6.3					
			Coarse Sand Then Rock @ 8.7' Pushed by hand to 8.4 feet, then pumped.			
43.3	8.7					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	3200-03
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	6.5
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water Then Rock @ 6.5'			
45.5	6.5					

4. HOLE NO. (As shown on drawing title and file number)	3200-04
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	6.3
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
46.2	5.8					
45.7	6.3		Coarse Sand Then Rock @ 6.3' Pushed by hand to 6.3 feet.			

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	3200-05
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	7.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water Then Rock @ 7.0'			
45.0	7.0					

4. HOLE NO. (As shown on drawing title and file number)	3200-06
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	7.2
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water			
45.2	6.8					
44.8	7.2		Coarse Sand Then Rock @ 7.2' Pushed by hand to 7.2 feet.			

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	3200-07
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	7.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water Then Rock @ 7.0'			
45.0	7.0					

4. HOLE NO. (As shown on drawing title and file number)	3200-08
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	9.9
16. DATE HOLE	STARTED 21 June 01; COMPLETED 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water Then Rock @ 9.9'			
42.1	9.9					

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Waterway Surveys & Engineering, Ltd.
4. HOLE NO. (As shown on drawing title and file number)	3200-09
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	7.2
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	Probing w/ 1" Dia Pipe
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED: 21 June 01; COMPLETED: 21 June 01
17. ELEVATION TOP OF HOLE	52.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Water Then Rock @ 7.2' Pushed by hand to 7.2 feet.			
44.8	7.2					

Placement Area Boring Logs and Soils Test Data

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam Proposed Placement Site
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Fishburne Drillnig, Inc
4. HOLE NO. (As shown on drawing title and file number)	B1
5. NAME OF DRILLER	Rollen A. Ross
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 6/28/01; COMPLETED 6/28/01
17. ELEVATION TOP OF HOLE	210.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Leonard Jones

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
209.5	0.5		Topsoil			
208.0	2.0		(SP) Fine to medium sand with fine gravel , dry, dark gray		1	15-18-22-19, N=40
206.5	3.5		(SP) Sand with fine gravel			
206.0	4.0		(SC) Silty Clayey fine sand, dry, light grayish brown		2	25-40-23-10, N=63
204.0	6.0		(CH) Clay, little silt, trace fine sand, hp, trace moist reddish brown		3	9-7-7-11, N=14
202.0	8.0		(SC) Clay, little silt, trace fine sand, hp, trace moist reddish brown		4	15-9-10-8, N=19
200.0	10.0		(SC) Fine sandy clay, hp, little moist, reddish brown LL=58 PL=29		5	15-9-10-8, N=19
196.0	14.0		(SC) Fine sandy clay, hp, little moist, reddish brown			
195.0	15.0		(SC) Fine sandy clay with gravel, hp, little moist, reddish brown		6	7-10-13-12, N=23
190.0	20.0		(SC) Fine to medium sand, little clay, trace gravel, hp, trace moist, reddish brown		7	13-6-6-5, N=12
186.0	24.0		(SC) Fine to medium sand, little clay, hp, no gravel, little moist, reddish brown			
185.0	25.0		(SM) Fine to medium sand, some silty clay, trace mica, mp, trace moisture, speckled gray, white, and red (weathered rock)		8	5-7-17-36, N=24

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam Proposed Placement Site
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Fishburne Drillnig, Inc
4. HOLE NO. (As shown on drawing title and file number)	B2
5. NAME OF DRILLER	Rollen A. Ross
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	19.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 6/28/01 COMPLETED 6/28/01
17. ELEVATION TOP OF HOLE	209.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Leonard Jones

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
208.5	0.5		topsoil and gravel			
			(SC) Clayey sand and gravel, dry, gray			
207.0	2.0				s-1	7-12-16-15, N=28
			(SC) Clayey sand and gravel, dry, gray			
205.0	4.0				s-2	17-22-20-12, N=42
			(CL) Lean clay with sand, trace moist, reddish brown LL=30 PL=13			
203.0	6.0				s-3a	16-9-12-9, N=21
202.5	6.5		(CL) Lean clay with sand, trace moist, reddish brown			
202.0	7.0		(CL) Lean clay with sand, trace moist, gray			
			(SC) Clayey sand and gravel, dry, gray			
201.0	8.0				s-3b	15-16-13-16, N=29
			(SC) Clayey sand and gravel, dry, gray			
199.0	10.0				s-4	12-6-9-9, N=15
			(SC) Clayey sand and gravel, dry, gray			
195.0	14.0					
194.0	15.0		(SC) Fine to medium sand, light clay, hp, reddish brown with gray and brown mottled, black cinders in tip		s-5	13-16-9-10, N=25
			(SC) Fine coarse sandy w/ so fine coarse gravely clay, hp, moist, reddish brown			
189.0	20.0				s-6	15-12-8-4, N=20
185.5	23.5		(SC) Fine coarse sandy w/ so fine coarse gravely clay, hp, moist, reddish brown			
185.0	24.0				s-7	12-50/2" (50 blows in 2 inches), N=50
			(SC) Fine to medium sand, so silty clay, mp, moist speckeled white, gray, brown, and black			

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam Proposed Placement Site
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Fishburne Drillnig, Inc
4. HOLE NO. (As shown on drawing title and file number)	B3
5. NAME OF DRILLER	Rollen A. Ross
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 6/28/01 COMPLETED 6/28/01
17. ELEVATION TOP OF HOLE	204.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Leonard Jones

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
202.0	2.0		(CL) Lean clay with sand and gravel, mp, little moist, brownish gray (rec - 1.0')		1	8-10-13-15, N=23
201.0	3.0		(SC) Sandy and gravely little silty clay, mp, little moist, brownish gray			
200.0	4.0		(SM) Silty fine sand, trace clay, lp, trace moisture, dark gray		2	10-9-9-6, N=18
199.0	5.0		(SM) Silty fine sand, trace clay, lp, trace moisture, dark gray LL=13 PL=11			
198.0	6.0		(SC) Fine clayey sand, mp, little moist, light gray-brown		3	6-5-4-6, N=9
196.0	8.0		(SC) Fine sand, little silty clay, hp, moist, gray-brown		4	5-6-7-5, N=13
194.0	10.0		(SC) Fine to medium sandy and gravely clay, hp, little moisture, reddish brown		5	11-15-16-17, N=31
189.0	15.0		(SC) Fine silty clayey sand, hp, little moisture, reddish brown		6	15-11-9-8, N=20
185.0	19.0		(SC) Fine silty clayey sand, hp, little moisture, reddish brown			
184.0	20.0		(SC) Fine silty sandy clay, hp, gravel, little moisture, light brown mottled		7	10-12-8-5, N=20
180.0	24.0		(SC) Fine sand, little silty clay, hp, little moist, light brown mottled			
179.0	25.0		(SC) Fine to medium silty clayey sand, mp, trace moisture, mottled white, tan, gray		8	12-16-19-17, N=35

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam Proposed Placement Site
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Fishburne Drillnig, Inc
4. HOLE NO. (As shown on drawing title and file number)	B4
5. NAME OF DRILLER	Rollen A. Ross
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 6/28/01 COMPLETED 6/28/01
17. ELEVATION TOP OF HOLE	206.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Leonard Jones

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
204.5	1.5		(GC) Fine gravel and Fine to Medium Sand, Little silty clay, grayish brown, dry			
204.0	2.0		(SC) Fine sand, some clay, hp, dry, reddish brown		1	4-9-11-13, N=20
202.0	4.0		(CH) Clay, little fine sand, hp, trace moisture, reddish brown/brown mottled LL=59 PL=31		2	12-16-11-19, N=27
200.0	6.0		(CH) Clay, little fine sand, hp, trace moisture, reddish brown/brown mottled		3	17-14-15-15, N=29
198.0	8.0		(CH) Clay, some fine sand, hp, trace moisture, reddish brown/brown mottled		4	12-14-21-22, N=35
197.5	8.5		(CH) Clay, some fine sand, hp, trace moisture, reddish brown/brown mottled			
196.0	10.0		(SC) Fine crushed sandy silty clay, hp, w/ fine gravel, trace moisture, light brown, white mottled			11-26-19-21, N=45
191.0	15.0		(SC) Fine crushed sandy silty clay, hp, w/ fine gravel, little moisture, light brown, white mottled		5	9-8-9-10, N=17
186.0	20.0		(SC) Fine crushed sandy silty clay, hp, w/ fine gravel, moist, light brown, white mottled		6	8-8-9-9, N=17
181.0	25.0		(SC) Fine to medium sand, little silty clay, hp, saturated mottled tan, red, brown (weathered rock)		7	7-10-11-14, N=21

DRILLING LOG

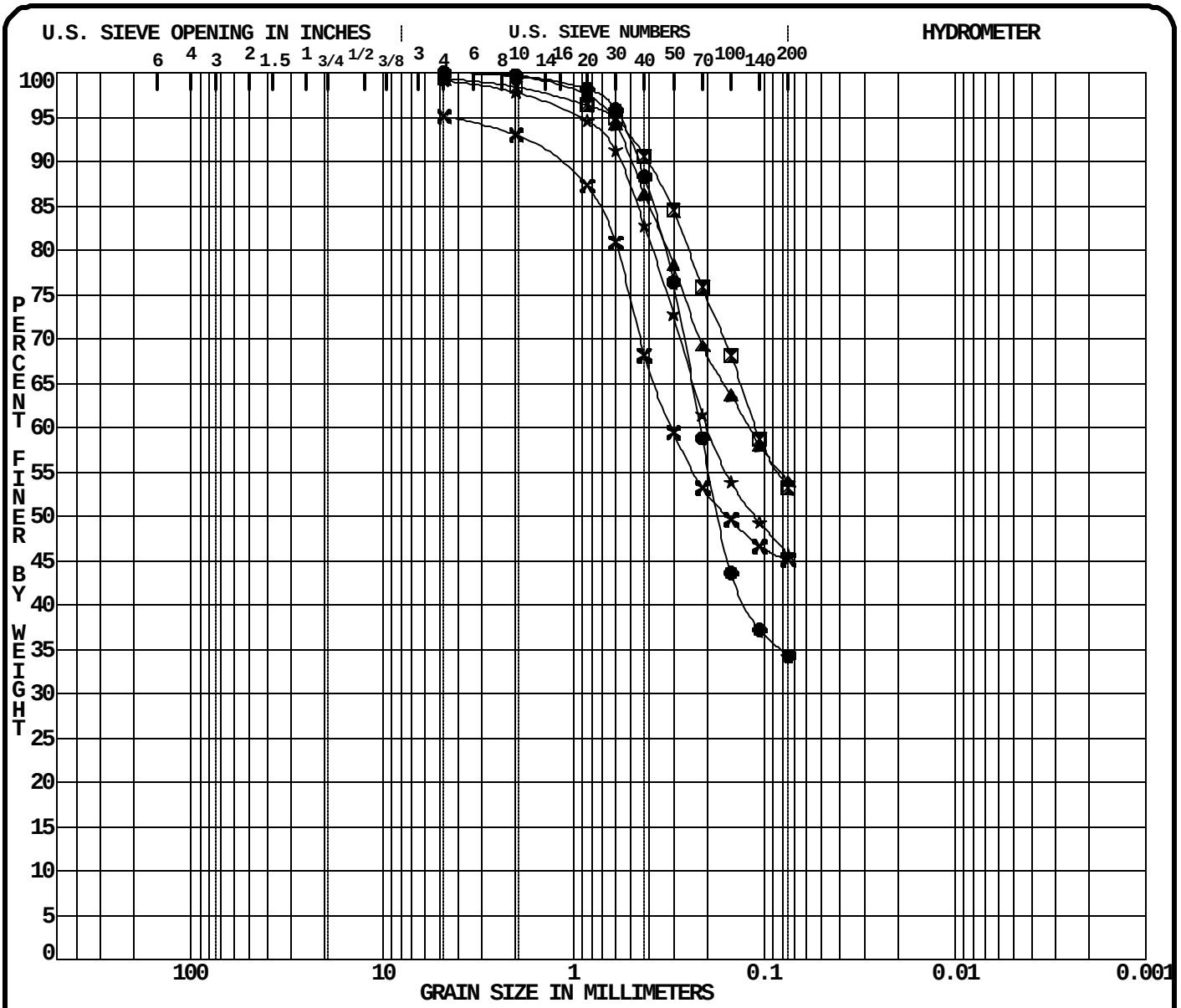
DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam Proposed Placement Site
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Fishburne Drillnig, Inc
4. HOLE NO. (As shown on drawing title and file number)	B5
5. NAME OF DRILLER	Rollen A. Ross
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 6/28/01 COMPLETED 6/28/01
17. ELEVATION TOP OF HOLE	200.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Leonard Jones

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
199.5	0.5		(GP) Fine to large gravel, dry, gray			
198.0	2.0		(SC) Fine sand, little clay, hp, dry, well compacted, mottled gray, brwon		1	14-26-20, N=
197.0	3.0		(SC) Fine sand, lit. fine gravel, little clay, hp, dry, well compacted, mottled, gray			
196.0	4.0		(CH) Clay, hp, w/ little clay, dry, well compacted, mottled gray, brwon		2	22-23-11-14, N=34
194.0	6.0		(SC) Fine sand, little clay, hp, dry, well compacted, mottled brwon, reddish brown		3	16-12-12-15, N=24
192.0	8.0		(SC) Fine sand, little clay, hp, dry, well compacted, little moisture, mottled brwon, reddish brown		4	13-14-18-21, N=32
190.0	10.0		(SC) Fine sand, trace fine gravel, little clay, hp, dry, well compacted, little moisture, mottled brown, reddish brown rec. 1.0'		5	18-12-13-15, N=25
185.5	14.5		(SC) Fine sand, some silty clay, hp, trace mica, moist, mottled, tan, brown gray			
185.0	15.0		(SC) Fine sand, some silty clay, hp, lit. mika, moist, mottled, brown, reddish brown		6	17-6-10-11, N=16
180.0	20.0		(SC) Fine sand, some silty clay, hp, lit. mika, moist, mottled brown, reddish brown		7	15-6-7-12, N=13
175.5	24.5		(SC) Fine sand, some silty clay, hp, lit. mika, moist, mottled, brown, reddish brown			
175.0	25.0		(SC) Fine to medium sand, some silty clay, hp, moist, speckeled white, tan gray, red, brown, black (weathered rock)		8	15-6-7-12, N=13

DRILLING LOG

DIVISION	NAD
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Embrey Dam Proposed Placement Site
2. LOCATION (Coordinates or Station)	Stafford County
3. DRILLING AGENCY	Fishburne Drillnig, Inc
4. HOLE NO. (As shown on drawing title and file number)	B6
5. NAME OF DRILLER	Rollen A. Ross
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	23.5
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NGVD '72 adj
12. MANUFACTURES'S DESIGNATION OF DRILL	CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 6/28/01 COMPLETED 6/28/01
17. ELEVATION TOP OF HOLE	198.0
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Leonard Jones

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			(GC) Fine gravel, little silty clay, dry, brown (rec. 0.8')			
196.0	2.0				1	12-11-9-9, N=20
195.0	3.0		(SC) Silty, fine to medium sand, little clay, trace fine gravel, mottled brown, reddish brown			
194.0	4.0		(SC) Fine crushed sandy silty clay, w/ little gravel, mp, gray		2	12-15-15-10, N=30
193.0	5.0		(SC) Fine crushed sandy silty clay with fine gravel, mp, reddish brown			
192.0	6.0		(SC) Fine crushed sandy silty clay with fine gravel, mp, gray		3	17-9-12-8, N=21
			(SC) Fine crushed sandy silty clay with fine gravel, mp, grayish brown			
190.0	8.0				4	10-7-4-5, N=11
			(SC) Fine crushed sandy silty clay with fine gravel, mp, grayish brown			
188.0	10.0				5	9-5-3-4, N=8
			(SC) Fine to medium silty sand, little fine gravel, little clay, mp, moist, gray			
183.0	15.0				6	7-2-2-2, N=4
179.0	19.0		(CH) Clay with fine sand, little fine gravel, hp, dark, gray/brown, moist			
178.5	19.5		(SC) Silty fine to medium sand, little clay, mp, moist, speckeled black & white		7	15-25 50/3", N=50
174.5	23.5		(SC) Very dense fine sand, little silty clay, mp, trace moisture, dark gray Note: Rock in spoon tip		8	50 blows in 5", N=50



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample ID	(depth)	Classification	MC%	LL	PL	PI	Cc	Cu
●	B1	(8.0)	CLAYEY SAND SC		58	29	29		
⊠	B2	(4.0)	SANDY LEAN CLAY CL		30	13	17		
▲	B3	(2.0)							
★	B3	(4.0)	SILTY SAND SM		13	11	2		
✖	B4	(6.0)							

	Sample ID	(depth)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B1	(8.0)	4.76	0.22			0.0	65.7	34.3	
⊠	B2	(4.0)	4.76	0.11			0.0	46.1	53.3	
▲	B3	(2.0)	4.76	0.12			0.0	46.0	54.0	
★	B3	(4.0)	4.76	0.20			0.0	53.4	45.7	
✖	B4	(6.0)	4.76	0.31			0.0	50.0	45.1	

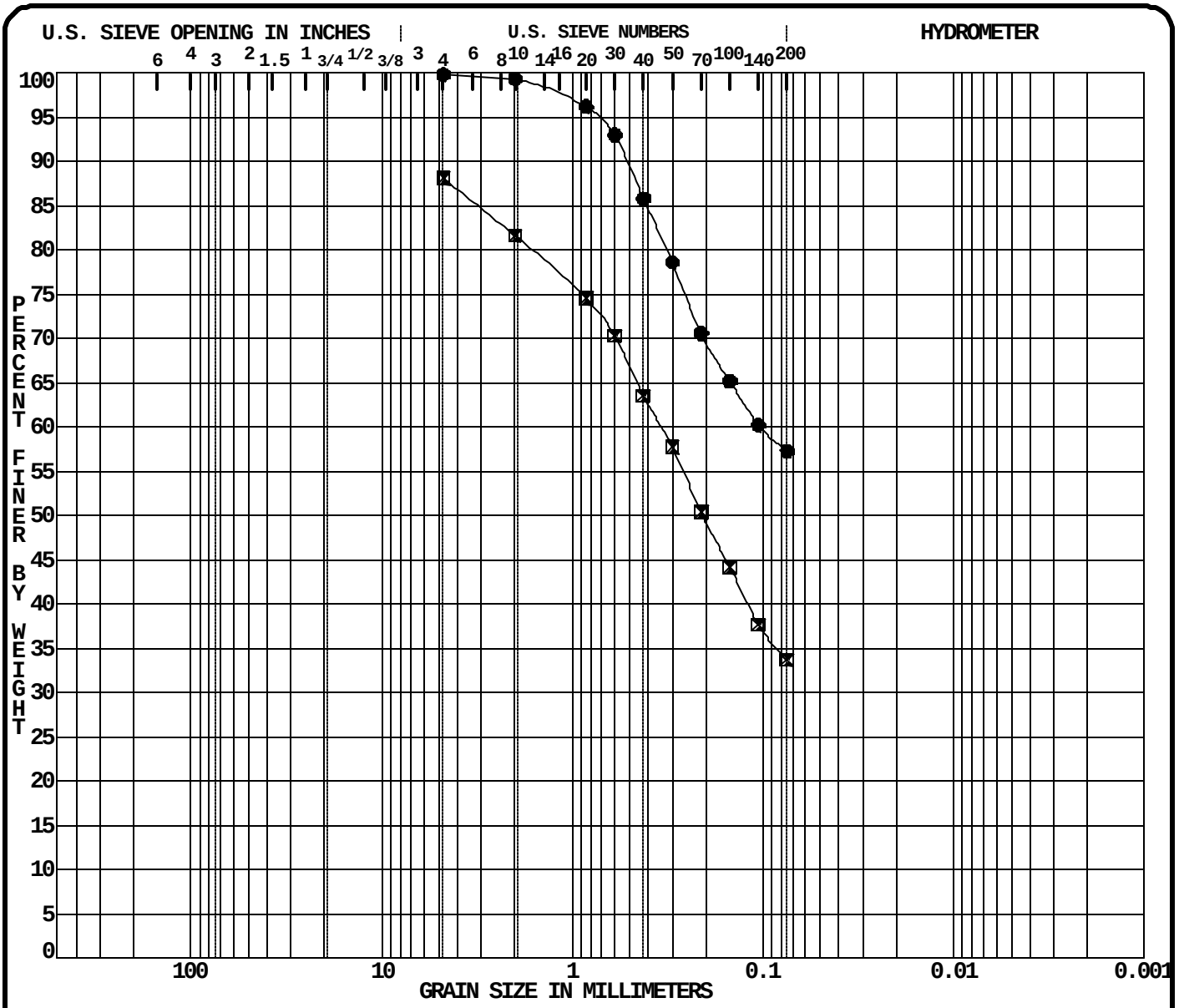
PROJECT Embrey Dam Proposed Placement Site - Stafford County

JOB NO.

DATE

GRADATION CURVES

Corps of Engineers, Norfolk District



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample ID	(depth)	Classification	MC%	LL	PL	PI	Cc	Cu
●	B5	(4.0)							
⊠	B6	(4.0)							

	Sample ID	(depth)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B5	(4.0)	4.76	0.10			0.0	42.5	57.3	
⊠	B6	(4.0)	4.76	0.34			0.0	54.4	33.7	

PROJECT Embrey Dam Proposed Placement Site - Stafford County

JOB NO.

DATE

GRADATION CURVES

Corps of Engineers, Norfolk District

SECTION 01111
SAFETY AND HEALTH REQUIREMENTS
8/02

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.

ENGINEERING MANUALS

EM 385-1-1	(1996) Safety and Health Requirements Manual

CODE OF FEDERAL REGULATIONS

29 CFR 1910	Occupational Safety and Health Standards, General Industry.
29 CFR 1926	Occupational Safety and Health Standards, Construction Industry.

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL DESCRIPTIONS:

SD-08 Statements

Safety and Health Plan (Accident Prevention Plan); G

SD-13 Certificates

Designated first-aid and CPR trained attendants; G

Safety indoctrination certificates; G

Activity Hazard Analysis

1.3 SAFETY REQUIREMENTS AND ACCIDENT PREVENTION

1.3.1 Standards

The Contractor shall comply with Occupational Safety and Health Act (OSHA) Standards, the Corps of Engineers Manual EM 385-1-1, "Safety and Health Requirements Manual," NFPA 101, and all applicable state, local, and

facility safety and occupational health requirements.

1.4 SAFETY AND HEALTH PLAN

1.4.1 Preparation and Implementation

An Accident Prevention Plan (APP) shall be prepared covering onsite work to be performed by the Contractor and all subcontractors, and shall at a minimum address the requirements for an Accident Prevention Plan (APP), as contained in Appendix A, EM 385-1-1. The Contractor shall designate in writing a Safety and Health Manager who shall be responsible for the development, implementation and continual oversight of the APP. The APP shall establish, in detail, the protocols necessary for the anticipation, recognition, evaluation, and control of hazards associated with each task to be performed. The APP shall address general safety and health requirements and procedures. The level of detail provided in the APP shall be tailored to the type of work, complexity of operations, and the anticipated hazards to be encountered. Details about some activities may not be available when the initial APP is prepared and submitted. Therefore, the APP shall address, in as much detail as possible, all anticipated tasks, their related hazards and the specific control measures to be instituted.

1.4.2 Acceptance and Modifications

Prior to submittal, the APP shall be signed and dated by the Contractor's designated Safety and Health Manager, Project Manager, and the Site Superintendent. The APP shall be submitted for review at least [10] days prior to the Pre-work Safety Conference. Deficiencies in the APP will be discussed at the Pre-work Safety Conference, and the APP shall be revised to correct the deficiencies and resubmitted for acceptance. Onsite work shall not begin until the plan has been accepted. A copy of the written APP shall be maintained onsite. Once accepted by the Contracting Officer, the Accident Prevention Plan, including Activity Hazard Analyses and all applicable plans, programs and procedures required by the Safety Manual (EM 385-1-1), will be enforced as if an addition to the contract. As work proceeds, the APP shall be adapted to new situations and new conditions. Changes and modifications to the accepted APP shall be made with the knowledge and concurrence of the Safety and Health Manager, the Site Superintendent, and the Contracting Officer. Should any unforeseen hazard become evident during the performance of the work, such hazards shall be brought to the attention of the Safety and Health Manager, the Site Superintendent, and the Contracting Officer, both verbally and in writing, for satisfactory resolution as soon as possible. In the interim, all necessary action shall be taken to re-establish and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment. Disregard for the provisions of this specification or the accepted APP shall be cause for stopping of work until the matter has been resolved and rectified to the satisfaction of the Contracting Officer.

1.4.3 Activity Hazard Analysis (AHA)

Activity Hazard Analyses (AHA) for each major phase of work shall be submitted and updated during the project. Each Activity Hazard Analysis

shall be prepared and submitted in accordance the requirements and format provided for in EM 385-1-1 (Figure 1-1), and shall be accepted as an Appendix to the project APP. At the end of this SECTION is a sample Activity Hazard Analysis Form showing a sampling of those activities, hazards, and actions to take to avoid hazards for similar work on this contract as required by the technical specifications. The Contractor is informed this sample form does not list all items that may be required of the Contractor for this contract; however, the Contractor shall utilize this form as a guide to provide, with his CQC Plan and Safety Plan for approval, a complete Activity Hazard Analysis of the scheduled work for the duration of the contract. The Project Superintendent and the Corps of Engineers Project Inspector shall sign the analysis. The AHA shall define the activities to be performed for each major phase of work, identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the AHA has been accepted and a preparatory meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activities, including the onsite Government representatives. The Activity Hazard Analyses shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations.

1.4.4 Hazard Communication Program

A hazard communication program shall be established and implemented in accordance with 29 CFR 1926, Section .59. Material safety data sheets (MSDSs) shall be provided for all hazardous materials brought onto the worksite. One copy shall be provided to the Contracting Officer and 1 copy shall be included in the Contractor's Hazard Communication Program.#.1 Sub TitleText

1.4.5 Corps of Engineers Standards

Corps of Engineers Manual EM 385-1-1, referred to in "ACCIDENT PREVENTION" article of Contract Clauses, is hereby supplemented or revised as follows:

1.4.5.1 Conflicts

When a conflict exists between the Corps of Engineers Safety and Health Requirements Manual, other safety requirements, or the contract plans and/or specifications, the most stringent requirement shall prevail, as determined by the Contracting Officer.

1.4.6 Equipment and Field Safety

1.4.6.1 Front End Loader - Backhoe Machines

All front end loader-backhoe machines and other machines, such as tractors that utilize a backhoe attachment, shall be checked for:

a. Exposed backhoe boom swing foot pedals.

b. Backhoe boom swing lever which can be reached by a man standing on the ground or on the outrigger support bracket.

1.4.6.1 Correction and Fabrication of Non-compliance Safety Items

Where these conditions exist, guards shall be fabricated to:

a. Cover over exposed foot pedals to prevent someone from accidentally stepping on them.

b. Enclose the swing lever so as to preclude operation from the ground or from the outrigger support bracket.

1.4.6.2 Crawler-, Truck-, and Wheel-Mounted Cranes

Implementation of paragraph 16.D.05 shall include the following:

a. When a crane is performing duty cycle work (such as clamshell, dragline, grapple, or pile driving) it does not require anti-two block equipment. If the crane is required to make a non-duty cycle lift (for example, to lift a piece of equipment, a tool box, or supplies), it will be exempt from the anti-two block equipment requirements if the following procedures are implemented:

(1) an international orange warning device (warning flag, warning tape, or warning ball) is properly secured to the hoist line at a distance of 8 to 10 feet above the hoist rigging;

(2) the signal person (or an individual designated as the signal person) acts as a spotter to alert the crane operator with a "STOP" signal when the warning device approaches the boom tip and the crane operator ceases hoisting functions when alerted of this; and

(3) while the non-duty cycle lift is underway, the signal person shall not stand under the load, shall have no duties other than signal person, and shall comply with the signaling requirements of EM 385-1-1;

b. Anti-two block devices are always required when hoisting personnel by crane or derrick.

1.4.7 Designated First-aid and CPR Trained Attendants

The Contractor shall designate at least 2 persons who are currently trained in first aid and CPR by the American Red Cross or other approved agency for each work shift, and these individuals shall be onsite at all times during site operations. They shall be trained in universal precautions and the use of PPE as described in the Bloodborne Pathogens Standard of 29 CFR 1910, Section .1030 and shall be included in the Contractor's Bloodborne Pathogen Program. These persons may perform other duties but shall be immediately available to render first aid when needed. A copy of each designated person's current valid First Aid and CPR certificate shall be provided.

1.4.8 Safety Indoctrination Certificates

The Contractor shall obtain from each of his employees, prior to his employment at the Radford Army Ammunition Plant, a signed certificate

indicating that the employee has read and understood a statement prepared by the Plant Commander setting forth the hazards and restrictions incident to construction operations in buildings used for powder production, or other requirements as may be applicable to the process safety management of highly hazardous chemicals (29 CFR 1926.64). The certificates shall be delivered to the Contracting Officer on the first day the employee is admitted to the Radford Army Ammunition Plant.]

1.4.9 Attendance at Safety Meetings

In order to allow for maximum attendance at weekly tool box safety meetings and monthly supervisor safety meetings by Corps of Engineers personnel, the Contractor shall advise the CO's Office, a minimum of 48 hours before the start of each meeting, of the date, time and location of Safety Meetings.

1.4.10 Minutes of Safety Meetings

Minutes shall be prepared by the Contractor and forwarded to the Contracting Officer by close of business of the next working day.

1.4.11 Protective Footwear

Protective footwear shall be worn by all personnel working on site. Such protective footwear shall be approved by the American National Standards Institute (ANSI), and shall be constructed and tested in accordance with the requirements of ANSI Standard Z41. Footwear providing protection against impact and compression hazards shall at least be rated as I75 and C75.

1.4.12 Head Protection

All construction areas are to be designated as hard hat areas, and shall be identified and appropriately posted as such. All protective headgear (hard hats) shall meet the requirements of ANSI Standard Z89.1. All personnel working in or visiting hard hat areas shall be provided with and required to wear Class A (low voltage electrical protection) or Class B (high voltage electrical protection) protective headgear.

1.4.13 Ground Fault Circuit Interrupters (GFCI)

GFCI's are required for work on this contract in accordance with EM 385-1-1. GFCI's are also required when using electric power extension cords.

PART 2 PRODUCTS (THIS PART NOT USED)

PART 3 EXECUTION (THIS PART NOT USED)
-- End of Section --

SECTION 01200
PROJECT MEETINGS

8/02

PART 1 GENERAL

1.1 SUBMITTALS (NOT APPLICABLE)

1.2 PRECONSTRUCTION CONFERENCE

1.2.1 Scheduling

After award of the construction contract and prior to the start of any construction work, the Contracting Officer (CO) will schedule and conduct a preconstruction conference. The Contractor's Project Manager, Superintendent and Quality Control System Manager shall attend this meeting. The Contractor is encouraged to have an officer of his company (Project Manager could be this person) and representation from each of his sub-contractors and major construction work divisions at the conference. This conference will be held at a location and time as specified by the CO.

1.2.2 Purpose

The purpose of this preconstruction conference is to enable the CO to outline the procedures that will be followed by the Government in its administration of this construction contract and to discuss the performance that will be expected from the Contractor. This conference will allow the Contractor an opportunity to ask questions about the Government's supervision and inspection of contract work, about security requirements, regulations, and other similar matters. The CO may invite City of Fredericksburg and other Using Service personnel and other Government personnel involved in the work to attend this conference.

1.2.3 Discussion Items

The following is a list of items for discussion during the preconstruction conference. However, the Contracting Officer may include additional items for discussion as conditions and the work require.

a. Authority of the Area/Resident Engineer and organization of the Area/Resident office.

b. Contractor's Progress Schedule.

c. Correspondence Procedures.

d. Contractor Labor Standards Provisions.

e. Contract Modifications and Administrative Procedures.

f. Contractor's Administrative, Laydown and Storage Areas.

g. Procedures for Processing Submittals.

h. Payment Estimate Data and Procedures.

i. Contractor Utilities.

j. Security Requirements and Other Regulations, if applicable.

k. Government Furnished Equipment, if applicable.

l. Disposition of Salvage Property.

m. Contractor Insurance Requirements.

n. Value Engineering Program.

o. Contractor Performance Evaluation.

p. As-Built Drawings.

q. Warranty of Construction and Single Point of Contact.

r. Turnover of Completed Facilities.

s. Contractor Plan of Operations - The Contractor shall indicate his method(s) of layout and accomplishment of the scheduled work, and his verification/certification procedures for accuracy of the respective areas of work to be accomplished.

t. Contractor Required Notification Procedures

u. Contractor's Submittal Register

v. Contractor's Survey and Information Reporting Procedures

w. Contractor's Placement Plans and Activity Hazard Analysis Related to Placement Procedures

1.3 OTHER MEETINGS

Other meetings may be held after the Preconstruction Conference, and such meetings may include the following:

a. Accident Prevention Safety Plan

b. Quality Control Plan.

c. Environmental Protection Plan.

d. Demolition Materials Management Plan.

1.4 MINUTES OF MEETINGS

The Government will prepare minutes of the meeting and will provide the Contractor with a signed original for review and concurrence. The minutes shall include all items discussed at the meeting and the Government will make all corrections provided by the Contractor and resubmit the corrected minutes to the Contractor within seven days.

PART 2 PRODUCTS (THIS PART NOT USED)

PART 3 EXECUTION (THIS PART NOT USED)

-- End of Section --

SECTION 01270

MEASUREMENT AND PAYMENT
08/02

PART 1 GENERAL

1.1 SUBMITTALS

Not Used.

1.2 LUMP SUM PAYMENT ITEMS

Payment items for the work of this contract for which contract lump sum payments will be made are listed in the BIDDING SCHEDULE and described below. All costs for items of work, which are not specifically mentioned to be included in a particular lump sum or unit price payment item, shall be included in the listed lump sum item most closely associated with the work involved. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.2.1 Base Bid Payment Item No. 0001 Mobilization and Demobilization

All costs connected with the mobilization and demobilization of all of the Contractor's dredging plant and equipment as defined below will be paid for at the contract lump sum price for this item. Sixty percent of the lump sum price will be paid to the Contractor upon completion of his mobilization at the work site. The remaining forty percent will be paid to the Contractor upon completion of demobilization. In the event the Contracting Officer considers that the amount in this item, sixty percent which represents mobilization and forty percent which represents demobilization, does not bear a reasonable relation to the cost of the work in this contract, the Contracting Officer may require the Contractor to produce cost data to justify this portion of the bid. Failure to justify such price to the satisfaction of the Contracting Officer will result in payment of actual mobilization costs, as determined by the Contracting Officer, at the completion of mobilization, and actual demobilization costs, as determined by the Contracting Officer, at the completion of demobilization. The determination of the Contracting Officer is not subject to appeal.

1.2.1.1 Mobilization

Mobilization shall include all costs for operations accomplished prior to commencement of actual dredging operations. This shall include transfer of dredge and attendant plant, booster pumps, bulldozers and other like equipment and machinery for site work, all initial installation of pipe, and any other associated work that is necessary in advance of the actual dredging operations.

1.2.1.2 Demobilization

Demobilization shall include general preparation for transfer of plant to its home base, removal of pipelines, cleanup of site of work including the placement area, and transfer of plant to its home base.

1.2.2 Base Bid Payment Item No. 0002 Placement Area Preparation, Maintenance and Final Grading

Payment for this item shall include all cost associated with demolition, clearing, site excavation, access road construction, dike construction including spillbox, geotextile, stone protection, access way, drainage piping, and operation of the spillbox for the duration of the contract.

1.3 UNIT PRICE PAYMENT ITEMS

Payment items for the work of this contract on which the contract unit price payments will be made are listed in the BIDDING SCHEDULE and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items.

1.3.1 Base Bid Payment Item No. 0003 Dredging

Payment to be made for all costs associated with dredging shall include the cost of removal and placement of material as indicated and specified, exclusive of the mobilization and demobilization and Placement Area preparation and maintenance as defined above. The total amount of material removed and to be paid for under this payment item will be measured by the cubic yard in place by computing the volume between the bottom surface shown by soundings of the last surveys made before dredging, and the bottom surface shown by the soundings of surveys made as soon as practicable after the work has been completed. The volume for measurement and payment shall include the material within the limits of overdepth and side slopes described in paragraph "Required Dredging Prism, Overdepth, and Side Slopes" of SECTION 02881, less any deductions that may be required for misplaced material described in subparagraph "Misplaced Material", below. The drawings are believed to accurately represent conditions at the time of the surveys indicated. New soundings will be taken immediately before dredging. The Contractor's unit price for dredging, based on the above method of computation of the quantity for payment, shall include his evaluation of shoaling, other natural changes in the waterway, or changes caused by the Contractor's operations that might occur during the period between the surveys before dredging and the surveys for acceptance of the work. Computations for payment purposes will be made by the Government using the average end area method and electronic data processing machines. Determination of quantities removed and the deductions made to determine quantities in place to be paid for in the areas specified, after having once been made, will not be reopened except on evidence of collusion, fraud, or obvious error.

1.3.2 Optional Bid Item 0004

Payment to be made for all costs associated with removal and disposal of petroleum contaminated soils that may be encountered in the work area. The total amount of material removed and to be paid for under this payment item will be measured by the ton and payment made for the actual quantity removed and disposed. All costs of testing required to determine if indicated soils or contaminated shall be borne in the Contractor's Base Bid Item No. 0002 lump sum costs and additional payments for testing will not be made.

1.4 MISPLACED MATERIAL

Any material that is deposited elsewhere than in places designated or approved by the Contracting Officer will not be paid for, and the Contractor may be required to remove such misplaced material and deposit it where directed by the Contracting Officer at the Contractor's expense.

1.5 EXCESSIVE DREDGING

Material taken from outside the specific areas to be dredged or beyond the limits as extended in paragraph "Required Dredging Prism, Overdepth, and Side Slopes" will be considered as excessive overdepth dredging, or excessive side slope dredging, for which payment will not be made. Nothing in these specifications shall be construed to prevent payment for the removal of shoals performed in accordance with the applicable provisions of Paragraphs SHOALING and FINAL EXAMINATION AND ACCEPTANCE of Section 01005.

1.6 MONTHLY PARTIAL PAYMENTS

Monthly partial payments will be based on estimated quantities determined by the Contracting Officer.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

SECTION 01330

SUBMITTAL PROCEDURES
03/01

PART 1 GENERAL

1.1 SUBMITTAL IDENTIFICATION AND CLASSIFICATION

The Contractor shall insure all submittals as required in the Contract are submitted to the government as identified and in accordance with the procedures specified in this Section. Submittals may be required for work features and procedures in the specifications that are not listed or classified as indicated below. The Contractor shall still be required to list these submittals in his Submittal Register as required by the respective specification, and designate the submittal and action required in the register.

1.1.1 Submittal Identification

Submittals required are identified by SD numbers and titles with typical items to be submitted under this classification as follows:

SD-01 Preconstruction Submittals

Certificates of insurance
List of proposed subcontractors
List of proposed products
Construction Progress Schedule
Submittal schedule
Schedule of values
Health and safety plan
Activity Hazard Analysis
Quality control plan
Environmental protection plan

SD-02 Shop Drawings

As used in this section, drawings, schedules, diagrams, and other data prepared specifically for this contract, by contractor or through contractor by way of subcontractor, manufacturer, supplier, distributor, or other lower tier contractor, to illustrate portion of work.

SD-03 Product Data

Preprinted material such as illustrations, standard schedules, performance charts, instructions, brochures, diagrams, manufacturer's descriptive literature, catalog data, and other data to illustrate portion of work, but not prepared exclusively for this contract.

SD-04 Samples

Physical examples of products, materials, equipment, assemblies, or workmanship that are physically identical to portion of work, illustrating portion of work or establishing standards for evaluating appearance of finished work or both.

SD-05 Design Data

Placement plan with proposed equipment usage and datum used and benchmark locations.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements.

Results of environmental testing.

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

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

Investigation reports.

Daily checklists.

Final acceptance test and operational test procedure.

S D-07 Certificates

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

Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

S D-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

Factory test reports.

SD-10 Closeout Submittals

Placement area profiles and surveys.

1.1.2 Submittal Classification

Submittals are classified as follows:

a. 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."

b. 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.

1.2 APPROVAL OF SUBMITTALS

The approval of submittals by the Contracting Officer's Representative (COR), shall not be construed as a complete check, but will indicate only that the general method of construction, work scheduling, 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 the dimensions, layout, and satisfactory construction of all work as indicated and specified. After submittals have been approved by the COR, resubmittal for the purpose of changing the approved Work Plan, Progress Schedule, designated Acceptance Sections, or for any other reason, will not be given consideration unless accompanied by an explanation as to why a change is necessary.

1.3 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the COR and promptly furnish a corrected submittal with the Daily CQC Report as specified for the initial submittal. If the Contractor considers any correction indicated on the submittal(s) to constitute a change to the contract, notice as required under the Contract Clause entitled "Changes" shall be

given at the same time to the COR.

1.4 WITHHOLDING OF PAYMENT

Payment for any part of the scheduled work accomplished by the Contractor, including transportation of the Contractor's plant to or from the site of the work, will not be made if required approvals for all parts of the scheduled work have not been obtained.

PART 2 PRODUCT (Not Used)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall submit all items required and specified in these specifications, and as may be required by other portions of the scheduled work. Proposed deviations from the contract requirements shall be clearly identified. The required submittals shall be listed in the Contractor's Work Plan and on the Contractor's Submittal Register Form 4288-R. All requirements of submittals shall be coordinated with SECTION 01451. Any questions regarding submittals required of the Contractor will be discussed at the Preconstruction Conference specified in SECTION 01200. At this Conference, and during the progress of the work, the COR may request submittals in addition to those listed when deemed necessary to adequately describe the work covered in the respective sections. Dimensions and units of weights and measures used on all submittals shall be the same as indicated and specified. 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 as complete by the CQC representative as specified in SECTION 01451.

3.2 SCHEDULING

Submittals covering component items forming a system or items that are interrelated, such as access/egress to the work area, and delivery/storage of materials prior to construction of features shall be scheduled to be coordinated with the requirements specified and submitted concurrently.

3.2.1 Submittal and Report Identification

All submittals and reports shall be complete, properly marked, adequately detailed, and identified with location of occurrence in the respective specification section with paragraph number, drawing number and location, and respective Plan or Report requirement, as applicable. The Contractor's CQC representative shall sign and date each submittal and report as complete.

3.3 SUBMITTAL REGISTER (ENG FORM 4288)

At the end of this SECTION is a sample Submittal Register (ENG Form 4288-R) showing those plans, lists, and items of equipment and materials for which submittals are required by the specifications. The Contractor is informed this sample form may not list all submittals that may be required

of the Contractor; however, the Contractor shall utilize this form as a guide to provide, with his CQC Plan for approval, a complete Submittal Register listing all submittals required for the duration of the contract. The Submittal Register shall consist of individual pages representing the respective Specification Sections as shown in the attached sample. Columns "d" through "q" of the sample form indicate the method the Contractor is to use in identification of his submittals. In the respective Specification Sections and when so directed by specified requirements in other parts of the contract for a particular type of submittal, the Classification status to be inserted in Columns "p" and "q" is indicated. The Contractor's Quality Control Representative shall certify in writing as part of the CGC Plan the appropriate designation for all submittals has been made. The remainder of columns and how they are to be utilized during administration of the contract will be addressed at the Pre-Construction Conference as noted in SECTION 01200.

3.4 TRANSMITTAL FORM (ENG FORM 4025)

At the end of this SECTION is a sample Transmittal Form (ENG Form 4025) which shall be used for transmittal coordination of all submittals. This form shall be completed by the Contractor identifying each item to be submitted. Special care shall be exercised to ensure proper listing of the date of the submittal transmittal, specification section and paragraph number pertinent to the data submitted for each item, and numerical sequence coordination with the Submittal Register Form 4288-R, Column "b".

-- End of Section --

Instructions For Completing ENG FORM 4025-R, Mar 95

A. Enter date the submittal is issued.

B. Enter the Transmittal Number under which the submittal was made.

The Transmittal Number shall have the following format:

A-B.C

Where: A is the specification section

B is a consecutive number where 1 would be the first transmittal under the given specification section, 2 would be the second transmittal, etc.

C is a consecutive number identifying resubmittals. Number 1 would be the first resubmittal, 2 the second, etc.

Examples of Transmittal Numbers under Specification Section 01451:

01451-1
01451-2
01451-1.1 (first resubmittal of 01451-1)
01451-3

C. Enter name and address of Corps of Engineers reviewing office.

D. Enter name and address of Contractor.

E. Enter contract number.

F. If this is the first submittal of information for this item number, check the box for "New Submittal". If not, check the box for "Resubmittal".

G. If the "Resubmittal" box is checked, enter the previous Transmittal No.

H. Enter the specification section that applies to this Transmittal Form. A separate Transmittal Form shall be used for submittals under separate sections of the specifications.

I. Enter name and location of project.

J. Indicate whether the submittal is "For Information Only (FIO)" or for "Government Approval (Gov't Approval)".

K. Enter the Item No. as identified on the Submittal Register.

L. Enter the Description of the item submitted as identified on the Submittal Register.

M. Enter information as necessary. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certification.

N. Enter the number of copies of submittal data attached.

O. Enter the specification paragraph number as identified on the Submittal Register using the following format:

Spec. Section - Paragraph number

P. Enter information as necessary.

Q. Enter Contractor Action Code. See reverse side of ENG Form 4025 for applicable codes.

R. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications. Attach a written statement describing the variation.

S. Review code assigned by the Government reviewer.

T. Remarks from the Contractor or Government review comments. Government review comments may also be placed on a separate sheet of paper.

U. Signature of Contractor reviewer.

V. Number of enclosures being returned to the Contractor by the Government reviewer

W. Signature and title of Government approving authority.

X. Date of review by the Government.

Other: In submitting manufacturer's literature or similar information, the Contractor shall clearly identify the item proposed for use.

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 1 Jan 97	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		

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: SPEC. PARA. NO. e	CONTRACT REFERENCE DOCUMENT: DRAWING SHEET NO. f	FOR CONTRACTOR USE CODE g	VARIATION 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 otherwise stated.

_____
NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED *(List by Item No.)*	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Phase 1 Embrey Dam Removal Project - Sediment Removal

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CONTRACTOR ACTION ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	APPROVING AUTHORITY 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)
		01005	SD-01 Preconstruction Submittals															
			Access Plan	1.2.4	G													
			Dredging Intent Notification	1.3	G													
			Report of Dredging	1.3.2	G													
			Advance Notice for Dredging	1.5.1	FIO													
			Acceptance Section Survey Reports	1.5.2	FIO													
			Safety Plan	1.11.1	G													
			Authorized Plant Operators		G													
			Hurricane Plan	1.11.3	G													
			Diving Operations Plan	1.11.6	G													
		01111	SD-08 Manufacturer's Instructions															
			Safety and Health Plan (Accident Prevention Plan)		G													
			Designated first-aid and CPR trained attendants	1.4.7	G													
			Safety indoctrination certificates		G													
			Activity Hazard Analysis	1.4.3	FIO													
		01355	SD-01 Preconstruction Submittals															
			Environmental Protection Plan		G													
			Spill Control Plan		G													
			Recycling and Solid Waste Minimization Plan		G													
			Air Pollution Control Plan		G													
			Contaminant Prevention Plan		G													
			Waste Water Management Plan		G													

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Phase 1 Embrey Dam Removal Project - Sediment Removal

CONTRACTOR

ACTIVITY NO (a)	TRANSMITTAL NO (b)	SPEC SECT (c)	DESCRIPTION ITEM SUBMITTED (d)	PARAGRAPH # (e)	CLASSIFICATION (f)	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES SUBMIT (g)	APPROVAL NEEDED BY (h)	MATERIAL NEEDED BY (i)	CONTRACTOR ACTION CODE (j)	DATE OF ACTION (k)	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR (l)	APPROVING AUTHORITY DATE FWD TO OTHER REVIEWER (m)	DATE RCD FROM OTH REVIEWER (n)	ACTION CODE (o)	DATE OF ACTION (p)	MAILED TO CONTR/ DATE RCD FRM APPR AUTH (q)	REMARKS (r)
		01355	Historical, Archaeological,		G													
			Cultural Resources Biological															
			Resources and Wetlands Plan															
		02220	SD-01 Preconstruction Submittals															
			Work Plan		G													
		02235	SD-02 Shop Drawings															
			Access Walkway, Spill Box and		G													
			Drainage Piping															
		02275	SD-03 Product Data															
			Plant Reports		FIO													
		02331	SD-03 Product Data															
			Excavation	3.6	FIO													
			Plan of Operations		FIO													
			Nuclear Density		FIO													
			SD-06 Test Reports															
			Measurement of Fill Material		FIO													
		02373	SD-04 Samples															
			Quality Assurance Samples and	3.1	FIO													
			Tests															
			SD-07 Certificates															
			Geotextile		FIO													
		02881	SD-01 Preconstruction Submittals															
			Dredging and Dredged Material		G													
			Placement Plan															
			Notice to Mariners		FIO													
			FIO		FIO													

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Phase 1 Embrey Dam Removal Project - Sediment Removal

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CONTRACTOR ACTION ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	APPROVING AUTHORITY 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)
		02881	SD-07 Certificates															
			Equipment and Machinery		FIO													
			Operator Authorization															
		03300	SD-03 Product Data															
			Mixture Proportions		G													
			SD-06 Test Reports															
			Strength, Slump, Air Content and		FIO													
			Temperature Tests															
			SD-07 Certificates															
			Qualifications		G													
		05120	SD-02 Shop Drawings															
			Spillbox Erection Plan; G, COR		FIO													
			SD-03 Product Data															
			Plant Reports		FIO													

SECTION 01355

ENVIRONMENTAL PROTECTION
8/02

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)

33 CFR 328	Definitions
40 CFR 68	Chemical Accident Prevention Provisions
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps on Engineers Safety and Health Requirements Manual
WETLAND MANUAL	Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

1.2 DEFINITIONS

Environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents that adversely affect human health or welfare; unfavorably alter ecological balances of plant or animal communities; or degrade the environment from an aesthetic, cultural or historic perspective.

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, or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention and 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), waste thinners, excess paints, excess solvents, waste solvents, excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Waters of the United States

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

1.2.5 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable Federal, State, and local laws and regulations. The Contractor shall provide environmental protective measures and procedures to prevent and control pollution, limit habitat disruption, and correct environmental damage that occurs during construction. 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 notices obtained by the Contractor. All costs associated with this SECTION shall be included in the contract price. The Contractor shall be responsible for payment of all fines and fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

1.6 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures"

SD-01 Preconstruction Submittals; G

Environmental Protection Plan; G

Prior to commencement of any work, including delivery of any plant, equipment or construction materials to the site, submit a plan for environmental protection as specified herein. The information indicated below and specified herein shall be included with the Environmental Protection Plan for approval.

Spill Control Plan; G
Recycling and Solid Waste Minimization Plan; G
Air Pollution Control Plan; G
Contaminant Prevention Plan; G
Waste Water Management Plan; G
Historical, Archaeological, Cultural Resources Biological Resources and Wetlands Plan; G

1.7 ENVIRONMENTAL PROTECTION PLAN REQUIREMENTS

As a part of the Contractor's Work Plan, the Contractor shall submit an Environmental Protection Plan for review and approval by the Contracting Officer. This Environmental Protection Plan shall consist of a written narrative, as well as any supplemental drawings, documents, and photographs required to verify the Contractor's work will be in accordance with all laws and regulations governing the work as indicated and specified. The Contractor shall submit this plan and all supplementary data for approval at least 10 calendar days prior to the scheduled Preconstruction Conference. The Contractor will be informed in writing of any revisions as may be required by the Contracting Officer at the Preconstruction Conference and shall submit a final plan for final approval not later than 5 calendar days prior to start of scheduled construction activities. Acceptance is conditional and is predicated upon satisfactory performance during construction. The Government reserves the right to require the Contractor to make changes in the Environmental Protection Plan or operations if the Contracting Officer determines that environmental protection requirements are not being met. The plan shall detail the actions that the Contractor shall take to comply with all applicable Federal, State, and local laws and regulations concerning environmental

protection and pollution control and abatement, as well as the additional specific requirements of this contract. No physical work at the site, including delivery of the Contractor's plant and equipment and construction materials, shall begin prior to acceptance by the Contracting Officer of the Contractor's Environmental Protection Plan covering the work to be performed. 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.

1.7.1 Contents of Environmental Protection Plan

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. The Environmental Protection Plan shall be current and maintained onsite by the Contractor. The Environmental Protection Plan shall comply with the requirements of EM 385-1-1 and include, but not be limited to, the following:

a. Name of person within the Contractor's organization who is responsible for ensuring adherence to the Environmental Protection Plan and those who may be delegated with separate responsiblities subject to approval of the CO.

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

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

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

e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations.

f. Drawings showing locations of proposed pipeline alignments, barge and scow channel crossing points, material storage areas, equipment storage structures, sanitary facilities, and methods to contain dredged debris materials on the site and their offsite disposal.

g. The Contractor shall include in the plan, as coordinated with the Activity Hazard Analysis and as required in the specifications, the

details of environmental monitoring requirements and a description of how this monitoring will be accomplished under the laws and regulations governing the work.

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. The Contractor shall provide, as part of the Environmental Protection Plan, a list of all State and local environmental laws and regulations that apply to the construction operations under the Contract.

j. The Contractor shall include as part of the environmental protection plan, a Spill Control Plan. The plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by the Emergency Response and Community Right-to-Know Act or regulations 40 CFR 68, 40 CFR 302, 40 CFR 355, and 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 in addition to the legally required Federal, State, and local reporting channels (including the National Response Center at 1-800-424-8802 and the Virginia DEQ, Northern Virginia Regional Office, 13901 Crown Court, Woodbridge, Va. 22193, phone (703) 583-3800) if a reportable quantity spill occurs. 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 solid waste disposal plan identifying methods and locations for

solid waste disposal including dredged material 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 by signature of authorized agent of the solid waste to be disposed in the site shall be attached to this plan. The report shall be submitted with the Daily Report of Operations and shall indicate by way-bills the total amount of waste generated and total amount of waste in cubic yards or tons disposed.

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

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, and other wastes generated by the Contractor's activities do not become air borne and travel off the project site.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

o. A waste water management plan that identifies the methods and procedures for management and discharge of waste waters which are directly derived from construction activities.

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

1.8 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.

1.9 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 PROTECTION OF FEATURES

This section supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. The Contractor shall prepare a list of features requiring protection under the provisions of the contract clause that are not specifically identified on the drawings or otherwise specified as environmental features requiring protection. The Contractor shall protect those environmental features as indicated and specified, in spite of interference that their preservation may cause to the Contractor's work under the contract.

3.2 SPECIAL ENVIRONMENTAL REQUIREMENTS (Permits)

This section supplements the Contractor's responsibility under the contract clause "PERMITS AND RESPONSIBILITIES" to the extent that the Government has already obtained environmental permits for the required dredging and dredged material placement. These special environmental requirements are an outgrowth of environmental commitments made by the Government during the project development. All dredging, transport and placement of dredged material under this contract shall be in strict compliance with the conditions set forth in the Virginia Department of Environmental Quality Water Protection Permit and other applicable Permits that are included as a part of this contract at the end of this SECTION. The Contractor is informed that an Environmental Assessment was conducted on the site and the results of which are included at the end of SECTION 01055. The contract plans and specifications have been prepared to comply with these permits and assessements which were established during the planning and development of this project. The Contractor is advised that any deviations from the construction methods and procedures indicated by the plans and specifications that are not prior approved in writing by the Contracting Officer, or any non-compliance with or violation of the conditions stated

in the permits noted herein, shall be cause for the Contracting Officer issuing a stop work order. Any stop work orders issued for any of these causes will not be subject to time extensions or cost recovery by the Contractor. Any non-compliance with or violation of the conditions stated in the permits noted herein may result in revocation of the permits for the project and may result in criminal and civil penalties against the Contractor.

3.3 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 dredged, 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.

3.3.1 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 protecting particular objects.

3.3.2 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. Any temporary measures shall be removed after the area has been stabilized.

3.4 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. All water areas affected by construction activities shall be monitored by the Contractor. The Contractor shall perform monitoring, inspections, sampling and testing, reporting, and record keeping as indicated and specified.

3.5 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs.

3.6 PROTECTION OF MARINE ANIMALS, WILDLIFE AND VEGETATION

The Contractor is informed that the dredging and material placement areas are in a portion of Virginia frequented by migratory birds and is a native habitat for eagles, hawks, egrets, herons, pelicans, terns, and other wildlife that are identified as either endangered species protected by federal law or species of special concern for Commonwealth of Virginia agencies. If, in the performance of this contract, evidence of the possible disturbance to any such migratory bird or listed species may occur, the Contractor shall notify the Contracting Officer immediately, giving the location and nature of the findings. The Contractor shall advise all personnel associated with the operation of the vessels and plant of the civil and criminal provisions of the Endangered Species Act and the Migratory Bird Act. The Contractor shall comply with all laws and regulations governing the work and the provisions set forth in this Section. In the event that endangered or protected species are affected by this work, the work under this contract may be suspended or terminated as determined by the Contracting Officer. All crew members of the dredge and attendant plant operators shall be required to read and certify in writing they are aware of the contents of this specification and the Contractor's Environmental Protection Plan. Copies of this Section and the Environmental Protection Plan, including a posting warning of the civil and criminal liabilities that violators are subject to for non-compliance to the requirements of them, shall be clearly posted with other required postings on-site for employees.

3.7 WETLANDS AND NATURAL HABITAT

Use of the Contractor's plant to construct the scheduled work, including the associated use of ropes, cables, or guys over wetlands and in natural habitat areas, shall be scheduled in a manner to disturb the wetlands and natural habitat areas to the minimum necessary to accomplish the work. Any damage to wetlands or natural habitat areas shall be repaired to original condition at no additional expense to the government. The Contracting Officer will notify the Contractor in writing of any observed noncompliance with the previously mentioned Federal, State or local 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 proposed corrective action and take such action when approved. If the Contractor fails 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 time extensions shall be granted or costs or damages allowed to the Contractor for any such suspensions.

3.8 U.S. DEPARTMENT OF AGRICULTURE (USDA) QUARANTINED CONSIDERATIONS

The Contractor shall thoroughly clean all construction equipment at the prior job site in a manner that ensures all residual soil is removed and that egg deposits from plant pests are not present. The Contractor shall consult with the USDA Plant Protection and Quarantine (USDA - PPQ)

jurisdictional office for additional cleaning requirements that may be necessary.

3.9 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.10 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 --

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Northern Virginia Regional Office
13901 Crown Court
Woodbridge, VA 22193-1453
(703) 583-3800 *fax* (703) 583-3801
www.deq.state.va.us

Robert G. Burnley
Director

Gregory L. Clayton
Regional Director

July 16, 2002

Mr. Doug Fawcett
Director of Public Works
City of Fredericksburg
P O Box 7447
Fredericksburg, Virginia 22404

Re: Draft Virginia Water Protection (VWP) Permit No. 02-0353, Embrey Dam Removal and Installation of Intake, Fredericksburg City and Stafford County, Virginia, Draft Permit and Public Notice

Dear Mr. Fawcett:

Enclosed is a copy of the Department of Environmental Quality (DEQ) Public Notice and **revised** draft Virginia Water Protection individual permit for the above-referenced project for your review. DEQ has reviewed the attached comments dated July 3, 2002 The following appropriate changes were made to the Part I – Special Conditions of the individual permit:

- Part I C.2 The condition was deleted.
- Part I.D.8 The condition was modified to require that proof of the purchase of credits be submitted to DEQ-NVRO prior to the commencement of construction activities in wetlands.
- Part I.D.13 The condition was deleted.
- Part I F.14 The condition was deleted.
- Part I.F.15 The condition was deleted.
- Part I.G.2 The condition was modified to require that proof of the purchase of credits be submitted to DEQ-NVRO prior to the commencement of construction activities in wetlands.

If you have any questions, comments, or objections concerning the Public Notice or draft permit, please contact me within **14 calendar days** of the date of this letter. I am available to meet with you to resolve any questions or concerns.

Acceptance of the permit is evidenced by publishing the enclosed Public Notice, which must be published only once at the applicant's expense in a newspaper of general circulation in the area of the project. Publication of the Public Notice initiates the required 30-calendar day comment period. DEQ

DEPARTMENT OF THE ARMY
NORFOLK DISTRICT, CORPS OF ENGINEERS
FORT NORFOLK, 803 FRONT STREET
NORFOLK, VIRGINIA 23510-1096

REPLY TO
ATTENTION OF

July 3, 2002

RECEIVED
JUL 5 2002
Northern Va. Regional
Dept. of Environmental Quality

Planning Branch

Ms. Trisha M. Renaud
Virginia Department of Environmental Quality
Northern Virginia Regional Office
13901 Crown Court
Woodbridge, VA 22193

Dear Ms. Renaud:

We are in receipt of your correspondence dated June 20, 2002, containing the copy of the Department of Environmental Quality (DEQ) Public Notice and draft Virginia Water Protection individual permit number 02-0353. After a thorough review by the project team, several items were identified as areas for further coordination prior to our publishing the public notice:

1. Part I – Special Conditions. Condition B. 6.
As the project will not result in temporary impacts to wetlands, request deletion of requirements for temporary disturbances to wetlands (See comments for condition D. 12).

2. Part I – Special Conditions. Condition C. 1.
Agree to provide photodocumentation at impact sites that will be identified.

3. Part I – Special Conditions. Condition C. 2.
Request deletion of this condition as the project will not involve rerouting flowing streams through new channels.

4. Part I – Special Conditions. Condition D. 8.
Request that documentation of in-lieu fund contribution be submitted to DEQ-NVRO within 180 days of permit issuance, not 60 days. We will not be able to acquire the necessary funds until the construction for the project is authorized by Congress next fiscal year. Therefore, we will not have the funds within 60 days of the permit issuance. Additionally, the contract for the access road, which is the component of the project impacting the 0.75 acre of palustrine wetlands, is not currently scheduled to be awarded until summer of 2003. If any changes occur during the development of plans and specifications for this contract that would potentially reduce wetland impacts (i.e., narrowing of access road), the extra time will allow us the opportunity to modify our in lieu fee accordingly.

5. Part I – Special Conditions. Condition D. 12.
Request deletion of this condition as the project will not result in temporary impacts to wetlands (See comment 1, above, regarding condition B.6).

A. Authorized Activities

1. This permit authorizes the permanent fill of 0.75 acres of palustrine forested wetlands; the dredging of 305,350 cubic yards of sediment from the Rappahannock River; the temporary impact to 1.33 acres of subaqueous land of Rappahannock River; and the installation and operation of a water withdrawal structure on the Rappahannock River as indicated in the Joint Permit Application dated February 21, 2002 and additional information dated March 26, 2002 and May 8, 2002 and deemed complete on May 10, 2002.

2. The project activities, including any conditions and limitations, shall be adhered to as described in the Joint Permit Application and any supplemental materials approved by DEQ.

3. The permittee shall notify the DEQ Northern Virginia Regional Office (DEQ-NVRO) of any additional impacts to surface waters, including wetlands, associated with this project. Any additional impacts to surface waters, including wetlands, shall be subject to individual permit review or modification of this permit, and compensation may be required.

4. This permit is valid for 10 years from the date of issuance. Reissuance of the permit may be necessary if any portion of the authorized activities or any permit requirement (including compensation provisions) has not been completed. The original permit term and extension cannot exceed the maximum of 15 years.

DRAFT

B. Standard Project Conditions

1. The activities authorized by this permit shall be executed in a manner to minimize any adverse impact on stream beneficial uses, as defined in § 62.1-10(b) of the Code.

2. No activity shall substantially disrupt the movement of aquatic life indigenous to the water body, including those species that normally migrate through the area, unless the primary purpose of the activity is to impound water. Culverts placed in streams shall be installed to maintain low flow conditions. No activity may cause more than minimal adverse effect on navigation. The activity shall not impede the passage of normal or expected high flows and the structure or discharge shall withstand expected high flows. Flows downstream of the project area shall be maintained to protect all uses.

3. The permittee shall conduct activities in accordance with the time-of-year (TOY) restrictions of March 01 through June 30, as recommended by the Department of Game and Inland Fisheries. The permittee shall maintain a copy of such TOY restriction or notification that no restriction is necessary, for the duration of the construction phase of the project.

4. All excavation, dredging, and/or filling in surface waters shall be accomplished in a manner that minimizes stream bottom disturbances and turbidity increases.

5. Virginia Water Quality Standards shall not be violated in any surface water as a result of the project activities.

6. Temporary disturbances to wetlands during construction shall be avoided and minimized to the maximum extent practicable. All temporarily disturbed wetland areas shall be stabilized within 30 days of completing work, restored to pre-construction conditions, and planted or seeded with appropriate wetland vegetation according to cover type (emergent, scrub/shrub, or forested). The permittee shall take all appropriate measures to promote revegetation of temporarily disturbed wetland areas with wetland vegetation by the second year post-disturbance. All temporary fills shall be removed in their entirety and the affected area returned to pre-existing contours.

7. Heavy equipment in temporarily impacted surface waters shall be placed on mats, geotextile fabric, or other suitable measures to minimize soil disturbance to the maximum extent practical. Mats shall be removed as soon as the work is complete.

8. All materials (including fill, construction debris, and excavated and woody materials) temporarily stockpiled in wetlands shall be placed on mats or geotextile fabric, immediately stabilized to prevent entry into surface waters, managed such that leachate does not enter surface waters, and entirely removed within 30 days following completion of that construction activity. Disturbed areas shall be returned to original contours, stabilized within 30 days following removal of the stockpile, and restored to the original vegetated state.

9. All non-impacted surface waters within the project or right-of-way limits that are within fifty feet of any project activities shall be clearly flagged or demarcated for the life of the construction activity within that area. The permittee shall notify all contractors and subcontractors that these marked areas are surface waters where no activities are to occur.

10. Erosion and sedimentation controls shall be designed in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992. These controls shall be placed prior to clearing and grading and maintained in good working order to minimize impacts to surface waters. These controls shall remain in place until the area stabilizes.

11. Any exposed slopes or streambanks shall be stabilized immediately upon completion of work in each impact area in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992.

12. Continuous flow of perennial springs shall be maintained by the installation of spring boxes, French drains, or other similar structures.

13. The permittee shall employ measures to prevent spills of fuels, lubricants, or other pollutants into surface waters.

14. All construction, construction access (for example, cofferdams, sheetpiling, and causeways) and demolition activities associated with this project shall be accomplished in a manner that minimizes construction or waste materials from entering surface waters to the maximum extent practicable, unless authorized by this permit.

15. Untreated stormwater runoff shall be prohibited from directly discharging into any surface waters. In accordance with the Virginia Erosion and Sediment Control Handbook, Third

Edition, 1992, appropriate best management practices (BMP) shall be deemed suitable treatment prior to discharge into surface waters.

16. All fill material shall be clean and free of contaminants in toxic concentrations or amounts in accordance with all applicable laws and regulations.

17. Wet or uncured concrete shall be prohibited from entry into surface waters.

18. No machinery may enter surface waters, unless authorized by this permit.

19. In issuing this permit, DEQ has not taken into consideration the structural stability of any proposed structure.

DRAFT

C. Construction Monitoring

1. A photo station shall be established at each impact site authorized by this permit. The photograph orientation at each station shall remain constant during all monitoring events. The photographs shall document site activities and conditions, which may include installation and maintenance of erosion and sediment controls; flagged non-impact surface waters; construction access and staging areas; filling, excavation, and dredging activities; culvert installation; dredge disposal; and site stabilization, grading, and associated restoration activities. Photographs shall be taken prior to site activities, at the end of each quarter, and within one week of construction completion. Quarterly photographs at an individual impact site shall not be required until construction activities are initiated at that site. Quarterly photographs at an individual impact site shall not be required following completion of construction at that impact site and the site is stabilized. Each photograph shall be labeled to include the following information: permit number, impact area and photo station number, date and time of the photograph, name of the person taking the photograph, photograph orientation, and photograph subject description.

D. Required Notifications and Submittals

1. All written communications required by this permit shall be submitted to the DEQ-NVRO 13901 Crown Court, Woodbridge, Virginia 22193. The permit number shall be included on all correspondence.

2. All reports required by this permit and other information requested by DEQ shall be signed by the applicant or a person acting in the applicant's behalf, with the authority to bind the applicant. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above; and

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

   c. If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization shall

be submitted to DEQ prior to or together with any separate information, or applications to be signed by an authorized representative.

3. All submittals required by this permit shall contain the following signed certification statement:

   I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

4. Any fish kills or spills of fuels or oils shall be reported immediately upon discovery. If spills or fish kills occur between the hours of 8:15 AM to 5:00 PM Monday through Friday, DEQ shall be notified at DEQ-NVRO (703) 583-3800; otherwise, the Department of Emergency Services shall be notified at 1-800-468-8892.

5. Violations of Virginia Water Quality Standards shall be reported within 24 hours to DEQ at DEQ-NVRO (703) 583-3800.

6. DEQ shall be notified in writing when potential environmentally threatening conditions are encountered which require debris removal or involve potentially toxic substances. Measures to remove the obstruction, material, or toxic substance or to change the location of any structure are prohibited until approved by DEQ.

7. Final Plans and Specifications for activities authorized by this permit shall be submitted prior to the beginning of each construction component. Construction shall be performed in accordance with the submitted Plans and Specifications. Any changes to the final construction plans in permitted areas shall be submitted to DEQ prior to construction activities.

8. Documentation that the USACE has received the in-lieu fund contribution shall be submitted to DEQ-NVRO 30 days prior the commencement of construction activities in palustrine forested wetlands.

9. The permittee shall submit an annual report containing the water withdrawal data in accordance with Part I.H.3 by January 31st of each year for the previous calendar year.

Construction

10. DEQ shall be notified in writing at least ten days prior to the initiation of construction activities authorized under this permit so that inspections of the project can be planned, if deemed necessary. The notification shall include identification of the impact areas at which work will occur and a projected schedule for completing work at each permitted impact area.

mimic natural stream morphology. The rerouted stream flow shall be fully established before construction activities in the old streambed can begin.

6. Stream bottom elevations at road crossings shall be measured at the inlet and outlet of the proposed structure and recorded prior to construction and within one week after the completion of construction to ensure that the design elevations were met.

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F. **Dredging**

1. Dredging shall be accomplished to minimize disturbance of the bottom and minimize turbidity levels in the water column.

2. Dredging and excavation shall be limited to the minimum necessary to conduct the permitted activities.

3. A dredged material management plan for the designated upland disposal site shall be submitted 30 days prior to the dredging activity.

4. The double handling of dredged material in surface waters shall not be permitted.

5. All dredged materials pumped by hydraulic method via pipeline to the disposal area will be done in such a manner as to prevent leakage or discharge into surface waters. In the event of a ruptured pipeline, dredging/disposal operations shall immediately cease until repairs are accomplished.

6. Side slope cuts of the dredging area shall not exceed a two horizontal to one vertical (2:1) slope to prevent slumping of material into the dredged area.

7. During transport, dredge material shall be handled in accordance with the transport operation's spill prevention plan. In the event of a spill, the response portions of the plan shall be implemented immediately.

8. During off-loading, dredge material shall not be handled directly over open water. The off-loading operation shall be conducted in a manner that prevents any discharge of liquids or solids to surface waters.

9. The dredge material dewatering area shall be of adequate size to contain the dredge material and to allow for adequate dewatering and settling out of sediment prior to discharge back into surface waters.

10. The dredge material dewatering area shall utilize an earthen berm or straw bales covered with filter fabric along the edge of the area to contain the dredged material, and shall be properly stabilized prior to placing the dredged material within the containment area.

11. Pipeline outfalls and spillways shall be located at opposite ends of the dewatering area to allow for maximum retention and settling time. Filter fabric shall be used to line the dewatering area and to cover the outfall pipe to further reduce sedimentation to surface waters.

12. Adequate ground cover or seeding shall be applied to the outside bank of the earthen berm immediately after constructing the berm to minimize soil runoff.

13. Overtopping of the dredge spoil containment berms with dredge spoil disposal materials post completion shall be prohibited.

G. Compensation Using an Approved In-Lieu Fund

1. The permittee shall compensate for the impacts to 0.75 acres of palustrine forested wetlands at a replacement to loss ratio of 2:1 through the contribution of $127,500.00 to the Nature Conservancy Trust Fund.

2. Documentation that the USACE has received the in-lieu fund contribution shall be submitted to DEQ-NVRO 30 days prior to the commencement of construction activities in palustrine forested wetlands.

H. Water Withdrawals

1. The maximum daily withdrawal shall not exceed 4.5 million gallons per day.

2. The intake structure shall have a 0.25 feet per second approach velocity and the intake screens shall be 1.0-mm mesh.

3. Each day that a water withdrawal occurs, the permittee shall record the date and the amount of water withdrawn on that date. The permittee shall submit an annual report containing this information by January 31st of each year for the previous calendar year.

DRAFT

Part II – General Conditions

A. Duty to comply

The permittee shall comply with all conditions of the VWP permit. Nothing in this permit shall be construed to relieve the permittee of the duty to comply with all applicable federal and state statutes, regulations and prohibitions. Any VWP permit violation is a violation of the law and is grounds for enforcement action, VWP permit termination, revocation, modification, or denial of an application for a VWP permit extension or reissuance.

B. Duty to cease or confine activity

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the activity for which a VWP permit has been granted in order to maintain compliance with the conditions of the VWP permit.

C. Duty to mitigate

The permittee shall take all reasonable steps to minimize or prevent any impacts in violation of the permit which may have a reasonable likelihood of adversely affecting human health or the environment.

D. VWP permit action

1. A VWP permit may be modified, revoked and reissued, or terminated as set forth in 9 VAC 25-210 et seq.

2. If a permittee files a request for VWP permit modification, revocation, or termination, or files a notification of planned changes, or anticipated noncompliance, the VWP permit terms and conditions shall remain effective until the request is acted upon by the board. This provision shall not be used to extend the expiration date of the effective VWP permit. If the permittee wishes to continue an activity regulated by the VWP permit after the expiration date of the VWP permit, the permittee must apply for and obtain a new VWP permit or comply with the provisions of 9 VAC 25-210-185.

3. VWP permits may be modified, revoked and reissued or terminated upon the request of the permittee or other person at the board's discretion, or upon board initiative to reflect the requirements of any changes in the statutes or regulations, or as a result of VWP permit noncompliance as indicated in A above, or for other reasons listed in 9 VAC 25-210-180.

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E. Inspection and entry

Upon presentation of credentials, any duly authorized agent of the board may, at reasonable times and under reasonable circumstances

1. Enter upon any permittee's property, public or private, and have access to, inspect and copy any records that must be kept as part of the VWP permit conditions;

2. Inspect any facilities, operations or practices (including monitoring and control equipment) regulated or required under the VWP permit, and

3. Sample or monitor any substance, parameter or activity for the purpose of ensuring compliance with the conditions of the VWP permit or as otherwise authorized by law.

F. Duty to provide information

1. The permittee shall furnish to the board any information which the board may request to determine whether cause exists for modifying, revoking, reissuing or terminating the VWP permit, or to determine compliance with the VWP permit. The permittee shall also furnish to the board, upon request, copies of records required to be kept by the permittee.

2 Plans specifications, maps, conceptual reports and other relevant information shall be submitted as required by the board prior to commencing construction.

G. Monitoring and records requirements

1 Monitoring of parameters, other than pollutants, shall be conducted according to approved analytical methods as specified in the VWP permit. Analysis of pollutants will be conducted according to 40 CFR Part 136 (2000), Guidelines Establishing Test Procedures for the Analysis of Pollutants.

2. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

3. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart or electronic recordings for continuous monitoring instrumentation, copies of all reports required by the VWP permit, and records of all data used to complete the application for the VWP permit, for a period of at least three years from the date of the expiration of a granted VWP permit. This period may be extended by request of the board at any time.

4. Records of monitoring information shall include:

   a. The date, exact place and time of sampling or measurements;

   b. The name of the individuals who performed the sampling or measurements;

   c. The date and time the analyses were performed;

   d. The name of the individuals who performed the analyses;

   e. The analytical techniques or methods supporting the information such as observations, readings, calculations and bench data used;

   f. The results of such analyses; and

   g. Chain of custody documentation.

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H. Reopener

This permit may be reopened to modify conditions to meet new regulatory standards duly adopted by the board. Cause for reopening a permit includes, but is not limited to when the circumstances on which the permit was based have materially and substantially changed, or special studies conducted by the board or the permittee show material and substantial change. since the time the permit was issued and thereby constitute cause for permit modification or revocation and re-issuance.

I. Compliance with state and federal law

Compliance with this permit constitutes compliance with the VWP permit requirements of the State Water Control Law. Nothing in this VWP permit shall be construed to preclude the institution of any legal action under or relieve the permittee from any responsibilities, liabilities. or other penalties established pursuant to any other state law or regulation or under the authority preserved by § 510 of the Clean Water Act.

DRAFT

J. Property rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize injury to private property or any invasion of personal rights or any infringement of federal, state or local law or regulation.

K. Transferability

Except as provided for under automatic transfer, a permit shall be transferred only if the permit has been modified to reflect the transfer or has been revoked and reissued to the new permittee. A permit shall be automatically transferred to a new permittee if:

1. The current permittee notifies the board within 30 days of the proposed transfer of the title to the facility or property.

2. The notice to the board includes a written agreement between the existing and proposed permittee containing a specific date of transfer of permit responsibility, coverage and liability to the new permittee, or that the existing permittee will retain such responsibility, coverage. or liability, including liability for compliance with the requirements of any enforcement activities related to the permitted activity; and

3. The board does not within the 30-day time period notify the existing permittee and the new permittee of its intent to modify or revoke and reissue the VWP permit.

L. Civil and criminal liability

Nothing in this permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

M. Unauthorized discharge of pollutants

Except in compliance with this permit, it shall be unlawful for the permittee to dredge, fill or discharge any pollutant into, or adjacent to surface waters, or otherwise alter the physical, chemical or biological properties of surface waters, excavate in wetlands, or on or after October 1, 2001, conduct the following activities in a wetland:

1. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions;

2. Filling or dumping;

3. Permanent flooding or impounding; or

4. New activities that cause significant alteration or degradation of existing wetland acreage or functions

N. Severability

The provisions of this permit authorization are severable.

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O. Any permittee with an effective VWP permit for an activity that is expected to continue after the expiration date of the VWP permit, without any change in the activity authorized by the VWP permit, shall submit written notification requesting an extension. The permittee must file the request prior to the expiration date of the VWP permit. Under no circumstances will the extension be granted for more than 15 years beyond the original effective date of the VWP permit. If the request for extension is denied, the VWP permit will still expire on its original date and, therefore, care shall be taken to allow for sufficient time for the board to evaluate the extension request and to process a full VWP permit modification, if required.

COMMONWEALTH of VIRGINIA

W. Taylor Murphy, Jr.
Secretary of Natural Resources

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

William A. Pruitt
Commissioner

July 31, 2002

RECEIVED
AUG - 2 2002

Mr. Doug Fawcett
Director of Public Works
City of Fredericksburg, et al
P.O. Box 7447
Fredericksburg, VA 22404

RE: VMRC #02-0353

Dear Mr. Fawcett:

Enclosed is the Marine Resources Commission permit for your proposal to construct a temporary stone causeway and bridge structure across the Rappahannock River immediately upstream of the Embry Dam structure, in association with the Army Corps of Engineers' Embry Dam Removal Project in the City of Fredericksburg and Stafford County.

A yellow placard is also enclosed. This placard reflects the authorized activities for inspection purposes and must be conspicuously displayed at the work site throughout the construction phase. Failure to properly post the placard in a prominent location will be considered a violation of your permit conditions.

YOU ARE REMINDED THAT ANY DEVIATION FROM THE PERMIT OR ATTACHED DRAWINGS REQUIRES PRIOR AUTHORIZATION FROM THE MARINE RESOURCES COMMISSION. FAILURE TO OBTAIN THE NECESSARY MODIFICATION WILL BE CONSIDERED A VIOLATION AND COULD SUBJECT YOU TO CIVIL CHARGES IN AMOUNTS NOT TO EXCEED $10,000 PER VIOLATION.

July 31, 2002

The work authorized by this permit is to be completed by June 18, 2005. Please note that in conformance with Special Condition 17 of your permit you are to notify the Commission prior to commencement of your permitted project. The enclosed self-addressed, stamped post card is to be used for this purpose. All other conditions of the permit will remain in effect.

Please be advised that you may also require issuance of a U. S. Army Corps of Engineers permit before you begin work on this project. You may wish to contact them directly to verify any permitting requirements.

Sincerely,

Robert W. Grabb
Chief, Habitat Management

RWG/bac
HM
Enclosure
cc: U. S. Army Corps of Engineers
Fredericksburg Wetlands Board
Stafford County Wetlands Board
Ms. Michele Cleland, Environmental Analysis Team, U. S. Army Corps of Engineers

COMMONWEALTH OF VIRGINIA
MARINE RESOURCES COMMISSION
PERMIT

The Commonwealth of Virginia, Marine Resources Commission, hereinafter referred to as the Commission, on this 18th day of June, 2002, hereby grants unto:

City of Fredericksburg
Post Office Box 7447
Fredericksburg, Virginia 22404

U.S. Army Corps of Engineers
Norfolk District
Fort Norfolk, 803 Front Street
Norfolk, Virginia 23510

hereinafter referred to as the Permittee, permission to:

_X_ Encroach in, on, or over State-owned subaqueous bottoms pursuant to Chapter 12, Subtitle III, of Title 28.2 of the Code of Virginia.

____ Use or develop tidal wetlands pursuant to Chapter 13, Subtitle III, of Title 28.2 of the Code of Virginia.

Permittees are hereby authorized to construct a temporary stone causeway and bridge structure across the Rappahannock River immediately upstream of the Embry Dam structure, in association with the Army Corps of Engineers' Embry Dam Removal Project in the City of Fredericksburg and Stafford County. All activities authorized herein shall be accomplished in conformance with the plans and drawings dated received, February 28, 2002, which are attached and made a part of this permit.

This permit is granted subject to the following conditions:

(1) The work authorized by this permit shall be completed by June 18, 2005. The Permittee shall notify the Commission when the project is completed. The completion date may be extended by the Commission in its discretion. Any such application for extension of time shall be in writing prior to the above completion date and shall specify the reason for such extension and the expected date of completion of construction. All other conditions remain in effect until revoked by the Commission or the General Assembly.

(2) This permit grants no authority to the Permittee to encroach upon the property rights, including riparian rights, of others.

(3) The duly authorized agents of the Commission shall have the right to enter upon the premises at reasonable times, for the purpose of inspecting the work being done pursuant to this permit.

(4) The Permittee shall comply with the water quality standards as established by the Department of Environmental Quality, Water Division, and all other applicable laws, ordinances, rules and regulations affecting the conduct of the project. The granting of this permit shall not relieve the Permittee of the responsibility of obtaining any and all other permits or authority for the projects.

(5) This permit shall not be transferred without written consent of the Commissioner.

(6) This permit shall not affect or interfere with the right vouchsafed to the people of Virginia concerning fishing, fowling and the catching of and taking of oysters and other shellfish in and from the bottom of acres and waters not included within the terms of this permit.

(7) The Permittee shall, to the greatest extent practicable, minimize the adverse effects of the project upon adjacent properties and wetlands and upon the natural resources of the Commonwealth.

(8) This permit may be revoked at any time by the Commission upon the failure of the Permittee to comply with any of the terms and conditions hereof or at the will of the General Assembly of Virginia.

(9) There is expressly excluded from the permit any portion of the waters within the boundaries of the Daylor Survey.

(10) This permit is subject to any lease of oyster planting ground in effect on the date of this permit. Nothing in this permit shall be construed as allowing the Permittee to encroach on any lease without the consent of the leaseholder. The Permittee shall be liable for any damages to such lease.

(11) The issuance of this permit does not confer upon the Permittee any interest or title to the beds of the waters.

(12) All structures authorized by this permit which are not maintained in good repair shall be completely removed from State-owned bottom within three (3) months after notification by the Commission.

(13) The Permittee agrees to comply with all of the terms and conditions as set forth in this permit and that the project will be accomplished within the boundaries as outlined in the plans attached hereto. Any encroachment beyond the limits of this permit shall constitute a Class 1 misdemeanor.

(14) This permit authorizes no claim to archaeological artifacts which may be encountered during the course of construction. If, however, archaeological remains are encountered, the Permittee agrees to notify the Commission, who will, in turn notify the Department of Historic Resources. The Permittee further agrees to cooperate with agencies of the Commonwealth in the recovery of archaeological remains if deemed necessary.

(15) The Permittee agrees to indemnify and save harmless the Commonwealth of Virginia from any liability arising from the establishment, operation or maintenance of said project.

The following special conditions are imposed on this permit.

(16) The yellow placard accompanying this permit document must be conspicuously displayed at the work site throughout the construction phase of the authorized activity.

(17) Permittees agree to notify the Commission a minimum of 15 days prior to the start of the construction activities authorized by this permit.

(18) The Virginia Erosion and Sediment Control Handbook (3rd Ed., 1992) will be followed throughout construction.

(19) The temporary stone causeway and bridge structure will be removed, in their entirety, and disposed of in an upland location following the completion of the Embry Dam Removal Project.

(20) Permittees agree to coordinate with the Department of Game and Inland Fisheries, concerning time of year restrictions to protect spawning anadromous fish

(21) Permittees agree to coordinate with the Department of Conservation and Recreation and the Rappahannock Scenic River Advisory Board in the development of final plans for the restoration of the river corridor in the vicinity of the project.

VMRC #02-0353

A permit issuing fee of: $100.00

A royalty fee of: N/A Governmental Exemption

for a total of $100 00 This permit consists of 8 sheets

PERMITTEE

Permittee's signature is affixed hereto as evidence of acceptance of all of the terms and conditions herein.

In cases where the Permittee is a corporation, agency or political jurisdiction, please assure that the individual who signs for the Permittee has proper authorization to bind the organization to the financial and performance obligations which result from activity authorized by this permit.

PERMITTEE

Accepted for City of Fredericksburg, Virginia

22nd day of July, 2002 By _____ (Name) _____ (Title)

Marvin S. Bolinger, City Manager

State of Virginia

City ~~(or County)~~ of Fredericksburg, to-wit

I, Debra H Rose, a Notary Public in and for said City (or County) and State hereby certify that Marvin S. Bolinger, Permittee, whose name is signed to the foregoing, has acknowledged the same before me in my City (or County) and State aforesaid

Given under my hand this 22nd day of July, 2002

My Commission Expires: January 31, 2004

Notary Public Debra H Rose

(I was commissioned Debra H Rose)

COMMISSION

IN WITNESS WHEREOF, the Commonwealth of Virginia, Marine Resources Commission has caused these presents to be executed in its behalf by Robert W. Grabb, Chief, Habitat Management

(Name) (Title) Marine Resources Commission

31st day of July, 2002 by _____

State of Virginia

City of Newport News, to wit:

I, Barbara A. Cundiff, a Notary Public within and for said City, State of Virginia, hereby certify that Robert W. Grabb, whose name is signed to the foregoing, bearing the 18th of June, 2002, has acknowledged the same before me in City aforesaid

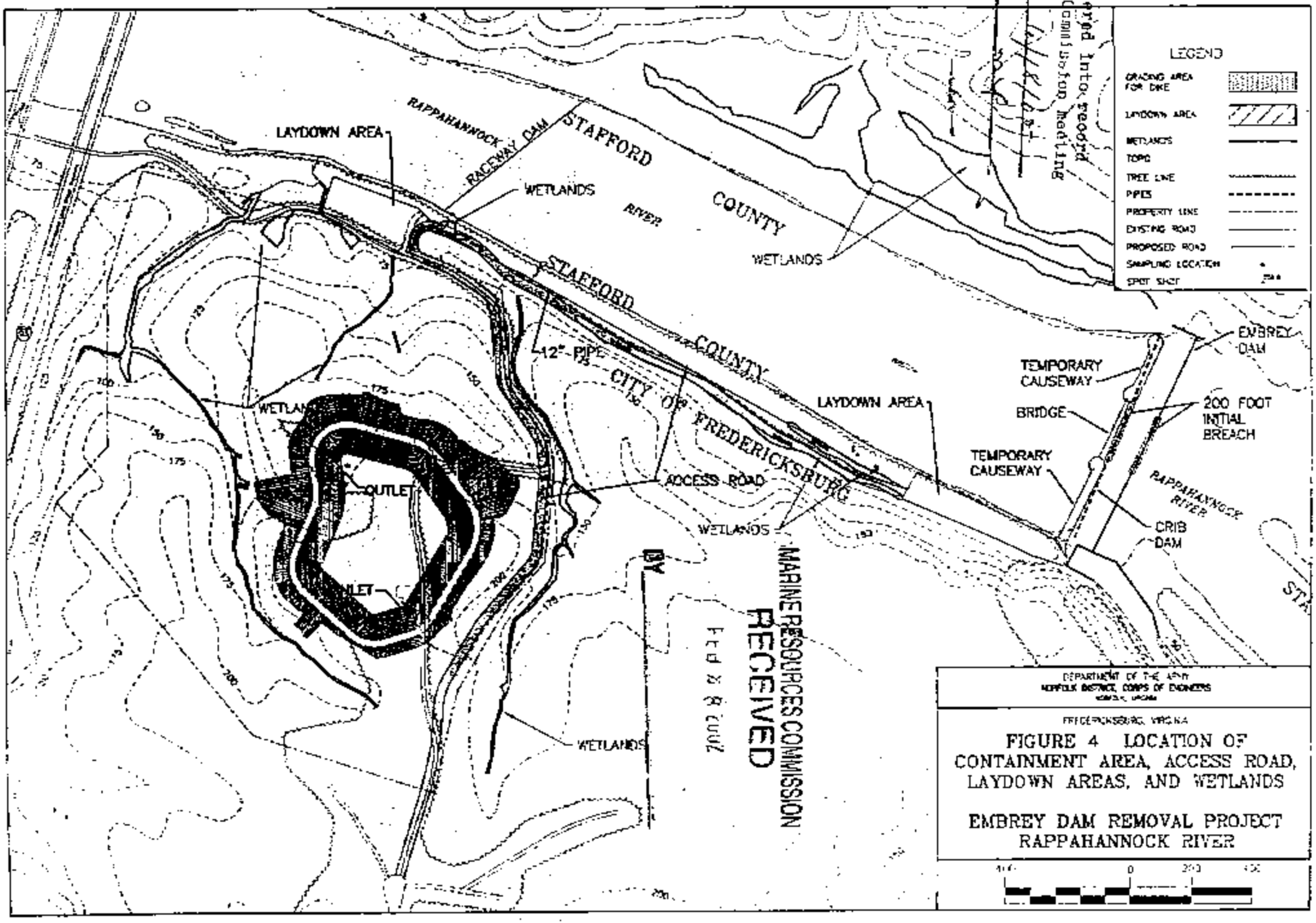
Given under my hand this 31st day of July, 2002

My Commission Expires: 4-30-2003

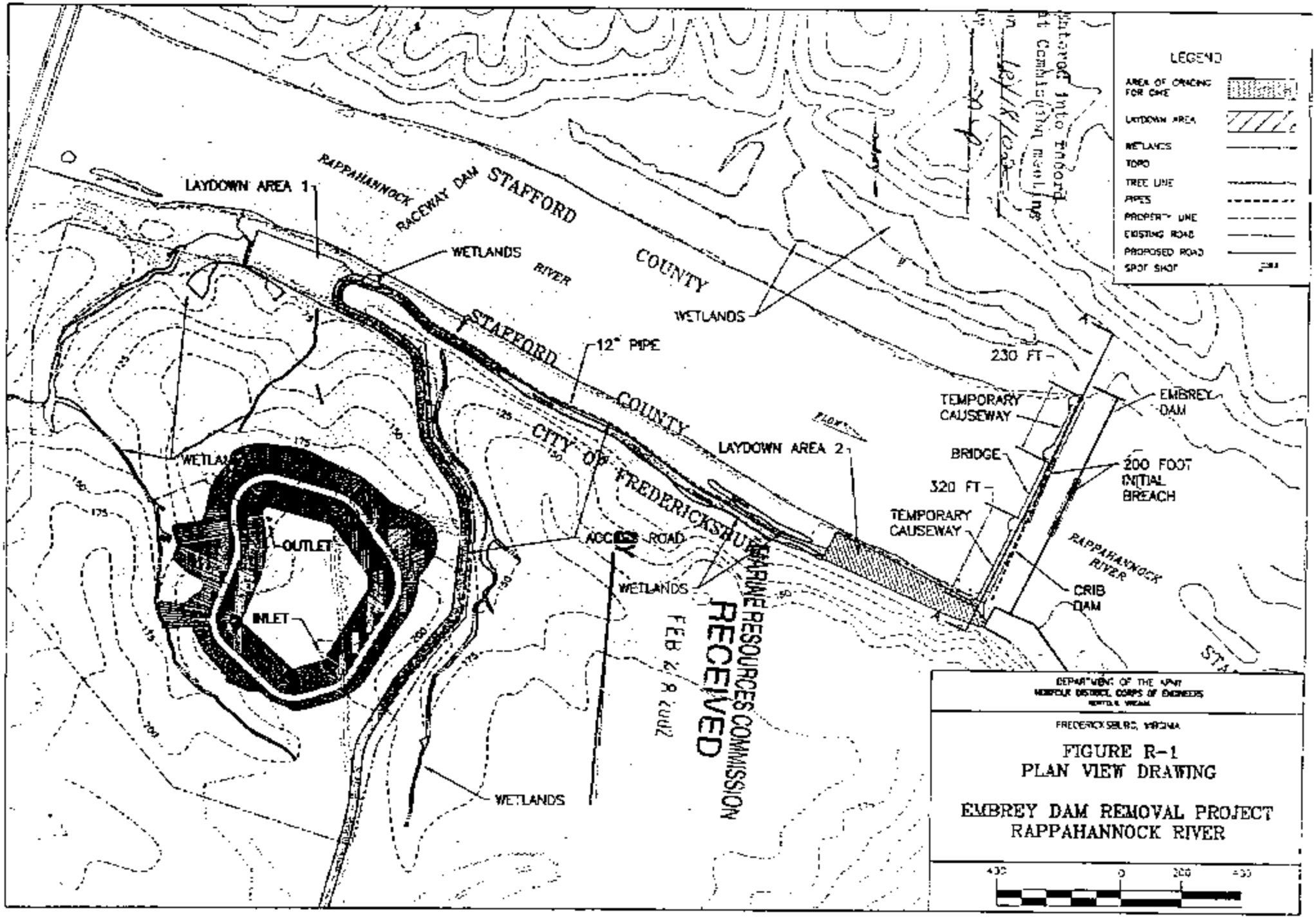
Notary Public Barbara A. Cundiff

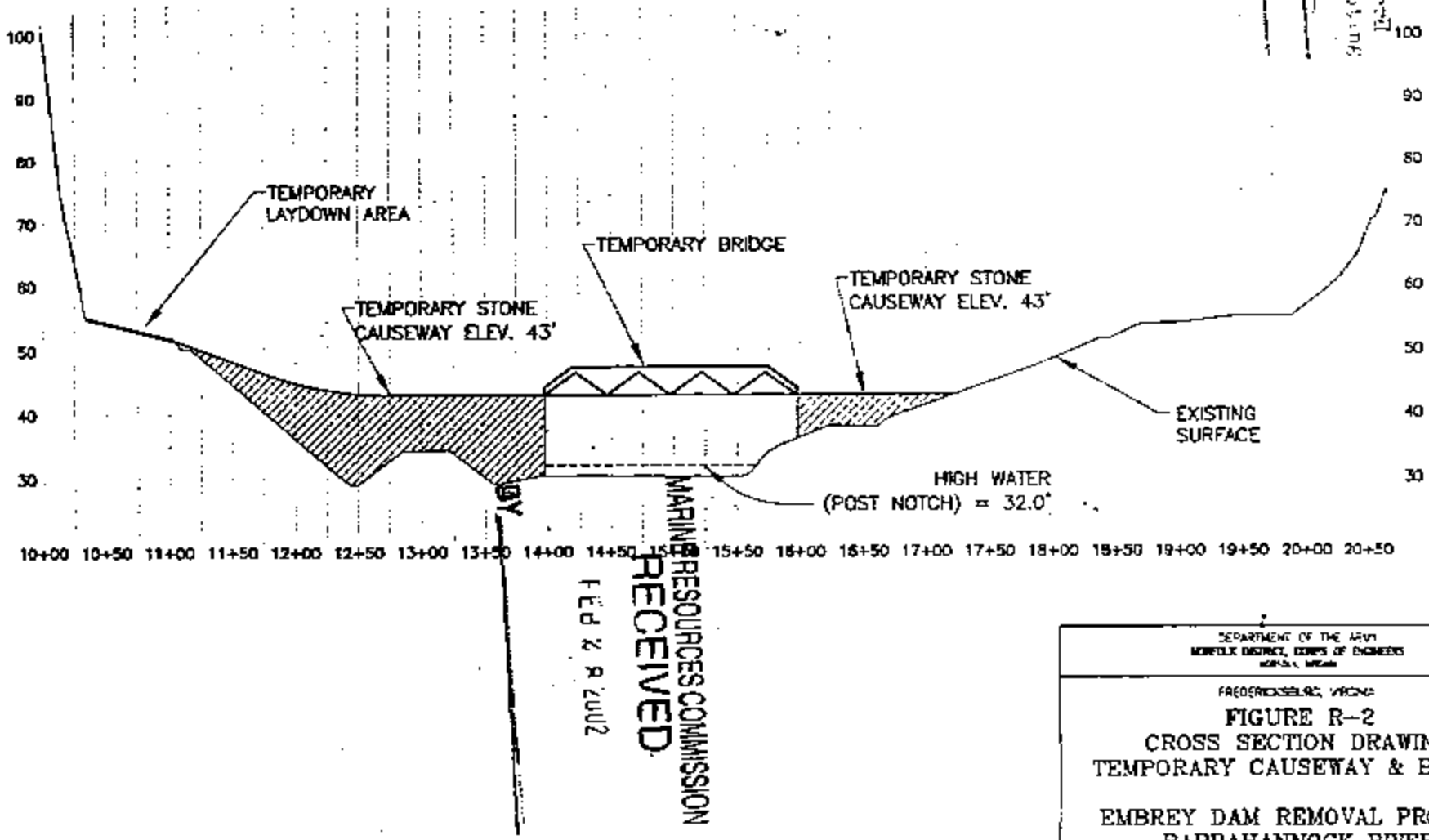
Entered into record
at Commission meeting
on 6/18/02
by

Figure 3. USGS TOPO VICINITY MAP
EMBREY DAM REMOVAL PROJECT



Entered into record at Commission meeting on
MARINE RESOURCES COMMISSION
RECEIVED
FEB 28 2002


LEGEND
AREA OF GRADING FOR DAM
LAYDOWN AREA
WETLANDS
TOPO
TREE LINE
PIPES
PROPERTY LINE
EXISTING ROAD
PROPOSED ROAD
SPOT SHOT
LAYDOWN AREA 1
RAPPAHANNOCK RACEWAY DAM
STAFFORD COUNTY
RIVER
WETLANDS
12" PIPE
CITY OF FREDERICKSBURG
LAYDOWN AREA 2
FLOW
230 FT
TEMPORARY CAUSEWAY
EMBREY DAM
BRIDGE
200 FOOT INITIAL BREACH
320 FT
TEMPORARY CAUSEWAY
CRIB DAM
RAPPAHANNOCK RIVER
OUTLET
INLET
ACCESS ROAD
WETLANDS
WETLANDS
MARINE RESOURCES COMMISSION
RECEIVED
FEB 2 8 2002
DEPARTMENT OF THE ARMY
NORFOLK DISTRICT, CORPS OF ENGINEERS
NORFOLK, VIRGINIA
FREDERICKSBURG, VIRGINIA
FIGURE R-1
PLAN VIEW DRAWING
EMBREY DAM REMOVAL PROJECT
RAPPAHANNOCK RIVER
400
0
200
400



MARINE RESOURCES COMMISSION
RECEIVED
FEB 2 8 2002

DEPARTMENT OF THE ARMY
NORFOLK DISTRICT, CORPS OF ENGINEERS
NORFOLK, VIRGINIA

FREDERICKSBURG, VIRGINIA

FIGURE R-2
CROSS SECTION DRAWING
TEMPORARY CAUSEWAY & BRIDGE

EMBREY DAM REMOVAL PROJECT
RAPPAHANNOCK RIVER

125 0 62.5 125

2. Appendix R- Road Crossing

The proposed bridge is a temporary causeway and bridge to allow removal of the existing dam. The dam cannot be removed without access to work in the Rappahannock River and therefore, a causeway will need to be constructed to cross the river.

The design will be built to a 43 foot elevation to keep the road at the level of the 1 year storm. The causeway will be built from Class I stone with the outer five feet being Class II stone to resist the effects of river velocity during high water events. The stone will be choked with smaller stone such as #57 stone to create a driving surface for large trucks and construction equipment. Four 100-foot turning radius areas will also be provided to allow equipment to pass and turn (Figure R-1).

A way for water to escape will have to be provided as the causeway will act as a dam if it blocks all or part of the flow of the river. The Rappahannock River tends to rise and fall rapidly, making it very difficult to size culverts that would allow water to flow below the surface of the causeway. Therefore, a 200-foot span bailey type bridge will be provided (a steel truss bridge for use in temporary water crossings). The bridge should be built to withstand 12 cfs velocity (100-year flood event), the weight of heavy construction equipment, and complete inundation. It is expected that the causeway may require some repair after any high water event. The causeway and bridge will be removed in their entirety at the end of the project.

FEB 2 8 2002

Permit # 02-0353

Commonwealth of Virginia
Marine Resources Commission
Authorization

A Permit has been issued to:

City of Fredericksburg
Post Office Box 7447
Fredericksburg, Virginia 22404

U.S. Army Corps of Engineers
Norfolk District
Fort Norfolk, 803 Front Street
Norfolk, Virginia 23510

The Permittee is hereby authorized to:

construct a temporary stone causeway and bridge structure across the Rappahannock River immediately upstream of the Embry Dam structure, in association with the Army Corps of Engineers' Embry Dam Removal Project in the City of Fredericksburg and Stafford County.

Issuance Date: June 18, 2002 Expiration Date: June 18, 2005

Commissioner or Designee

This Notice Must Be Conspicuously Displayed At Site Of Work

SECTION 01451

CONTRACTOR QUALITY CONTROL
08/02

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	(1996) 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	(1995b) 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 that complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence.

3.2 QUALITY CONTROL PLAN

3.2.1 General

Prior to start of the scheduled work operations, the Contractor shall furnish his CQC plan to the COR for acceptance. The CQC Plan the Contractor proposes to implement shall identify the personnel, procedures,

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instructions, records, and forms, and, as a minimum, shall include:

a. A description of the quality control organization, including a chart showing lines of authority by name with duties and responsibilities of their respective position, qualifications (in resume format), and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified.

b. The number, classifications, qualifications, duties, responsibilities and authorities of personnel. A copy of the letter, signed by an authorized official of the firm, which describes the responsibilities and delegates the 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, and shall furnish copies to the Government at the same time.

c. Control, verification and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person or laboratory responsible for each test (laboratory facilities will be approved by the CO).

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

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

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

g. Reporting procedures, including proposed reporting formats.

h. 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 feature under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of 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.

3.2.3 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

As soon as practicable after receipt of Notice to Proceed (NTP) and before start of the scheduled work, 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 Contractor's Project Manager, Submittals Clerk and Quality Control Manager, Dredge Captain and Plant Operators, and the Surveyor or Engineer to be employed by the Contractor to perform all surveys and layout of the work required of the Contractor shall attend this meeting. The Contractor is encouraged to have an officer of his company and representation from any major subcontractors at the conference. The CQC Plan shall be submitted for review a minimum of 14 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 offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings, to address deficiencies in the CQC system, or clarify 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 sufficient number of additional qualified personnel to ensure contract compliance. The Contractor shall provide a CQC organization that shall be at the site at all times during progress of the work and with complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to interview and acceptance by the Contracting Officer or his designated representative.

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 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 quality requirements specified in the contract. The CQC System Manager shall be:

a. A graduate engineer, graduate architect, graduate of construction management, or an experienced construction management person with a minimum of five years experience in dredging and placement area preparation work similar in magnitude and duration to this contract. This experience shall include work in river environments with elevated placement areas, dike construction and earthwork operations in isolated areas with limited access and egress availability, and compliance with environmental requirements in the Commonwealth of Virginia.

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 Additional Requirement

In addition, this experience shall include successful completion of Course entitled "Construction Quality Management for Contractors". The Contractor and his designated CQC staff shall complete this training within 30 calendar days of receipt of his Notice To Proceed. This course is offered periodically by the Corps of Engineers at an administrative cost not to exceed $50.00 per person. Specific times and locations are available from the Norfolk District, Construction Operations Section, telephone (757) 441-7687.

3.4.4 Organizational Changes

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

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of

control shall be conducted by the CQC System Manager for each definable feature of 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 the paragraphs 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 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, excluding non-workdays, in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The time and date of

the preparatory phase meeting shall be coordinated with the Progress Schedule. 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 each definable feature of work. The following shall be accomplished:

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

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

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

d. Resolve all differences.

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

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

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

3.6.3 Follow-up Phase

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

3.6.4 Additional Preparatory and Initial Phases

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

resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with contract requirements.

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

c. Check test instrument calibration data against certified standards.

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

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

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

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

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will

be assessed a charge 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.

3.8 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 that do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

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

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer, user groups, and local and state government 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. Offsite surveillance activities, including actions taken.

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

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

i. 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. 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 enclosed at the end of this section.

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.

3.12 ATTACHMENTS

SECTION 01451 ATTACHMENT NO.1
GUIDE FOR LISTING DEFINABLE FEATURES OF CONSTRUCTION WORK

****** Contractor shall modify this guide to accommodate the project *****

DIVISION 1 - GENERAL REQUIREMENTS

(a) Special Project procedures to include coordination of work, Project meetings, Submittals and Quality Control
(b) Administrative Requirements
(c) Environmental Protection
(d) Historic Preservation
(e) Job Conditions

DIVISION 2 - SITE WORK

(a) Demolition
(b) Removal and Disposal of Asbestos Materials
(c) Excavation, Trenching and Backfilling for Utilities Systems to include sewer gravity drainage and water lines
(d) Clearing and Grubbing, Backfilling for Buildings
(e) Grading
(f) Fence, Chain-Link
(g) Concrete for sidewalks and Curbs
(h) Drilled Pile Foundation
(i) Bituminous Paving
(j) Underground Sprinkler Systems

DIVISION 3 - CONCRETE

(a) Concrete Materials, Concrete Procedures, Concrete Formwork, Forms, Form Ties and Accessories, Concrete Reinforcement, Concrete Accessories to Include Cast-in-Place Concrete, Specially Placed Concrete, Concrete Finishing, Concrete Curing and Grouting
(b) Concrete Restoration and Cleaning
(c) Precast Concrete
(d) Electrical and Mechanical Inserts
(e) Testing
(f) Approval of Samples

DIVISION 4 - MASONRY

(a) Masonry Procedures, Mortar, Mortar Accessories, Unit Masonry, Cavity Wall Construction to Include Bringing Inner and Outer Wythes Up Simultaneously, Reinforcement, Wall Ties, Flashing, Masonry Restoration and Cleaning
(b) Acceptance of Sample Panel for Cavity Wall Construction
(c) Composite Wall Construction
(d) Acceptance of Sample Panel for Composite Wall Construction
(e) CMU Partition Wall Construction to Include Prepared Openings for Ducts, Fire Dampers, Door Frames, Lintels and Bond Beams

(f) Acceptance of CMU Partition Wall Sample Panel
(g) Insulation and Waterproofing
(h) Testing

ATTACHMENT NO.1 (continued)
DIVISION 5 - METALS

(a) Structural Steel Framing To Include Metal Materials and Methods, Metal Fastening, Metal Joints, Welding, Expansion Control and Miscellaneous Metals
(b) Steel Roof Decking
(c) High Strength Bolts

DIVISION 6 - WOODS AND PLASTICS

(a) Rough Carpentry To Include Framing, Prefabricated Structural Wood, Fasteners and Supports, Roof Sheeting, Siding and Sub-Flooring, Insulation and Flashing (b) Finish Carpentry To Include Wood Treatment, Finish Flooring, Cabinets and Closets

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

(a) Damproofing and Waterproofing
(b) Fireproofing
(c) Insulation, Flashing and Sheet Metal, Roof Accessories, Sealants, Shingles, Roof Tiles and Membrane Roofing (Built-Up and EPDM)

DIVISION 8 - DOORS AND WINDOWS

(a) Metal Doors and Frames, Wood and Plastic Doors, Special Doors, Door Opening Assemblies, Metal Windows, Wood and Plastic Windows, Special Windows, Glazing and Miscellaneous Hardware, Caulking

DIVISION 9 - FINISHES

(a) Ceramic Tile
(b) Gypsum Wallboard To Include Special Framing, Shaft Wall Framing System, Ceiling and Wall Opening
(c) Acoustical Treatment to include Metal Suspension System for Acoustical Tile and Lay-In-Panel Ceiling
(d) Wall Covering
(e) Carpeting
(f) Resilient Flooring
(g) Painting
(h) Furring (Metal)
(i) Plastering

DIVISION 10 - SPECIALTIES

(a) Metal Toilet Partitions
(b) Raised Floor System
(c) Movable Partitions
(d) Wardrobe
(e) Fire Extinguisher Cabinets
(f) Toilet Accessories

ATTACHMENT NO.1 (continued)
DIVISION 11 - EQUIPMENT

(a) Fueling System for Motor Vehicles
(b) Adjustable Loading Ramps
(c) Incinerator, Packaged Controlled Air
(d) Incinerator, Medical Waste, General Purpose, Field Erected
(e) Food Service Equipment
(f) Government Furnished Equipment

DIVISION 12 - FURNISHINGS

(a) Theater Chairs
(b) Blinds
(c) Drapes
(d) Lockers
(e) Training Equipment
(f) Furniture and Accessories
(g) Rugs and Mats
(h) Fabrics

DIVISION 13 - SPECIAL CONSTRUCTION

(a) RF Shielding
(b) Sky Lights
(c) Swimming Pool
(d) Energy Monitoring and Control System (EMCS)
(e) Pre-Engineered Structures
(f) Liquid and Gas Storage Tanks
(g) Vaults

DIVISION 14 - CONVEYING SYSTEMS

(a) Shaft Construction To Include Guides and Guide Rails
(b) Car Assembly
(c) Machine Room Layout
(d) Entrances
(e) Operating and Signal Devices
(f) Fire/Emergency Power Operations
(g) Lighting, Power and Wiring
(h) Elevator Power Unit
(i) Acceptance Testing To Include Communications, Safety, Weights, Emergency and Fire Operations, Dispatch System

DIVISION 15 - MECHANICAL

(a) Insulation to Include:
(1) Pipes
(2) Ducts
(3) Equipment
(4) High Density Inserts, Insulation Protective Shields, Clips or U Bolt Supports for Multiple Pipe Hanger Supports
(5) Perimeter Insulation

ATTACHMENT NO. 1 (continued)

(b) Plumbing Systems
- (1) Waste/Vent Piping To Include: Underground Soil Piping, Above Ground Soil Piping
- (2) Interior Piping Rough-In To Include: Galvanized Black Iron and Copper Including Drains, Fittings, Valves and Piping Supports
- (3) Plumbing Fixtures To Include Flush Valves, Faucets and Accessories
- (4) Cleaning, Balancing and Operational Testing

(c) Heating systems
- (1) Equipment and System Accessories
- (2) Hot Water/Steam Piping Supports
- (3) Fuel Oil/Gas Piping and Supports
- (4) System Testing and Balancing

(d) Air Distribution Systems
- (1) Equipment and Accessories
- (2) Duct Work To Include Galvanized, Aluminum, Flexible and Fiberglass, Supports, Dampers, Louvers, Diffusers, Duct Line Supports and Fire-Dampers

(e) Refrigeration Systems
- (1) Equipment and Accessories
- (2) Chilled Water/Condenser Water Piping and Supports
- (3) Refrigerant Piping and Supports
- (4) System Testing

(f) Automatic Temperature Control Systems
- (1) Equipment and Materials
- (2) Installation of Materials and Equipment
- (3) System Testing

(g) Underground Heat Distribution Systems
- (1) Manholes
- (2) Piping and Supports
- (3) Cathodic Protection

(h) Sprinkler Systems
- (1) Equipment
- (2) Piping and Supports
- (3) Accessories

(i) Water Treatment Systems

(j) Welding - Piping Systems

DIVISION 16 - ELECTRICAL

(a) Exterior Electrical Distribution, Aerial
- (1) Pole Setting
- (2) Placement of Crossarms, Pins, Insulators, Pole Line Hardware and Conductors
- (3) Placement of Fuse Cutouts, Surge Arresters, Reclosers, Potheads, Pole Mounted Transformers to Include Grounding Conductors, Testing and Cable Terminations

(b) Exterior Electrical Distribution, Underground
- (1) Duct Line Excavation, Placement of Ducts and Misc. Materials
- (2) Placement of In Ground Junction or Pull Boxes and Manholes
- (3) Placement of Duct Bank Concrete Encasement
- (4) Transformer Pad Placement
- (5) Mounting of Pad Mounted Transformers

ATTACHMENT NO.1 (continued)

(6) Cable Placement to Include Splicing, Fire-Proofing and Cable Terminations

(7) Grounding Conductors and Testing

(c) Electrical Distribution, Interior

(1) Wiring Methods to Include Conduit Rough-in, Raceway Boxes, Outlet Boxes, Panelboard Cabinets, Placement of Conductors and Conduit Placement Below the Slab for Slab-On-Grade Construction

(2) Wiring Devices, Panelboards, Switch-Boards and Lighting Fixtures

(3) Motors and Transformers

(4) Testing

(d) Fire Detection and Alarm System

(1) Wiring Methods to Include Conduit, Ground Rods, Detectors, Control Panels, Power Supply, Door Holders, Audible Fire Alarm and Annunciator Panel

(2) Testing

---End of Attachment No.1---

SECTION 01451 ATTACHMENT NO.2
PREPARATORY PHASE CHECKLIST

CONTRACTOR'S NAME (Address)

Contract No.:_____ Date Preparatory Held:_____

Title: _____ Spec Section:_____

_____ Drawing No(s):_____

Definable Feature of Work:_____

_____

A. PERSONNEL PRESENT:

	Name	Position	Company
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

(List additional personnel on reverse side)

B. DRAWINGS AND SPECS:

I. Has each spec paragraph, contract drawing, and shop drawing been studied? YES _____ NO _____

II. Do all parties have up-to-date drawings and specifications? YES _____ NO_____

C. SHOP DRAWINGS INVOLVED:

	Transmittal/Item	Code	Cont'r or Gov't Approval
1.			
2.			
3.			

4._____ _____ _____

ATTACHMENT NO.2 (continued)

D. MATERIALS:

I. Are all materials on hand? YES _____ NO _____

II. Have all materials been checked for contract compliance against approved shop drawings? YES _____ NO _____

III. Items not on hand or not in accordance with transmittals (if not on hand, check during initial phase):

1. _____

2. _____

3. _____

4. _____

E. TESTS required in accordance with contract requirements:

	Test/Paragraph	Frequency
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____

F. ACCIDENT PREVENTION: Has Hazard Analysis been completed?
YES _____ NO _____
If yes, attach a copy, if no, explain:

_____

_____

_____

_____

_____

ATTACHMENT NO.2 (continued)

G. EQUIPMENT Requiring Operational Check:

1._____

2._____

3._____

4._____

H. WORKMANSHIP: Have procedures for accomplishing work been reviewed with appropriate people? YES _____ NO _____

I. PREVIOUS WORK: Has all preliminary work been accomplished in accordance with contract requirements and is this feature of work ready to start? YES _____ NO _____

Explain any problems: _____

_____

_____

_____

J. HI-LIGHTING SPECIFIC ITEMS: Hi-light specific items noted during the Preparatory Phase inspection. ie, (Med. Voltage cable shall be hi-pot tested).

K. OTHER COMMENTS: _____

_____

_____

_____

_____
Quality Control Representative
Signature

SECTION 01451 ATTACHMENT NO.3
INITIAL PHASE CHECKLIST

CONTRACTOR'S NAME (Address)

Contract No.:_____ Date Initial Held: _____

Title:_____ Spec Section:_____

Drawing No(s).:_____

Definable Feature of Work:_____

_____

_____

A. PERSONNEL PRESENT:

Name	Position	Company
1._____	_____	_____
2._____	_____	_____
3._____	_____	_____
4._____	_____	_____

B. MATERIALS being used are in strict accordance with the contract plans and specifications? YES _____ NO _____

If not, explain:_____

_____

_____

_____

ATTACHMENT NO.3 (continued)

C. WORKMANSHIP:

I. Procedures and/or work methods witnessed are in strict compliance with the requirement of the contract specifications? YES _____ NO _____

If not, explain: _____

_____

_____

II. Workmanship is acceptable? YES _____ NO _____

State area where improvement is needed: _____

_____

_____

D. SAFETY violations and corrective action taken:_____

_____

_____

E. COMMENTS: _____

_____

_____

_____

_____

_____

Quality Control Representative
Signature

SECTION 01451 ATTACHMENT NO.4
DAILY CONSTRUCTION QUALITY CONTROL REPORT
(Sample of Typical Contractor Daily Quality Control Report)

CONTRACTORS NAME (Address)

Date _____ Report No. _____
Contract No. DAC( ) 65-__-C-_____
Project Name and Location of work: _____

Weather:[Clear] [P.Cloudy] [Cloudy] [Rain: ___ inches]
[Temp.____min.____max.] Other Weather Conditions _____

1. Contractor (C) or Sub-contractor (S), and Area of Responsibility:

a. ( )_____

b. ( )_____

c. ( )_____

d. ( )_____

2. Equipment Data. (Indicate items of construction equipment, other than hand tools, at the job site and whether or not used):

_____
_____
_____
_____

3. Work Performed Today (Indicate identity of Contractor and Sub-contractors, location , and description of work:

_____
_____
_____
_____

4. Results of Surveillance: (Include satisfactory work completed, or deficiencies with action to be taken):

a. Preparatory Phase:_____
_____
_____

b. Initial Phase:_____
_____
_____

c. Follow-up Phase:_____
_____
_____
_____

DAILY CONSTRUCTION QUALITY CONTROL REPORT (Continued)

5. Tests performed as required by plans and specifications and the results:

_____
_____
_____

6. Verbal instructions received (List instructions given by Government personnel on construction deficiencies, retesting required, etc. Include the name of Government person, time and place instructions given, and action taken to comply:

_____
_____
_____

7. Job Safety (Include deficiencies and corrective action taken:

_____
_____
_____

8. Equipment Data (Indicate items of construction equipment, other than hand tools, at the job site, and whether or not used):_____
_____
_____

9. Material and equipment items that arrived at the job site. Indicate compliance or non-compliance of these items with approved shop drawings, the contract plans and specifications, and the storage of the item is required prior to the time of installation, indicate how this storage was provided and whether or not it is adequate:_____
_____
_____

10. Remarks (Cover any conflicts in the plans and specifications, instructions, or delays):_____
_____
_____

CONTRACTOR'S VERIFICATION: THE ABOVE REPORT IS COMPLETE AND ALL DATA LISTED IS CORRECT. ALL MATERIALS PROVIDED, EQUIPMENT USED, AND WORKMANSHIP FOR THIS REPORTING PERIOD ARE IN COMPLIANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS EXCEPT AS NOTED ABOVE.

SIGNED

_____ CONTRACTOR'S QC SYSTEM MANAGER

SECTION 01451 ATTACHMENT NO.4
DAILY CONSTRUCTION QUALITY CONTROL REPORT (RMS QC)

CONTRACTORS QUALITY CONTROL REPORT (QCR)
DAILY OG OF CONSTRUCTION - MILITARY REPORT NUMBER
1 PAGE 1 DATE
10 MAR 02 - Tuesday
PROJECT

Sample Project Phase 1 Embrey Dam Removal Project, Fredericksburg, Virginia
CONTRACT NUMBER DACW65-03-C-XXXX
CONTRACTOR

WEATHER No Weather Reported

QC NARRATIVES(S)

Activities in Progress:
Include comments here.
Did anything develop that may lead to a Change Order/Claim?
No
Safety Inspection / Safety Meeting:
Include meetings here.

Safety: Inspections made, Deficiencies noted):
Include safety inspections and safety deficiencies here.

Safety: Correction Action taken:
Corrective Action

Verbal Instructions given by Government:
Include instructions here.

Were there any Delays in Work Progress today?
None.
PREP/INITIAL DATES (Preparatory and initial dates held and advance notice)

No preparatory or initial inspections were held today.
ACTIVITY START/FINISH

No activities were started or finished today.
QC REQUIREMENTS

No QC requirements were completed today.

CONTRACTORS QUALITY CONTROL REPORT (QCR)

DAILY OG OF CONSTRUCTION - MILITARY REPORT NUMBER

1 PAGE 2 DATE 10 Mar 02 - Tuesday
PROJECT
Sample Project Embrey Dam Removal Project, Fredericksburg, Virginia
CONTRACT NUMBER

DACW65-02-C-XXXX
QA/QC COMMENT**S** (Describe QC comments issued, report QA and QC comments corrected)

No QC comments were issued today.
CONTRACTORS ON SITE(Report contractor's first and/or last date on site)

No contractors were reported on site today.
LABOR HOURS

No labor hours were reported today.
EQUIPMENT HOURS

No equipment hours were reported today.
EQUIPMENT CHECKS

No equipment inspections were conducted today.
SAFETY CORRECTIONS (Report corrective actions for safety violations)

No outstanding safety violations.

CONTRACTOR CERTIFICATION: On behalf of the contractor, I certify that this report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above. QC REPRESENTATIVE'S SIGNATURE
DATE

SUPERINTENDENT'S INITIALS _____
DATE _____

SECTION 01451 ATTACHMENT NO.5
TEST REPORT

CONTRACTOR'S NAME (Address)

STRUCTURE OR BUILDING_____
CONTRACT NO._____

DESCRIPTION OF ITEM, SYSTEM OR PART OF SYSTEM TESTED:_____
_____
_____
_____
_____

DESCRIPTION OF TEST:_____
_____
_____
_____
_____

NAME AND TITLE OF PERSON IN CHARGE OF PERFORMING TESTS FOR CONTRACTOR:

NAME_____

TITLE_____

SIGNATURE_____

I HEREBY CERTIFY THAT THE ABOVE DESCRIBED ITEM, SYSTEM OR PART OF SYSTEM HAS BEEN TESTED AS INDICATED ABOVE AND FOUND TO BE ENTIRELY SATISFACTORY AS REQUIRED IN THE CONTRACT SPECIFICATIONS.

SIGNATURE OF CONTRACTOR QUALITY CONTROL INSPECTOR

_____

DATE_____

REMARKS:_____
_____

SECTION 01451: ATTACHMENT NO. 6
DEFICIENCY TRACKING LOG

Construction Deficiency: _____

Contract No.

Safety Deficiency: _____

Project Title:

Date Reported

Reported By
Deficient Work

Description of Corrective Action Taken
Date Corrected
Verified By

-- End of Section --

SECTION 01500
TEMPORARY CONSTRUCTION FACILITIES

08/02

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Site Plan

The Contractor Lay-Down Area is indicated on the contract drawings. The Contractor shall prepare a site plan indicating his proposed operations for use of this location. The Plan shall indicate the proposed location and dimensions of any areas to be used by the Contractor, the type of facilities to be used, avenues of ingress/egress to the areas, and details of installation. The actual location of Contractor storage, staging, toilet facilities, employee parking, and any office areas the Contractor may wish to utilize are subject to the approval of their location in the Site Plan by the Contracting Officer. Any toilet facilities used shall be fully self-contained.

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.

1.2 AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1 Utility Services

The Contractor is informed that utility services are not available in the work area and any such use or need by the Contractor shall be at his expense.

1.2.2 Telephone

The Contractor shall make arrangements and pay all costs for telephone facilities desired.

1.3 BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.3.1 Bulletin Board

Prior to commencing any placement operations, the Contractor shall provide

a weatherproof 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 documents, Wage Rate Information poster, and other information as may be required by the Contracting Officer. The bulletin board shall be located at the Contractor staging area in a conspicuous place, easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the data required as specified shall be displayed until work under this contract is completed. Upon completion of work the bulletin board shall be removed by and at the expense of the Contractor.

1.3.2 Project and Safety Signs

The requirements for the information to be displayed on the signs, sign content format, and location where signs are to be installed shall be as designated on the sample sign pages included at the end of this Section and approved by the Contracting Officer. The signs shall be erected prior to commencement of any work on the site. The lettering provided on the signs shall be printed graphics of light colored metallic or non-metallic numerals and letters that are reflective. Safety Sign content shall be updated with corrections daily. Upon completion of the project, the signs shall be removed by and at the expense of the Contractor.

1.3.3 Sign Erection Requirements

All signs shall be erected in accordance with the requirements as indicated on the Sign Erection Plan that is included at the end of this section.

1.3.4 Payment

All costs for providing and maintaining the signs as indicated and specified shall be borne by the Contractor.

1.4 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain 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 flag men, erection of barricades, placing of lights around and in front of equipment and the work, 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. In the event of a conflict between laws and jurisdictions governing the work, the most stringent shall prevail. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as

little as possible with public vehicular and pedestrian traffic.

1.4.1 Haul Roads

The Contractor shall, at its own expense, construct access and haul roads necessary for proper prosecution of the work under this contract. Haul roads shall be constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided. The Contractor shall provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval by the Contracting Officer. Lighting shall be adequate to assure full and clear visibility for full width of haul road and work areas during any night work operations. Upon completion of the work, haul roads designated by the Contracting Officer shall be removed.

1.4.2 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. Barricades and other physical protection shall be in accordance with EM 385-1-1.

1.5 CONTRACTOR STORAGE AND STAGING AREAS

The Contractor shall be responsible for the security and safe storage of any materials or equipment stored by him for his use. Trailers utilized by the Contractor, whether for the purpose of administrative use or materials storage, shall present a clean and neat exterior appearance and be maintained in a state of good repair. Any item of construction equipment, with the exception of hand tools, which becomes inoperable shall be repaired within five working days or removed from the construction site.

1.5.1 Maintenance of Storage Area

It shall be the responsibility of the Contractor to keep all fencing in a state of good repair and proper alignment. Should the Contractor elect to traverse grassed or other areas without paving that are not established roadways, with construction equipment or other vehicles, such grassed or other areas shall be covered with a layer of gravel as necessary to prevent rutting and to prevent the tracking of mud onto paved or established roadways. Gradation of the gravel shall be at the discretion of the Contractor. The Contractor shall be responsible for the cutting of grass located within the boundaries of the construction site for the duration of the project. Grass and vegetation along fences, buildings, under trailers and in areas not accessible to mowers shall be edged or trimmed neatly.

1.5.2 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment; in addition, the Contractor shall notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office.

1.6 GOVERNMENT REPRESENTATIVE OFFICE SPACE

The Contractor shall provide at his expense office space and facilities for use of the Government Construction Representative for the duration of the contract. The provision of this office and facilities can be within the Contractor's Office Trailer or separate at the option of the Contractor. As a minimum, the office space and facilities shall be as follows:

Office Work Space - The Contractor shall furnish regularly to Government construction representatives a suitable working and storage space, equipped and maintained to the satisfaction of the Contracting Officer or his representative. As a minimum the facilities shall include a desk with lamp and chair for plan study, and a file drawer, approximately 15" by 24", capable of being locked with a padlock. The working space need not be a separate room, but shall be properly lighted, ventilated, and heated.

Cellular Telephone and FAX Machine - The Contractor shall provide a cellular phone and FAX machine which shall be made available for official use by the Government Inspectors on a 24-hour a day basis to exclusively conduct Government business and emergency calls.

Toilet and Lavatory (in a separate room) - One faucet at lavatory to include hot water.

One refrigerator (15 cubic feet minimum) and one microwave oven (700 watts minimum.

1.7 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. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.8 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will 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 necessary.

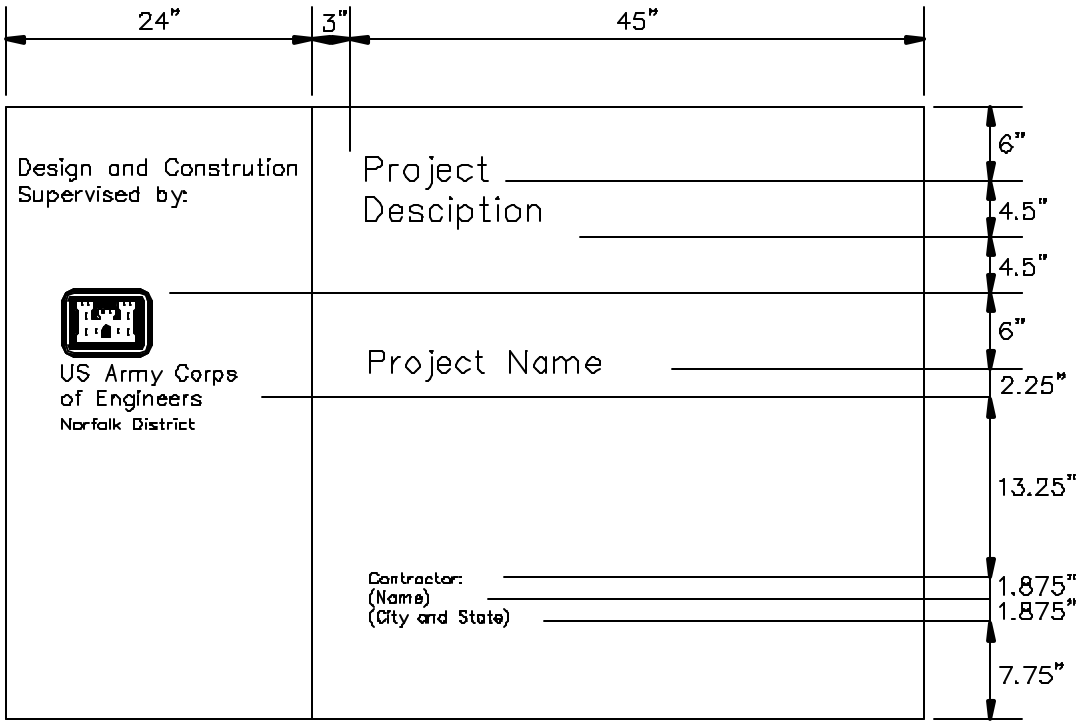
PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

PROJECT SIGN

The graphic format for this 4'x6' sign panel follows the legend guidelines and layout as specified below. The large 4'x4' section of the panel on the right is to white with black legend. A 2'x4' decal provided by the Corps shall be placed on the left side of the sign panel.



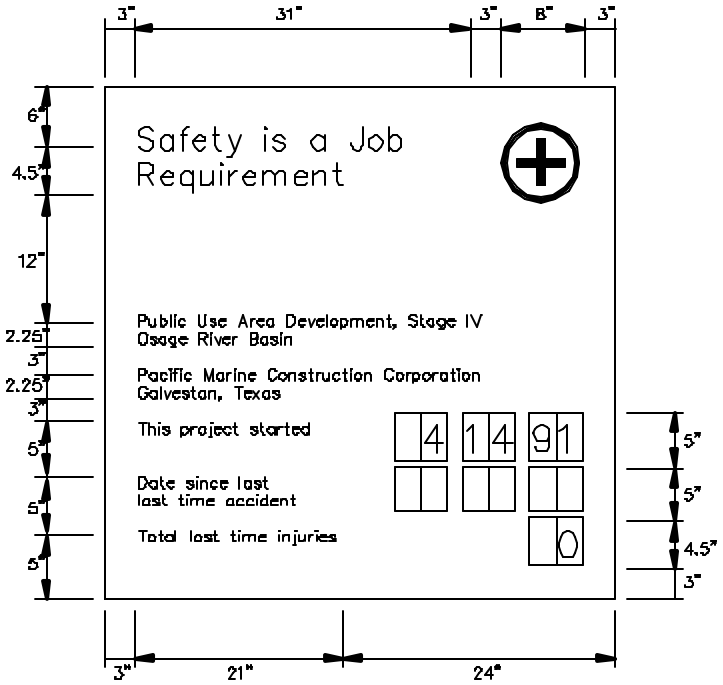
Project Description:
One to three line project title legend describes the work being done under this contract.
Color: Black; Typeface: 3" Helvetica Bold; Maximum line length: 42"

Project Name:
One to three line identification of project or facility.
Color: Black; Typeface 1.5" Helvetica Bold; Maximum line length: 42"
Cross-align the first line of PROJECT NAME with the first line of the Corps Signature as shown.

Contractor:
One to five line identification of prime contractors including: type(architect, general contractor, etc.), corporate or firm name, city, state.
Color: Black; Typeface: 1.25" Helvetica Bold; Maximum line length: 21"

All typography is flush left and ragged right, upper and lower case with initial capitals only as shown. Letter and word spacing to follow Corps Standards (EP 310-1-6a and 6b).

SAFETY SIGN



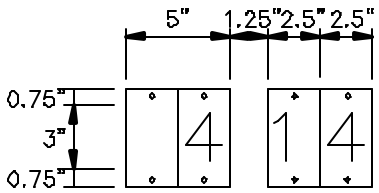
All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter and word spacing to follow Corps Standards (EP 310-1-6a and 6b).

Legend Group 1: Standard two-line title "Safety is a Job Requirement" with (8" od.) Safety Green First Aid logo. Typeface: 3" Helvetiva Bold; Color: Black.

Legend Group 2: One to two-line project title legend describes the work being done under this contract and name of host project. Typeface: 1.5" Helvetica Regular; Color: Black; Maximum line length: 42".

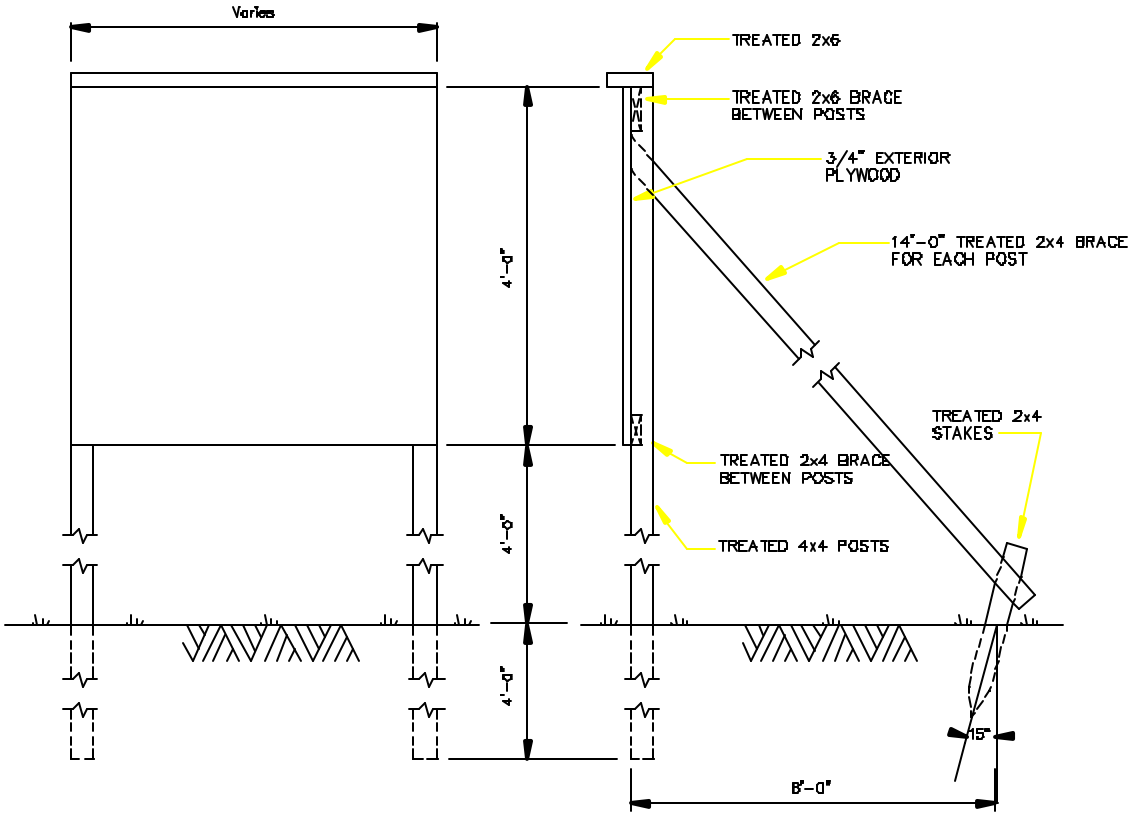
Legend Group 3: One to two-line identification: name of prime contractor and city, state address. Typeface: 1.5" Helvetica Regular; Color: Black; Maximum line length: 42".

Legend Group 4: Standard safety record captions as shown. Typeface 1.25" Helvetica Regular; Color: Black.



Replaceable numbers are to be mounted on white 0.060 aluminum plates and screw-mounted to backdrop. Typeface: 3" Helvetica Regular; Color: Black; Plate size: 2.5"x 4.5".

SIGN ERECTION DETAILS



SECTION 02072

EXCAVATION AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL
10/02 [CENAO ModMaster by GeoEnv Eng Sec]

PART 1 GENERAL

1.1 REFERENCES

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

CODE OF FEDERAL REGULATIONS (CFR)

CFR 29 Part 1910.120	Hazardous Waste Operations and Emergency Response
CFR 40 Part 262	Standards Applicable to Generators of Hazardous Waste
CFR 40 Part 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 401	Effluent Guidelines and Standards
49 CFR 178	Specifications for Packaging

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA SW-846	(Nov 1986, 3rd Ed) Test Methods for Evaluating Solid Waste (Vol IA, IB, IC, and II)

U.S. ARMY CORPS OF ENGINEERS (COE)

ER 1110-1-263	Chemical Data Quality Management for Hazardous Waste Remedial Activities
ER 385-1-92	Safety and Occupational Health Document Requirements for Hazardous, Toxic, and Radioactive Waste (HTRW) Activities
EM 385-1-1	(1996) Safety and Health Requirements Manual
EM 200-1-1	(1994) Validation of Analytical Chemistry Laboratories
EM 200-1-3	(Sep 94) Requirements for the Preparation of Sampling and Analysis Plans
EM 200-1-6	(1997) Chemical Quality Assurance

COMMONWEALTH OF VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

9VAC 20-60	Hazardous Waste Management Regulations
9VAC 20-80	Solid Waste Management Regulations
9VAC 20-110	Regulations Governing the Transportation of Hazardous Materials
9VAC 25-31	Virginia VPDES General Permit
9VAC 25-120	General VPDES Permit for Discharge from Petroleum Contaminated Sites
9VAC 25-180	VPDES Permit for Stormwater Discharge-Construction Sites
9VAC 25-260	Virginia Water Quality Standards

1.2 MEASUREMENT AND PAYMENT

1.2.1 Measurement

1.2.1.1 Excavated Soil

a. Excavation, stockpiling, and characterization of all soil excavated in accordance with these plans and specifications will not be measured, and all associated costs shall be included in the Contractor's lump sum bid price.

b. Excavated soil that is confirmed to exceed regulated levels for clean fill as defined in 9VAC 20-80, shall be measured for transportation and disposal in tons as indicated on certified weigh tickets from the disposal facility.

1.2.1.2 Dewatered Water

Containerization, characterization, and treatment and discharge or transportation and disposal as applicable and in accordance with these plans and specifications will not be measured, and all associated costs shall be included in the Contractor's lump sum bid price.

1.2.2 Payment

Compensation for work covered by this section will be in accordance with the bid schedule.

1.3 SUBMITTALS

The following shall be submitted in accordance with SECTION 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Work Plan; GA

The Contractor shall develop, implement, maintain, and supervise as part of the work, a comprehensive plan for contaminated soil removal, stockpiling, testing, treatment & disposal, and related operations. The Work Plan shall demonstrate compliance with the contract clauses, referenced standards, this specification, ER 1110-1-263, ER 385-1-92, EM 385-1-1, 9VAC 20-60, 9VAC 20-80, 9VAC 20-110, 9VAC 25-120, 9VAC 25-260, and CFR 29 Part 1910.120. No work at the site, with the exception of site inspections and mobilization, shall be performed until the plan is approved. At a minimum the Work Plan shall include:

a. Scheduling and operational sequencing of all work associated with excavations to be performed in areas of known or potential contamination.

b. Description of the excavation, screening for contamination, stockpiling, and disposal procedures. This shall include a detailed drawing, identifying the location of all excavations and stockpiling activities and all exclusion zones, contamination reduction zones, and support zones associated with planned excavations.

c. A Sampling and Analysis Plan, in accordance with ER 1110-1-263, EM 200-1-1, EM 200-1-3, and EM 200-1-6 which describes field screening and sampling methods and applicable quality control procedures, and which lists analysis parameters, EPA SW-846 or other applicable methods, and selected laboratory or laboratories including qualifications and quality assurance/control procedures.

d. Identification of applicable regulatory requirements and permits.

e. Methods to be employed for contaminated water removal, storage, sediment removal and treatment, and discharge or disposal, and methods proposed for control of surface water. For on-site sediment removal and treatment, full details of unit process(es), a proposed layout/staging including pumping and piping, manufacturer's operating instructions, and certification of compliance with applicable VDEQ, federal and local regulations, shall be submitted.

f. Identification of waste and contaminated soil transporters and means of transportation and a copy of all State and/or Federal Licenses for hauling .

g. Disposal facilities and alternate disposal facilities and means of disposal or remediation and a copy of all State and/or

Federal Permits for treatment and disposal of waste and [contaminated soil.

h. Borrow source.

i. Spill prevention plan.

j. Spill contingency plan.

k. Decontamination procedures.

l. Methods of measuring weight of contaminated soil for disposal.

m. A statement of agreement from each transporter, and from each treatment, storage, and disposal facility operator to accept the specific waste from this work.

Site Health and Safety Plan; GA

There is potential for workers at the site to be exposed to petroleum constituents during excavation and handling. Pursuant to regulations issued by CFR 29 Part 1910.120, the Contractor shall take appropriate measures to safeguard the health of workers at the site. Such measures include apprising workers of the nature of the contaminants at the site, ensuring workers have appropriate training for working at contaminated sites, and preparing and conducting work in accordance with a site specific health and safety plan. The Contractor shall prepare a health and safety plan, in accordance with CFR 29 Part 1910.120, EM 385-1-1, and ER 385-1-92, which addresses all aspects of worker notification, training, exposure, protective equipment, and other protection at the site.

SD-06 Test Reports

Test Reports; FIO

a. Test results for the fill material and discharged water. The reports shall include the chain-of-custody records.

b. Test results for potentially contaminated soil for use as fill or for off-site disposal.

SD-07 Certificates

Qualifications; G

A statement demonstrating that the Contractor meets the requirements in paragraph QUALIFICATIONS. Include owner, owner point of contact with phone number, location of work site, and dates of previous projects.

Permits; FIO

Provide copies of permits for transporting storing treating disposal of wastes.

SD-11 Closeout Submittals

Shipping Manifest; GA

Manifests in accordance with Federal regulations CFR 40 Part 262 Section 23 and CFR 40 PART 263 and Commonwealth of Virginia regulations [9VAC 20-60, 9VAC 20-80, and 9VAC 20-110], as applicable.

Final records and documentation of treatment or disposal in accordance with paragraph CONTAMINATED SOIL DISPOSAL GUIDELINES and paragraph DOCUMENTATION OF TREATMENT OR DISPOSAL.

1.4 QUALIFICATIONS

The Contractor shall have a minimum of two years experience in the removal and disposal of petroleum contaminated soil and in the treatment and/or transportation and disposal of petroeum contaminated water.

1.5 NOTIFICATION

The Contractor shall notify the Contracting Officer (CO) immediately after a suspected contaminant beyond that indicated is encountered.

1.6 AVAILABLE DATA

A An Environmental Site Assessment (ESA) was performed at the location of the proposed disposal site for sediment removed in support of Embrey Dam Removal. A copy of the ESA is included as an attachment to the specifications.

The ESA resulted in identifying one area where contamination exceeds regulatory guidance. Test pit TP-10-2 was conducted within the boundaries of the metal structure, which is located on the southern portion of the site, and appears to be where the former operators worked on equipment and vehicles,.

The sample was submitted to Accutest Laboratories, Inc., for BTEX, TAL Metals, and TPH analysis. Results indicate the presence Total Petroleum Hydrocarbons (TPH-DRO) at concentrations of 4,390 ppm.

1.6.1 ENVIRONMENTAL PROTECTION

The Contractor shall take necessary measures specified herein, shown in Section 01355 Environmental Protection, and as otherwise required, to protect the environment.

PART 2 PRODUCTS

2.1 BACKFILL MATERIAL

Backfill material shall meet the applicable soils classifications as specified in [Section 02331 Earthwork as applicable.

2.2 CONTAINERS FOR HAZARDOUS AND SPECIAL WASTES

Containers for hazardous and special wastes shall comply with the applicable requirements of 49 CFR 178 and 9VAC20-110.

PART 3 EXECUTION

No work covered by this Section shall be performed until the Work Plan and Site Health and Safety Plan have been submitted and approved as specified.

Based on the soil sample results described in paragraph AVAILABLE DATA, the top four feet of soil removed from within the footprint of the building, shall be considered contaminated, until characterization proves otherwise. The Contractor shall excavate this area in two foot lifts, stockpiling and sampling each lift separately and in accordance with the Virginia Solid Waste Management Regulation 9VAC 20-80.

The Contractor shall be responsible for obtaining all necessary permits required to perform the work as indicated and specified, and the Government shall be held harmless for any associated delays or costs incurred by the Contractor.

3.1 SAFETY

Personnel working inside and in the general vicinity of the excavation shall be trained and thoroughly familiar with the safety precautions, procedures, and equipment required for controlling potential hazards associated with this work. Personnel shall use proper protection and safety equipment during work in and around the excavation in accordance with the approved Site Health and Safety Plan, and as otherwise specified.

3.2 SOIL EXAMINATION, TESTING, AND ANALYSIS

3.2.1 Soil Examination

The Contractor shall examine the soil within the project site and shall immediately notify the CO of suspected soil contamination beyond that indicated, and all work within the area of suspected contamination shall be stopped as soon as practicable. As soon as practicable is defined as securing and protecting all open trenches and equipment, and providing measures to prevent contamination of other soil or water. The Contractor shall not perform any additional work in the area of suspected contamination until notified, in writing, by the Contracting Officer.

3.2.2 Stockpiled Material Sampling

Stockpiled contaminated and suspected contaminated soil shall be sampled in accordance with 9VAC 20-80 and as modified herein, and preserved in accordance with EPA SW-846. For VOC analysis, in addition to the sampling

required by 9VAC 20-80, a minimum of one discrete sample shall be collected from a representative and relatively undisturbed location within the excavation or stockpile.

3.2.3 Testing and Analysis

Soil samples from stockpiled material shall be characterized by testing in accordance with EPA SW-846, 9VAC 20-60, and 9VAC 20-80, as modified herein for the following:

a. GRO/TPH by EPA Method 5035/8015 modified;

b. DRO/TPH by EPA Method 3550/8015 modified;

c. Benzene, ethylbenzene, toluene, xylene (BTEX) by EPA Method 5035/8021B;

d. toxicity characteristic leaching procedure (TCLP) by EPA Method 1311 for lead by EPA Method 6010/7000;

e. Total organic halogens (TOX) by EPA method 9020;

f. Paint filter liquids by EPA Method 9095;

g. All additional analyses as may be required by the approved off-site disposal facility.

3.2.4 Test Reports

Copies of all test results shall be provided to the Contracting Officer. The testing laboratory and Contractor shall adhere to the quality control program, including detection limits, spikes, blanks, and duplicates, of EPA SW-846 and EM 200-1-3 as applicable. All additional testing required by the disposal or treatment facility shall be at the Contractor's expense.

3.3 EXCAVATION

Excavation and dewatering shall be performed in accordance with the approved Work Plan and shall be strictly limited to the extent necessary to properly and safely complete the work as indicated and specified.

3.3.1 Open Excavations

Open excavations and stockpile areas shall be secured while awaiting test results. The excavation shall not be backfilled without approval from the CO. The Contractor shall divert surface water around excavations to prevent water from directly entering into the excavation.

3.3.2 Stockpiles

a. Monitoring Excavated Material

Excavation within the limits of the metal building and down to four feet below ground surface,shall be considered potentailly contaminatedperformed in a manner that will limit the amount of potentially contaminated soil that could be mixed with previously uncontaminated soil. Suitable uncontaminated, excavated soil shall be deposited adjacent to the excavation, and shall be used for backfill prior to using borrow material. Continuous monitoring of all excavation work, to the limits defined above, shall be accomplished with an organic vapor analyzer photoionization device or flame ionization detector (OVA/PID/FID) capable of detecting volatile, semi-volatile and organic vapors to a minimum of one part per million (ppm).

b. Stained, Volatile, and/or Odorous Excavated Material

Excavated material which is visibly stained or for which real time vapor monitoring instrument readings exceed background levels by more than 10 ppm for volatile and semi-volatile hydrocarbons and which has an obvious petroleum odor shall be considered contaminated and shall be stockpiled for sampling in accordance with paragraph STOCKPILED MATERIAL SAMPLING.

c. Stockpiling Contaminated Soil

Potentially contaminated soil shall be placed on an impermeable geomembrane a minimum of 20 mils thick or on two (2) layers each a minimum of 10 mils thick, and covered with a minimum 10-mil thick sheet of geomembrane as specified. The geomembrane shall be placed such that the stockpiled soil does not come in contact with surface water run-off. The geomembrane cover shall prevent rain or surface water from coming into contact with the contaminated soil, as well as limit the escape of the volatile constituents in the stockpile. Contaminated soil may be stockpiled in sealed roll-offs approved for storage of hazardous waste, provided that proper sampling is not inhibited.

3.3.3 Contaminated Water

The Contractor shall prevent surface water from entering the excavation while excavating within potentially contaminated material. Any water that enetrs the exacavtion, while excavating within potentially contaminated material,shall be considered contaminated until characterization sampling and testing indicate otherwise. The water shall be contained, stored on-site and analyzed prior to being transported, treated, discharged, or disposed of. No Government facilities shall be used for storage or disposal of the waste. The Contractor shall provide approved containers, vehicles, equipment, labor, signs, placards, labels, and manifests necessary for accomplishment of the work, including materials necessary for cleaning up spills that could occur from the excavation operation.

3.3.4 Contaminated Water Disposal

a. Sample and Analysis

Contaminated water shall be sampled and analyzed, and certified results received, prior to discharge or disposal. Analytical results for water discharged to the storm sewer system or other permitted locations shall be furnished within 72 hours of sample collection, or more frequently if

required by the issued permit. Documentation of all analyses performed shall be furnished to the Contracting Officer in accordance with Paragraph RECORDS. Type and frequency of analyses for contaminated water to be taken to an off-site treatment, storage and disposal (TSD) facility shall conform to the requirements of the TSD facility. Type and frequency of analyses for contaminated water to be discharged to the storm sewer system or other permitted location shall conform to the permit requirements of 9VAC 25-120 for contamination by petroleum products other than gasoline to be discharged to freshwater receiving waters, except as modified by the permitting agency. Sampling and analyses of contaminated water and treated water, and the Contractor and laboratory quality assurance programs, shall be in accordance with the approved Sampling and Analysis Plan and applicable Federal and State Regulations..

b. Treatment and Disposal

Water that cannot be discharged into the storm water drainage system or other permitted location without causing a violation of 9VAC 25-120 or 9VAC 25-260 or Section 01355 Environmental Protection, shall be treated as necessary for discharge compliance, or shall be transported for treatment and disposal by an approved off-site TSD facility. The selection of on-site treatment and discharge versus transporting and off-site disposal, shall be solely at the Contractor's risk and responsibility and the Government shall assume no responsibility for any lack of data or for any assumptions made by the Contractor. When the contaminated water is to be treated on site for discharge, the proposed treatment including methods for removing any free product if encountered shall be included in the Work Plan, and the resulting compliant water shall be discharged as specified below for discharge of uncontaminated water. For water to be taken to an off-site TSD facility, the Contractor shall transport, treat, and dispose of the water in accordance with applicable requirements of 40 CFR 263, 40 CFR 264, 40 CFR 401, 9VAC 20-80, 9VAC 20-110, and 9VAC 25-260.

3.3.5 Discharge of Uncontaminated Water

Water that meets the applicable requirements of 9VAC 25-120 and 9VAC 25-260 and VPDES permit per 9VAC 25-31 and 9VAC 25-180may be discharged into the storm water drainage system or other permitted location at the site. Discharge location and methods and sediment removal procedures shall minimize disturbance to the receiving media in accordance with applicable specifications and permits, and shall be approved prior to implementation. For any non-compliance, discharge shall be halted and measures shall be taken as necessary to comply with the applicable specification and permit requirements.

3.4 BACKFILLING

Backfilling shall be in accordance with the applicable requirements of [Section 02331 EARTHWORK

3.5 CONTAMINATED SOIL DISPOSAL GUIDELINES

3.5.1 General

Disposal of soil confirmed by sampling and analysis as contaminated with petroleum products shall be in accordance with 9VAC 20-80 and requirements specified herein. Disposal of any other confirmed contaminated soil and hazardous waste materials shall be in accordance with all applicable Federal, Commonwealth of Virginia, and state and local solid and hazardous waste laws and regulations, and payment therefor will be in accordance with the CHANGES clause of the CONTRACT CLAUSES.

3.5.2 Transportation of Wastes

Transportation of hazardous waste or special waste shall comply with applicable requirements of 40 CFR 263, 9VAC 20-60, 9VAC 20-80, and 9VAC 20-110, and regulations of any other authority having jurisdiction when transported across Virginia state lines.

3.5.3 Records

Records shall be maintained of all waste determinations, including appropriate results of analyses performed, substances and sample locations, the time of collection, and other pertinent data as required by CFR 40 Part 262 Subpart D and 9VAC 20-60 or 9VAC 20-80 as applicable. Transportation, treatment, disposal methods and dates, the quantities of waste, the names and addresses of each transporter and of each treatment, storage, and disposal facility shall also be recorded and available for inspection, as well as copies or originals of the following documents:

a. Manifests

b. Waste analyses or waste profile sheets

c. Certifications of final treatment/disposal signed by the responsible disposal facility official

d. Weighing scale receipt corresponding to each manifest

Following contract close out, the records shall become the property of the Government.

3.5.4 Shipping Manifest

For hazardous or special waste, the Contractor shall utilize [[a Commonwealth of Virginia approved manifest system in conformance with 9VAC 20-60 and CFR 40 Part 262, or 9VAC 20-80 and CFR 40 Part 263, respectively, so that the waste can be tracked from generation to ultimate disposal. The Contractor shall prepare the manifests, complete. On the day of shipment, a manifest shall be supplied to the Contracting Officer for review. If applicable, the Contracting Officer or a designated representative will supply the generator number and sign the Generator's Certification if the manifest is accepted. If not acceptable, the Contractor shall make all corrections at no additional cost to the Government. A sample manifest shall be submitted on the day before shipment, complete with all information that will be included on the actual manifest less quantities,

for review and comment.

3.6 DOCUMENTATION OF TREATMENT OR DISPOSAL

a. Documentation

The waste shall be taken to a treatment, storage, or disposal facility which complies with 9VAC 20-60 or 9VAC 20-80 as applicable. The Contractor shall provide documentation of acceptance of special waste or hazardous waste by the original return copy of the hazardous waste manifest, signed by the owner or operator of a facility legally permitted to treat or dispose of those materials. If the Contractor selects a different facility than is identified in the approved Work Plan, documentation shall be provided for approval to certify that the facility is authorized and meets the standards specified.

b. Payment

There will be no payment for excavation, transportation, and disposal of contaminated soils for which the transportation, disposal, and weight are not documented by the specified material manifest and corresponding weighing scale receipt, and for which other information specified in paragraph RECORDS is not provided.

-- End of Section -- -- End of Section --

SECTION 02220

DEMOLITION
08/02

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 the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.6	(1990) Demolition Operations

ENGINEERING MANUALS (EM)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

1.2 SUBMITTALS

The Contractor shall make submittals for the following listed reports and certificates as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work. 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) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken in accordance with SECTION 01440. 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 Product Data

Work Plan; G

The procedures proposed for the accomplishment of the work. The procedures shall provide for safe conduct of the work, including procedures and methods to provide necessary supports, lateral bracing and shoring when required, careful removal and disposition of materials specified to be salvaged, protection of property which is to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services when applicable. The procedures shall include a detailed

description of the methods and equipment to be used for each operation, and the sequence of operations in accordance with EM 385-1-1.

1.3 REGULATORY AND SAFETY REQUIREMENTS

Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," safety requirements shall conform with ANSI A10.6.

1.4 PROTECTION

1.4.1 Protection of Personnel

During the demolition work the Contractor shall continuously evaluate the condition of the structures being demolished and take immediate action to protect all personnel working in and around the demolition site. No area, section, or component of structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

1.4.2 Environmental Protection

The work shall comply with the requirements of Section 01355.

1.5 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

1.6 USE OF EXPLOSIVES

Use of explosives will not be permitted.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 EXISTING STRUCTURES AND SITE DEBRIS

Existing structures including foundations, concrete debris, and other concrete items indicated shall become the property of the Contractor upon receipt of the Notice to Proceed and be completely removed and disposed off site in approved land fills. Any other concrete or debris items encountered within the proposed dike containment area during excavation operations shall be considered items to be demolished and removed and disposed in approved land fills. The Contractor shall expect to encounter debris such as tires, old cement mixers, metal screen material, automobile parts, boat parts, piles of miscellaneous debris containing such items as soda cans, beer bottles, refrigerators and scrap metal that shall be considered items to be demolished and removed and disposed in approved land fills. Details of typical items to be encountered can be found in the Environmental

Assessment.

3.2 FILLING

All non-biodegradable trash and debris is unsatisfactory material for filling and shall be considered items to be demolished and removed. Holes and other openings from demolition operations shall be graded and filled in accordance with SECTION 02235.

3.3 DISPOSITION OF MATERIAL

Except where specified in other sections, all items demolished and materials and debris discovered on site during excavation operations and not reused, shall become the property of the Contractor and shall be removed from work site prior to the commencement of finish grading operations. Title to materials resulting from demolition, and materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer of the Contractor's demolition and removal procedures, and authorization by the Contracting Officer to begin demolition. The Government will not be responsible for the condition or loss of, or damage to, such property after contract award. Materials and equipment shall not be viewed by prospective purchasers or sold on the site.

3.3.1 Reuse of Materials and Equipment

Crushed stone indicated to be used in the access road construction shall be excavated and stored during demolition and excavation operations. The reuse of the crushed material in the access road shall be accomplished as the work progresses. Any crushed stone not used for the purpose designated shall be considered item to be demolished and removed.

3.4 CLEAN UP

Debris and rubbish shall be removed from the construction site and transported in a manner that prevents spillage. Local regulations regarding hauling and disposal of all materials from demolition operations shall apply.

-- End of Section --

SECTION 02235
DRAINAGE PIPING, SPILL BOX AND ACCESS WALKWAY

08/02

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 INSTITUTE OF TIMBER CONSTRUCTION (AITC)

AITC TC Manual	(1994) Timber Construction Manual

AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM)

ASTM A 760	1997) Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains
ASTM D 3350	Polyethylene Plastics Pipe and Fittings Materials

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

AWPA C2	(1995) Lumber, Timber, Bridge Ties and Mine Ties - Preservative Treatment by Pressure Processes
AWPA C9	(1997) Plywood - Preservative Treatment by Pressure Processes
AWPA P5	(1997) Standards for Waterborne Preservatives

U.S. DEPARTMENT OF COMMERCE (DOC)

PS-1	(1995) Construction and Industrial Plywood

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-02 Shop Drawings

Access Walkway, Spill Box and Drainage Piping; G

Submit drawings showing alignment of piping, location of spill box, plans and details for framing and placement, dimension of members, nails and

other fastners, and structural calculations substantiating finished construction. The finished construction as minimum shall comply with the Life Safety Code, OSHA, and the AITC TC Manual

1.3 CHARACTER OF MATERIALS

The character of earthen materials on which other work of this SECTION is to be provided is specified in SECTION 02331. Bidders are expected to examine the site of work and decide for themselves the character and state of the materials. The Contractor shall be fully responsible for his evaluation of character and state of the materials and his selection of equipment necessary to complete the construction of work specified.

1.4 DELIVERY, STORAGE, AND HANDLING

1.4.1 Delivery and Storage

Materials delivered to site shall be inspected for damage, unloaded, and stored with a minimum of handling. Materials shall not be stored directly on the ground. The inside of pipes and fittings shall be kept free of dirt and debris. The Contractor shall have a copy of the manufacturer's instructions available at the construction site at all times and shall follow these instructions unless directed otherwise by the Contracting Officer.

1.4.2 Handling

Materials shall be handled in a manner that ensures delivery in sound and undamaged condition. Pipe shall be carried to placement location, not dragged.

PART 2 PRODUCTS

2.1 DRAINAGE PIPE

2.1.1 Corrugated Metal Pipe (CMP)

ASTM A 760, zinc coated, Type I or II pipe with annular 2-2/3 by 1/2 inch corrugations, size as indicated.

2.1.2 High Density Polyethylene Pipe (HDPE)

ASTM D 3350, high density, high molecular weight polyethylene PE3408 pipe with light colored interior, flexible (coiled), size 24-inch as indicated.

2.2 CONCRETE AND STRUCTURAL STEEL

Concrete shall be provided in accordance with Section 03300. Structural steel and miscellaneous anchors and cables shall be provided in accordance with Section 05120

2.3 ACCESS WALKWAY FRAMING AND DECK MATERIALS

Wood materials for the construction of the access walkway shall be provided

in accordance with PS-1, AWPA C2, AWPA C9 and AWPA P5 as applicable for the respective construction item.

2.3.1 Accessories and Nails

Markings shall identify both the strength grade and the manufacturer. Accessories and nails shall be galvanized or stainless steel conforming to the following:

2.3.1.1 Anchor Bolts

ASTM A 307, size as indicated by approved shop drawings submitted by Contractor, complete with nuts and washers.

2.3.1.2 Bolts: Lag, Toggle, and Miscellaneous Bolts and Screws

Type, size, and finish best suited for intended use and as indicated by approved shop drawings submitted by Contractor .

PART 3 EXECUTION

3.1 SITE WORK CONTROL

The Contractor shall be responsible for the layout of his work at the location and to the elevations and grades shown on the contract drawings. The Contractor shall have a licensed professional engineer or licensed professional surveyor in the Commonwealth of Virginia lay out the spill box and appurtenant access walkway structure and drainage piping.

3.2 SPILLBOX CONSTRUCTION

A new spillbox shall be constructed at the location shown on the plans. Effluent pipe shall be provided in accordance with ASTM A 760, zinc coated of Type I or II pipe with annular or helical corrugations, asphalt coated, 24-inch. The spillbox shall be anchored to an 8 feet by 8 feet, 48-inch thick concrete slab. The slab shall be formed and poured on top of a compacted earth foundation with eight inches of gravel between the compacted earth and the slab. The slab foundation and new spillbox shall be placed so that the invert elevation of the spillbox is at +180.0 feet NGVD. New weir boards shall be installed up to the +183.0 feet NGVD elevation. Weir boards shall be treated in accordance with American Wood Preserves Institute Standard (AWPA) C2 with waterborne preservatives listed in AWPA P5 to a retention level recommended for water contact use. After dredging operations are complete and the placement area has dried and final earthwork operations are commenced, the spill box shall be filled with stone specified for the access road in SECTION 02275 as VDOT RBS Section 203, Size No. 57. After filling with stone the aboveground spill box structure shall be removed to a point approximately 2-feet below finished grade and disposed off site.

3.3 ACCESS WALKWAY CONSTRUCTION

An access walkway shall be constructed from the +222.0 foot NGVD elevation on the finished dike to the spillbox as indicated. The walkway shall be

constructed with pressure treated wood. Walkway materials shall be treated in accordance with American Wood Preservers Institute Standard (AWPA) C2 with waterborne preservatives listed in AWPA P5 to a retention level recommended for water contact use. The walkway shall be framed and braced to provide safe access to the spillbox. The walkway shall have a minimum deck width of 4 feet and have well made continuous hand rails and kickboards on both sides of the walkway deck. The contractor shall be responsible for the design and construction of the walkway, specifically including the framing, bracing, and sufficient footings. All work shall meet the requirements of the Life Safety Code and OSHA regulations.

3.4 PIPING CONSTRUCTION

Drainage pipes shall be placed on a bedding surface that provides a firm foundation of uniform density throughout the entire length of the pipe. Pipe lengths shall be the maximum practical. Laying shall be with the separate sections joined firmly together, with the outside laps of circumferential joints pointing upstream, and with longitudinal laps on the sides. Any unprotected metal in the joints shall be coated with bituminous material as specified by the piping manufacturer. Joints shall be provided water-tight and secured in accordance with the standard under which the piping is provided.

-- End of Section --

SECTION 02275

STONE PROTECTION AND ACCESS ROAD STONE
04/98

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.

VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT)

VDOT RBS Road and Bridge Specifications (2002)

1.2 SUBMITTALS

The Contractor shall make submittals for the following listed reports and certificates as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work. 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) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken in accordance with SECTION 01440. 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

Plant Reports

Reports of inspections and tests, including analysis and interpreting of test results required to verify quality standards are met for materials provided.

PART 2 PRODUCTS

2.1 GENERAL CONDITIONS

All stone shall be hard, sound, durable stone of igneous origin and free from structural defects as approved by the Contracting Officer. The sources from which the contractor proposes to obtain the material shall be

selected well in advance of the time when the material will be required in the work. Contractor shall notify Contracting Officer a minimum of 30 days prior to stone placement so that a possible site visit by Government personnel may be arranged to the source of stone. Contractor shall submit "Certificates of Compliance" and "Plant Reports" attesting to the compliance of the stone to the contract specification and VDOT Standards.

2.2 QUALITY

Suitable tests and service records shall be submitted and will be used to determine the acceptability of the stone materials. In the event suitable test reports and a service record, that are satisfactory to the Contracting Officer, are not available, as in the case of newly operated sources, the material shall be subjected to such tests as are necessary to determine its acceptability for use in the work. Tests to which the materials may be subjected include petrographic analysis, specific gravity, abrasion, absorption, wetting and drying, freezing and thawing, and such other tests as may be considered necessary to demonstrate to the satisfaction of the Contracting Officer that the materials are acceptable for use in the work. All tests will be made by and at the expense of the Contractor under the supervision of the Government.

2.3 STONE

Stone shall be of the sizes indicated and shall be durable and of suitable quality to insure permanence in the structure and in the climate in which it is to be used. It shall be free from defects that would tend to increase unduly its deterioration from natural causes. The inclusion of objectionable quantities of dirt, sand, clay, and rock fines will not be permitted.

2.3.1 Riprap

The stone shall meet or exceed the minimum requirements of VDOT RBS Section 204, Grade B, and applicable portions of Section 414 for Dry Riprap, class 1 as indicated.

2.3.2 Filter Stone

The stone shall meet or exceed the minimum requirements of VDOT RBS Section 203, size No. 2 as indicated.

2.3.3 Access Road Stone

The stone shall meet or exceed the minimum requirements of VDOT RBS Section 203, Size No. 57.

PART 3 EXECUTION

3.1 PLACEMENT OF STONE

Stone shall be placed in accordance with SECTION 02373 and VDOT RBS Section 414 as applicable. Stone shall be placed to its full course thickness at one operation and in such a manner to avoid displacing the underlayer

material or puncturing the geotextile. The larger stones shall be well distributed and the entire mass of stones in their final position shall be roughly graded to conform to the gradation specified. Placing stone by dumping into chutes or by similar methods likely to cause segregation of the various sizes will not be permitted. The desired distribution of the various sizes of stones throughout the mass shall be obtained by selective loading of the material at the quarry or other source, by controlled dumping of successive loads during final placing, or by other methods of placement which will produce the specified results. The contractor shall maintain the stone until accepted and any material displaced by any cause shall be replaced at his expense to the lines and grades shown on the drawings.

3.1.1 Placement of Stone for Access Road

Stone shall be placed to a minium course depth of 8-inches as soon as practicable after compaction of the access road. Stone shall be placed to the full width and length of the access road as indicated.

-- End of Section --

02331

EARTHWORK

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 422	(1963; R 1998) Particle-Size Analysis of Soils
ASTM D 698	(1991; R 1998) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))
ASTM D 1556	(1990; R 1996) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1998) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu.m.))
ASTM D 2167	(1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2216	(1998) Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 2487	(1998) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2922	(1996) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 2937	(1994) Density of Soil in Place by the Drive-Cylinder Method
ASTM D 3017	(1996) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 4253	(1993; R 1996) Maximum Index Density and Unit Weight of Soils Using a Vibratory

	Table
ASTM D 4254	(1991; R 1996) Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
ASTM D 4318	(1998) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 4643	(1993) Determination of Water (Moisture) Content of Soil by the Microwave Oven Method
ASTM D 5195	(1991; R 1996) Density of Soil and Rock In-Place Below the Surface by Nuclear Methods

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT)

VDOT RBS	Road and Bridge Specifications (2002)

1.2 DEFINITIONS

1.2.1 Clearing

Clearing shall consist of the removal and satisfactory disposal of all above ground and below ground trees, downed timber, snags, slash, brush, garbage, trash, debris, fencing, and other items occurring in the designated areas to be cleared.

1.2.2 Grubbing

Grubbing shall consist of the removal and satisfactory disposal of stumps, roots larger than 2 inches in diameter, and matted roots from the designated grubbing areas. Grubbing also includes filling of holes from the grubbing operation.

1.2.3 Stripping

Stripping shall consist of the removal and satisfactory disposal of crops, weeds, grass, and other vegetative materials to the ground surface and topsoil to a depth of 6 inches.

1.2.4 Satisfactory Materials

Satisfactory materials shall consist of materials classified in accordance with ASTM D 2487 as CL, CH, CH-SC, CL-ML, ML, SC, SC-SM, SC-GC, SP, SW, GC free from: roots and other organic matter; contamination from hazardous, toxic or radiological substances; trash, debris; and frozen materials.

Not all satisfactory materials can be used in levee. Only the satisfactory materials stated above, meeting the additional or modified requirements of paragraph TYPES OF FILL MATERIALS, can be used for levee construction.

1.2.5 Unsatisfactory Materials

Unsatisfactory materials shall not be used in any levee or other required fill. Unsatisfactory materials includes all other materials that are not defined above as satisfactory materials.

1.2.6 Embankment

The terms "levee" or "embankment" as used in these specifications are defined as the earth fill portions of the levee structure or other fills related to the levee structure and includes all types of earth fill for the levee and all other fills within the limits of the levee.

1.2.7 Backfill

Backfill as used in this section is defined as that fill material which cannot be placed around or adjacent to a structure until the structure is completed or until a specified time interval has elapsed after completion.

1.2.8 Excavation

Excavation shall consist of removal of material to the lines and grades shown on the drawings, or as otherwise directed or approved by the Contracting Officer and as described in paragraph EXCAVATION in PART 3 EXECUTION.

1.2.9 Classification of Soils

Materials used to construct the embankments and for backfills shall be classified in accordance with ASTM D 2487 (Unified Soil Classification System).

1.2.9.1 Cohesionless and Cohesive Materials

Cohesionless materials shall include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic.

1.2.10 Degree of Compaction

1.2.10.1 Cohesive Material

Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557, abbreviated hereinafter as percent laboratory maximum density.

1.2.10.2 Cohesionless Material

Degree of compaction shall be expressed as a percentage of the relative

density in accordance with ASTM D 4253 and ASTM D 4254.

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

Excavation;

Submit a written excavation plan 14 days prior to the beginning of any excavation. Approval of the detailed plan shall be obtained from the Contracting Officer prior to starting the work. If necessary, the plan shall be modified as required to meet field conditions, and the modifications shall be approved prior to use. As a minimum, the plan shall contain, the following:

a. Proposed methods for preventing interference with, or damage to, existing underground or overhead utility lines, trees designated to remain and other man-made facilities or natural features designated to remain within or adjacent to the construction rights-of-way.

b. Provision for coordinating the work with other Contractors working in the construction rights-of-way or on facilities crossing or adjacent to this work.

c. The proposed methods for controlling surface and ground water in the borrow areas and required excavations.

d. Stockpiling plan for embankment material before it is transported to the project site showing locations, stockpile heights, slopes, limits, and drainage around the stockpile areas.

e. A complete listing of equipment used for excavation and to transport the excavated material.

f. The Contractor's proposed sequence of work for excavating the borrow areas with plan and cross sectional views showing starting and final work locations and clearing, grubbing and stripping limits.

g. The Contractor's proposals for conserving arable land and for making optimum use of available borrow, including the Contractor's proposed methods for grading the bottom of the borrow areas after completing use of the borrow areas.

h. The Contractor's proposed road pattern, and plan for implementing dust control measures.

Plan of Operations

Thirty (30) days prior to commencement of access road construction or placing embankment and backfill which ever is earlier, the contractor shall submit for approval a Plan of Operations for accomplishing all embankment and backfill construction and for the location and construction of haul roads. This plan shall include but not be limited to the Contractor's proposed sequence of construction for embankment and backfill items, and methods and types of equipment to be utilized for all embankment and backfill operations, including transporting, placing, and compaction. This plan shall also include the names and addresses of the commercial testing labs or engineering firms which will perform the soil testing and inspection and describe how all required soils testing will be performed.

Nuclear Density;

Nuclear density testing equipment shall be used in accordance with ASTM D 2922 and ASTM D 3017. In addition, the following condition shall apply:

a. Prior to using the nuclear density testing equipment on the site, the Contractor shall submit to the Contracting Officer a certification that the operator has completed a training course approved by the nuclear density testing equipment manufacturer, the most recent data sheet from the manufacturer's calibration, and a copy of the most recent statistical check of the standard count precision.

b. The nuclear density testing equipment shall be capable of extending a probe a minimum of 6 inches down into a hole.

SD-06 Test Reports

Measurement of Fill Material;

Submit a copy of the records of each compliance survey the next work day following the survey.

1.4 SYSTEM DESCRIPTION

The work covered by this section consists of furnishing all equipment, labor, materials, and incidentals, and performing all operations necessary for the clearing, grubbing, and stripping of the areas specified herein or indicated on the drawings, and for the removal and disposal of cleared, grubbed, and stripped materials, and refilling of holes resulting from grubbing; excavation of borrow areas and for all other excavations incidental to the construction of levees and access road as specified and shown; foundation preparation and the construction of levee embankments, backfill at drainage structures, and other incidental earthwork as may be

necessary to complete the levee as specified herein and as shown on the drawings. All work under this section shall comply with the requirements of EM 385-1-1.

1.5 GENERAL CONDITIONS

1.5.1 Lines and Grades

The embankment and backfill shall be constructed to the lines, grades, and cross sections indicated on the drawings, unless otherwise directed by the Contracting Officer. The Government reserves the right to increase or decrease the foundation widths and embankment slopes or to make such other changes in the embankment or backfill sections as may be deemed necessary to produce a safe structure. Changes in quantities resulting from such revisions will be paid for in accordance with the contract section on Variations in Estimated Quantities Clause. The end slopes and side slopes of partial fill sections shall not be steeper than one vertical on 2.5 horizontal.

1.5.2 Conduct of the Work

The Contractor shall maintain and protect the embankment and backfill in a satisfactory condition at all times until final completion and acceptance of all work under the Contract. If, in the opinion of the Contracting Officer, the hauling equipment causes horizontal shear planes or slicken sides, rutting, quaking, heaving, cracking, or excessive deformation of the embankment or backfill, the Contractor shall limit the type, load, or travel speed of the hauling equipment on the embankment or backfill. The Contractor may be required to remove, at his own expense, any embankment material placed outside of prescribed slope lines. Any approved embankment or backfill material which is lost in transit or rendered unsuitable after being placed in the embankment or backfill and before final acceptance of the work shall be replaced by the Contractor in a satisfactory manner and no additional payment will be made therefor. The Contractor shall excavate and remove from the embankment or backfill any material which is unsatisfactory and shall also dispose of such material and refill the excavated area as directed, all at no cost to the Government.

1.5.3 Materials

Materials for embankment and backfill construction will be obtained from the on-site borrow as shown. Materials obtained from required excavation which meet or which can be processed to meet the requirements for embankment material, or any other material required for this project, as specified herein, may be utilized in the embankment or as fill or backfill. All roots, limbs, and wood fragments shall be removed from embankment materials. Materials containing sod, other organic or perishable material, trash, debris, and frozen materials shall not be used in the embankment.

1.5.4 Slides and Foundation Failures

When sliding occurs in any part of the embankment and backfills prescribed in this section after they have been placed, but prior to final acceptance of all work under the contract, the Contractor shall repair the slide as

directed by the Contracting Officer. When the slide is caused through the fault of the Contractor, the repair shall be made at no cost to the Government. When the slide is not the fault of the Contractor, an equitable adjustment in the contract price shall be made pursuant to the Contract Clause CHANGES to cover the cost of the repairs.

1.5.5 Protection of Existing Man-Made Facilities and Natural Features

Embankment construction shall be conducted in such a manner as to avoid damage to trees left standing and trees outside the embankment areas and natural features, with due regard to the safety of employees and others, and in compliance with EM 385-1-1.

1.5.6 Drainage

The Contractor shall not block or restrict the flow in a natural drain, existing culvert, ditch or channel at any time without obtaining prior written approval from the Contracting Officer. This approval shall not relieve the Contractor from responsibility for any damage caused by his operation. Surface water shall be directed away from excavations and construction sites so as to prevent erosion and undermining of foundations. Diversion ditches, dikes, and grading shall be provided and maintained as necessary during construction. Excavated slopes and backfill surfaces shall be protected to prevent erosion and sloughing. Excavation shall be performed so that the site and the area immediately surrounding the site and affecting operations at the site shall be continually and effectively drained.

1.6 PROJECT SITE CONDITIONS

1.6.1 Protection of Cultural and Natural Resources

All work and Contractor operations shall comply with the requirements of Section 01355 ENVIRONMENTAL PROTECTION and with the requirements of this section.

1.6.2 Protection of Existing Man-Made Facilities and Natural Features

Trees within the clearing area shall be felled in such a manner as to avoid damage to trees left standing and trees outside the clearing area, existing buildings, man-made facilities and natural features, with due regard to the safety of employees and others, and in compliance with EM 385-1-1. Excavation shall be conducted in such a manner as to avoid damage to trees left standing and trees outside the clearing and excavation area and natural features, with due regard to the safety of employees and others, and in compliance with EM 385-1-1. Existing utility lines that are shown on the drawings or the locations of which are made known to the Contractor prior to excavation and that are to be retained shall be protected from damage during excavation. When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the applicable utility companies in sufficient time for measures to be taken to prevent interruption of the services.

1.6.3 Historical, Archeological, and Cultural Resources

Historical, archeological, and cultural resources within the Contractor's work limits may exist. If, during construction activities, the Contractor observes items that may have historical or archeological value, such observations shall be reported immediately to the Contracting Officer so that appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in the destruction of these resources and shall prevent his employees from trespassing on or otherwise damaging such resources.

1.6.4 Subsurface Data

Subsurface soil boring logs are included in these specifications. Subsurface investigation reports and samples of materials obtained from subsurface investigations may be examined at the Norfolk District Office. These data represent subsurface information at the boring locations; however, variations may exist in the subsurface between boring locations. Groundwater levels indicated on the soil boring logs were levels found at the time of exploration. The groundwater table can vary significantly depending on time of year, variation from normal precipitation, and river stage or tide level.

1.7 MERCHANTABLE TIMBER

Merchantable timber remaining within the areas to be cleared on or after the date of award of this contract may be disposed of as the Contractor sees fit, as long as such merchantable timber is either removed from the rights-of-way or is satisfactorily disposed of in accordance with the paragraph DISPOSITION OF CLEARED, GRUBBED, AND STRIPPED MATERIAL DISPOSITION OF EXCAVATED MATERIAL and the Contractor complies with all applicable State and local regulations and laws.

1.8 SEQUENCE OF WORK

1.8.1 Clearing and Grubbing

All clearing and grubbing work shall be completed at least 300 feet in advance of embankment construction.

1.8.2 Stripping

After inspection and acceptance of cleared and grubbed areas, stripping may proceed.

PART 2 PRODUCTS

2.1 TYPES OF FILL MATERIALS

2.1.1 Satisfactory Material

Satisfactory Material shall be obtained from the on-site borrow area provided by the Government. The Satisfactory Material is classified in accordance with Paragraph 1.2.4.

PART 3 EXECUTION

3.1 CLEARING

Clearing shall be accomplished within the limits of existing ground to receive embankment and access road, together with strips 5 feet wide, beyond and contiguous thereto, where within the construction right of way. Trees, downed timber, snags, slash, brush, garbage, trash, debris, fencing and other items shall be cleared flush with the existing ground surface. Trees and vegetation designated to be left standing or to remain shall be protected from damage from construction operations. Clearing of borrow areas shall be limited to the minimum area required for construction operations.

3.2 GRUBBING

Grubbing shall be accomplished within the limits of existing ground to receive embankment and fill for the access road, together with strips 5 feet wide, beyond and contiguous thereto, where within the construction right of way. Grubbing shall be accomplished to a depth of at least 3 feet below the existing ground surface.

3.2.1 Filling of Holes

All holes caused by grubbing operations and removal of debris and trash shall be filled with satisfactory material as specified in paragraph 1.2.4. This material shall be placed in 8 inch layers to the elevation of the adjacent ground surface and each layer compacted to a density at least equal to that of the adjoining undisturbed material.

3.3 STRIPPING

The entire area within the limits of existing ground to receive embankment, structures, and road together with strips 5 feet wide, beyond and contiguous thereto, and where within the construction right of way, shall be stripped to remove crops, weeds, grass, and other vegetative materials to the ground surface and topsoil to a depth of 6 inches]].

3.4 DISPOSITION OF CLEARED, GRUBBED, AND STRIPPED MATERIAL

Except as otherwise specified or indicated on the drawings, all materials resulting from clearing and grubbing operations shall become property of the Contractor and be removed off site. In no case shall any material resulting form clearing and grubbing operations be buried or permanently placed within the levee foundation or any structural foundation. The Contractor shall make a reasonable effort to channel merchantable material into the commercial market and to make beneficial use of the materials resulting from clearing and grubbing. The topsoil material resulting from the stripping operations shall be temporarily stockpiled within the rights-of-way.

3.4.1 Burning

Burning will not be allowed.

3.5 DEWATERING AND DIVERSION

Surface and groundwater control shall be accomplished in coordination with the required excavation and embankment construction. Surface and/or groundwater control may necessitate the use of temporary diversion ditches, cofferdams and/or dewatering by the use of pumping. Methods for care of surface water and for controlling the surface and groundwater levels shall be subject to approval of the Contracting Officer.

3.6 EXCAVATION

Excavation shall consist of removal of material in preparing the foundations to the lines and grades shown on the drawings, removal of material from ditches and channels to the lines and grades shown on the drawings, removal of objectionable materials and obtaining required fill materials from the borrow areas. Blasting will not be permitted. Over excavation shall be backfilled to grade with similar over excavated material or satisfactory material and compacted to a density of at least that of the surrounding material. Excavation in areas with petroleum contamination (see EA and drawings) shall be in accordance with Section 02072 EXCAVATION OF PETROLEUM CONTAMINATED SOIL. Contaminated soil, as defined in Section 02072, shall not be used for fill of backfill.

3.6.1 Over Excavation

3.6.1.1 Outside Limits of Levee Foundations or Structures

Over excavation outside the limits of the foundations of levees or structures shall be backfilled to grade with similar over excavated material or satisfactory material and compacted to a density of at least that of the surrounding material.

3.6.1.2 Within Limits of Levee Foundations or Structures

Over excavation within the limits of the foundations of levees or structures shall be backfilled to grade in accordance with paragraph PREPARATION OF FOUNDATION, PARTIAL FILL SURFACES AND ABUTMENTS.

3.6.2 Structures

Excavations for structures and pipe shall conform to the dimensions and elevations indicated for each structure and footing, except as specified hereinafter, and shall include trenching for utility and foundation drainage systems and all work incidental thereto. Excavation shall extend a sufficient distance from walls and footings to allow for placing and removal of forms. Satisfactory material removed below the depths indicated without specific direction of the Contracting Officer shall be replaced at no additional cost to the Government and filled in accordance with paragraph OVER EXCAVATION above. Over excavation below required invert elevations or bottoms of footings shall be backfilled with lean concrete at no additional cost to the Government. No footings shall be constructed on

unsatisfactory material as determined by the Contracting Officer. Excessively wet and/or soft material in subgrades resulting from water ponding in footing excavations shall be removed and replaced with satisfactory material compacted to the density of the surrounding undisturbed material.

3.6.3 Borrow Areas

3.6.3.1 Government-Furnished

Borrow areas shall be excavated to the extent necessary to obtain satisfactory material within the lines and grades as shown on the drawings. Borrow areas shall be drained and kept dry during excavation.

3.6.4 Utilities

Excavations for pipe beds shall be shaped to fit the contour of the pipe over a width of not less than 0.6 of the pipe diameter, or as shown on the drawings.

3.6.5 Riprap and Bedding

Excavations for riprap and bedding shall be performed at the locations and to the lines and grades shown.

3.7 TOLERANCES

A tolerance of 6 inches above or below the prescribed grade will be allowed in the excavations.

All embankments and backfills shall be constructed to the grades, lines, and cross-sections shown on the drawings. At all points a tolerance of 4 inches above or below the prescribed grade will be permitted in the final dressing, provided that any excess material is so distributed that the crown of the levee drains and that there are no abrupt humps or depressions in any surfaces.

3.8 SLIDES

In case sliding occurs in any part of the excavations prescribed in this section after they have been excavated, but prior to final acceptance of all work under the contract, the Contractor shall repair the slide as directed by the Contracting Officer. In case the slide is caused through the fault of the Contractor, it shall be repaired at no cost to the Government. In case the slide is due to no fault of the Contractor, an equitable adjustment in the contract price will be made for the repairs in accordance with the Contract Clause CHANGES.

3.9 DISPOSITION OF EXCAVATED MATERIALS

3.9.1 Satisfactory Materials

Satisfactory excavated material shall be incorporated in the appropriate zones of the embankment or access road. Satisfactory material shall

consist of material as defined in paragraph DEFINITIONS, subparagraph SATISFACTORY MATERIALS. When direct placement is not practicable, satisfactory material from the excavation shall be stockpiled for subsequent use in parts of the work for which it is specified herein and/or as indicated on the drawings. Satisfactory materials in excess of the quantity necessary to construct backfills and embankments shall be disposed of as specified for unsatisfactory materials.

3.9.2 Unsatisfactory Materials

Unsatisfactory materials shall be as defined in paragraph DEFINITIONS, subparagraph UNSATISFACTORY MATERIALS. Unsatisfactory materials from the excavations prescribed in this section shall be permanently disposed of by placing in abandoned portions of the borrow areas. The material shall be shaped so that its surface is free from abrupt changes in grade and shall be sloped to drain. No additional payment will be made for Contractor-furnished disposal areas.

3.10 PREPARATION OF FOUNDATION, PARTIAL FILL SURFACES AND ABUTMENTS

3.10.1 Earth

After excavation (as described in paragraph EXCAVATION) or stripping (as described in paragraph CLEARING, GRUBBING AND STRIPPING) of the embankment foundation to the extent indicated or otherwise required, the sides of stump holes, test pits, and other similar cavities or depressions shall be broken down so as to flatten out the slopes, and the sides of the cut or hole shall be scarified to provide bond between the foundation material and the fill. Unless otherwise directed, each depression shall be filled with the same material type that is to be placed immediately above the foundation. The fill shall be placed in layers, moistened, and compacted in accordance with the applicable provisions of paragraphs PLACEMENT, MOISTURE CONTROL, and COMPACTION for the specific material type. Materials which cannot be compacted by roller equipment because of inadequate clearances shall be compacted with power tampers in accordance with the paragraph COMPACTION for the specific material type. After filling of depressions and immediately prior to placement of compacted fill in any section of the embankment, the foundation of such section shall be loosened thoroughly by scarifying, plowing, discing or harrowing to a minimum depth of 6 inches, and the moisture content shall be adjusted to the amount specified in paragraph MOISTURE CONTROL for the appropriate type of material. After removal of roots or other debris turned up in the process of loosening, the entire surface of the embankment foundation area shall be compacted by 6 complete coverages of the compaction equipment as specified for the appropriate type of fill. Immediately prior to placement of compacted fill on or against the surfaces of any partial fill section, all soft or loose material, all material containing cracks or gullies, and all material that does not conform with the specified zoning of the embankment shall be removed. The remaining surface of the partial fill shall be loosened by scarifying, plowing, discing or harrowing to a minimum depth of 6 inches, and the moisture content shall be adjusted as specified in paragraph MOISTURE CONTROL for the appropriate type of material. The surface of the partial fill section upon which fill is to be placed shall then be compacted as hereinafter specified for the appropriate type of

fill. No separate payment will be made for loosening and rolling the foundation area, the abutment area, or the surfaces of partial fill sections, but the entire cost thereof shall be included in the applicable contract price for fill.

3.11 PLACEMENT AND SPREADING

3.11.1 General

Prior to beginning embankment placement on the levee foundation the Contractor shall notify the Government that the foundation is ready to receive fill. The required dike shall be constructed to a minimum height elevation of +220.0 feet NGVD. Dike height elevations above the +220.0 feet NGVD are acceptable. The finished dike shall have a minimum top berm width of 20 feet and proceed with a 1 vertical on a 2.5 horizontal side slope from the inside and outside top of the dike to the finished grade elevation as indicated. Immediately after construction of the finished dike, the exterior slope shall be hydroseeded in accordance with VDOT RBS SECTION 244 and section 603. After dredging operations are complete and the placement area has dried to the point that earthwork operations can be conducted on the interior of the dike, the interior and exterior portions of the dike shall be graded to a 1 vertical on 3 horizontal slope and the exterior slope hydroseeded as specified above.

3.11.1.1 Gradation and Distribution

The gradation and distribution of materials throughout each zone of the levee shall be such that the embankment will be free from lenses, pockets, streaks, and layers of material differing substantially in texture or gradation from surrounding material of the same class. If lenses, pockets, or layers of materials differing substantially in texture or gradation from surrounding material occur in the spread material, the layer shall be mixed by harrowing or any other approved method to blend the materials. During the placing and spreading process, the Contractor shall maintain at all times a force of workers adequate to remove all roots, debris, and oversize stone from all embankment materials. All stones and rock fragments larger than 4 inches in any dimension shall be removed from the fill. No fill shall be placed upon a frozen surface, nor shall snow, ice, or frozen earth be incorporated in the embankment.

3.11.1.2 Foundations and Partial Embankment Fills

The foundations and all partial embankment receiving fills shall be kept thoroughly drained. Placing operations will be such as to avoid mixing of materials from adjacent sections as much as practicable.

3.11.1.3 Equipment Traffic

Equipment traffic on any embankment zone shall be routed to distribute the compactive effort as much as practicable. Ruts formed in the surface of any layer of spread material will be filled before that material is compacted. If, in the opinion of the Contracting officer, the compacted surface of any layer of material is too smooth to bond properly with the

succeeding layer, the surface shall be loosened by scarifying or other approved methods before material from the succeeding layer is placed.

3.11.2 Placement on Surfaces Containing Frozen Materials

Embankment shall not be placed on a foundation which contains frozen material. This prohibition encompasses all foundation types, including the natural ground, all prepared subgrades (whether in an excavation or on an embankment, and all layers of previously placed and compacted earth fill which become the foundations for successive layers of earth 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 of 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 the determination. Levee embankment material shall not contain frozen clumps of soil, snow or ice.

3.11.3 Placement of Embankment and Backfill Against Structures

No embankment or backfill shall be placed on or against concrete less than 7 days after placement or 70 percent of the design strength, without prior approval of the Contracting Officer. Crawler-type tractors, vibratory equipment and other similar compaction equipment shall not be used within 4 feet of any completed or partially completed structure. Compaction within 4 feet of completed or partially completed structures shall be accomplished by the use of mechanical hand tampers, vibrating plates, or other approved methods and equipment. The Contractor shall ensure that compaction operations do not damage any existing utilities. Any damage caused by the Contractor's operation shall be repaired at the Contractor's expense.

3.11.4 Satisfactory Material

Satisfactory Material shall be placed and spread in layers not more than 8 inches in uncompacted thickness, except that within 4 feet of structures, the uncompacted layer thickness shall be reduced to 6 inches. Layers should be started full out to the slope stakes and shall be carried substantially horizontal and parallel to the levee centerline with sufficient crown or slope to provide satisfactory drainage during construction.

3.12 MOISTURE CONTROL

3.12.1 General

The materials in each layer of the fill shall contain the amount of moisture, within the limits specified below or as directed by the Contracting Officer, necessary to obtain the required compaction. Material that is not within the specified moisture content limits after compaction shall be reworked to obtain the specified moisture content, regardless of

density.

3.12.1.1 Insufficient Moisture for Suitable Bond

If the top or contact surfaces of a partial fill section become too dry to permit suitable bond between these surfaces and the additional fill to be placed thereon, the Contractor shall loosen the dried materials by scarifying or discing to such depths as may be directed by the Contracting Officer, shall dampen the loosened material to an acceptable moisture content, and shall compact this layer in accordance with the applicable requirements of paragraph COMPACTION.

3.12.1.2 Excessive Moisture for Suitable Bond

If the top or contact surfaces of a partial fill section become too wet to permit suitable bond between these surfaces and the additional fill to be placed thereon, the wet material shall be scarified and permitted to dry, assisted by discing or harrowing, if necessary, to such depths as may be directed by the contracting officer. The material shall be dried to an acceptable moisture content, and shall be compacted in accordance with the applicable requirements of paragraph COMPACTION.

3.12.1.3 Drying Wet Material

Material that is too wet shall [be spread on the embankment and permitted to dry, be assisted by discing or harrowing, if necessary, until the moisture content is reduced to an amount within the specified limits.

3.12.1.4 Increasing Moisture in Dry Material

The moisture content of material that is too dry, will be adjusted on the levee embankment. The Contractor will add water to the fill material and by harrowing, or other approved methods, work the moisture into the material until a uniform distribution of moisture within the specified limits is obtained. Water applied on a layer of fill on the levee embankment shall be accurately controlled in amount so that free water will not appear on the surface during or subsequent to rolling. Should too much water be added to any part of the embankment, the rolling on that section of the embankment shall be delayed until the moisture content of the materials is reduced to an amount within the specified limits. If it is impracticable to obtain the specified moisture content by wetting or drying the material on the fill, the Contractor may be required to pre-wet or dry back the material at the source of excavation or in the borrow area.

3.12.2 Satisfactory Material

The moisture content after compaction shall be within the limits of 6 percentage points above optimum to 1 percentage point below optimum moisture content as determined by ASTM D 698.

3.13 COMPACTION

3.13.1 Compaction Equipment

Compaction equipment shall conform to the following requirements and shall be used as prescribed in subsequent paragraphs.

3.13.1.1 Tamping Rollers

Tamping rollers shall be as follows:

a. Towed -Tamping rollers shall consist of a heavy duty double drum unit, with a drum diameter not less than 60 inches, and an individual drum length of not less than 60 inches. The drums shall be capable of being ballasted with water or a combination of sand and water. Each drum shall have staggered feet uniformly spaced over the cylindrical surface such as to provide approximately three tamping feet for each two square feet of drum surface. The tamping feet shall be 7 to 9 inches in clear projection from the cylindrical surface of the roller and shall have a face area of not less than 5 square inches nor more than 7 square inches. The roller shall be equipped with cleaning fingers, so designed and attached as to prevent the accumulation of material between the tamping feet, and these cleaning fingers shall be maintained at their full length throughout the periods of use of the roller. The weight of the roller shall not be less than 3500 pounds per foot of linear drum length weighted, and shall not be more than 2000 pounds per foot of drum length empty. The two drums comprising one roller unit shall be yoked such that they will oscillate when traversing uneven surfaces. The design and operation of the tamping roller shall be subject to the approval of the Contracting Officer who shall have the right at any time during the prosecution of the work to direct such repairs to the tamping feet, minor alterations in the roller and variations in the weight as may be found necessary to secure optimum compaction of the earth fill materials. The Contractor may be required to add ballast to the roller to the maximum capacity specified by the manufacturer of the roller. The roller shall be drawn by a crawler-type or a rubber-tired tractor at a speed not to exceed 3.5 miles per hour. The use of the rubber-tired tractor shall be discontinued if the tires leave ruts that prevent uniform compaction by the tamping roller. If tamping rollers are used in tandem, not more than two rollers in tandem will be permitted and in such case, one trip of the tandem rollers over any surface will be considered as two passes. When tamping rollers are used in tandem, the tamper foot spacing shall be offset so that the circumferential rows on the rear drums are in line with the mid-point of the circumferential rows on the forward drums.

3.13.1.2 Rubber-tired Rollers

Rubber-tired rollers shall have a minimum of four wheels equipped with pneumatic tires. The tires shall be of such size and ply as to be capable of being operated at tire pressures between 80 and 100 pounds per square inch at an 25,000 pound wheel load. The roller wheels shall be located abreast and so designed that each wheel will carry approximately equal load in traversing uneven ground. The spacing of the wheels shall be such that the distance between the nearest edges of adjacent tires will not be greater than 50 percent of the rated tire width of a single tire at the operating pressure for an 25,000 pound wheel load. The roller shall be

provided with a body suitable for ballast loading such that the load per wheel may be varied, as directed by the Contracting Officer, from 18,000 to 25,000 pounds. The roller shall be towed at a speed not to exceed 5 miles per hour. The character and efficiency of this equipment shall be subject to the approval of the Contracting Officer.

3.13.1.3 Hand Operated Compactors

Compaction of material, in areas where it is impracticable to use a roller or tractor compaction shall be performed by the use of approved hand operated power compactors.

a. Power Tampers: Power tampers shall be hand operated equipment capable of compacting material in confined areas. The compactors shall be either an internal combustion or pneumatic activated tamper. Tampers shall have sufficient weight and striking power to produce the specified compaction. The character and efficiency of this equipment shall be subject to the approval of the Contracting Officer.

b. Vibratory Plate Compactor: Vibratory compactors operated by hand in confined areas shall utilize the oscillating cam principal and shall deliver an impact of not less than 2000 pounds at a rate of approximately 2000 impulses per minute. The character and efficiency of this equipment shall be subject to the approval of the Contracting Officer.

3.13.1.4 Crawler-type Tractors

Crawler-type tractors used for spreading or compaction shall weigh not less than 20,000 pounds, shall exert a unit tread pressure of not less than 6 pounds per square inch, and shall not be operated at a speed to exceed 3.5 miles per hour.

3.13.1.5 Sprinkling Equipment

Sprinkling equipment shall consist of tank trucks, pressure distributors or other equipment designed to apply water uniformly and in controlled quantities to variable width of surface.

3.13.1.6 Miscellaneous Equipment

Scarifiers, disks, spring-tooth or spike-tooth harrows, spreaders, and other equipment shall be suitable for use in embankment construction and approved by the Contracting Officer. Equipment used for blending fill material shall be capable of penetrating the full loose lift thickness of the specific material type.

3.13.2 Compaction of Satisfactory Material

After a layer of material has been dumped and spread, it shall be harrowed to break up and blend the fill materials and to obtain uniform moisture distribution. Harrowing shall be performed with a heavy disk plow, or other approved harrow, to the full depth of the layer. If one pass of the harrow does not accomplish the breaking up and blending of the materials,

additional passes of the harrow shall be required, but in no case will more than three passes of the harrow on any one layer be required for this purpose. When the moisture content and the condition of the layer are satisfactory, the lift shall be compacted to a minimum of 95 percent of the maximum dry density as determined by the Contractor in accordance with ASTM D 1557. In areas which are not accessible by roller, the fill shall be placed in layers not more than 4 inches in uncompacted depth and compacted with an approved hand operated compactor to a density equal to that obtained in other areas which are accessible to rollers. Dumping, spreading, sprinkling, and compacting may be performed at the same time at different points along a section when there is sufficient area to permit these operations to proceed simultaneously. Compaction equipment shall be operated such that the strip being traversed by the roller shall overlap the rolled adjacent strip by not less than 3 feet.

3.13.3 Compaction Adjacent to Structures and Utilities

Heavy equipment for spreading and compacting fill shall not be operated within 4 feet of structures or utilities, except as otherwise specified herein. Material within 4 feet shall be compacted using appropriate hand operated compactors specified herein.

3.14 FIELD QUALITY CONTROL

3.14.1 Clearing, Grubbing, and Stripping

The Contractor shall establish and maintain quality control for clearing, grubbing, and stripping operations to assure compliance with contract requirements, and maintain records of the quality control for all construction operations including but not limited to the items indicated below. These records, as well as the records of corrective actions taken, shall be furnished to the Government in accordance with Section 01451 CONTRACTOR QUALITY CONTROL.

3.14.1.1 Clearing

Station to station limits, transverse clearing limits from applicable centerline; percentage of area complete; types of materials cleared.

3.14.1.2 Grubbing

Station to station limits, transverse grubbing limits from applicable centerline; percentage of area complete; type of material; filling of grubbed holes.

3.14.1.3 Stripping

Station to station limits, transverse stripping limits from applicable centerline; percentage of area complete; type of material; depth of stripping.

3.14.2 Excavation

The Contractor shall establish and maintain quality control for excavation

operations to assure compliance with contract requirements, and maintain records of the Contractor's quality control for all construction operations including but not limited to the following:

a. Lines, grades and tolerances,

b. Segregation of materials,

c. Disposal and/or stockpiling of materials,

d. Unsatisfactory materials,

e. Conditions that may induce seepage or weaken the foundation or embankment,

f. Stability of excavations.

Records of inspections and tests, as well as the records of corrective actions taken, shall be furnished to the Government in accordance with Section 01451 CONTRACTOR QUALITY CONTROL.

3.14.3 Embankment

3.14.3.1 General

The Contractor shall establish and maintain field quality control for foundation preparation, embankment and backfill operations to assure compliance with contract requirements and maintain detailed records of field quality control for all operations including but not limited to the following:

a. Earthwork Equipment

Type, size, number of units and suitability for construction of the prescribed work.

b. Foundation Preparation

Methods of preparing the foundations in advance of embankment and backfill construction and methods for providing drainage of the foundation and partially completed fills.

3.14.3.2 Materials Testing

The contractor shall perform sufficient testing to insure that the fill is being constructed as specified. The testing program specified below shall be considered the minimum acceptable frequency of testing. This does not relieve the Contractor from the responsibility of performing additional testing, if required to ensure compliance with these specifications.

a. Soil Classification Tests

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 embankment fill or backfill. 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. The Contractor shall submit additional tests for every 3000 cubic yards of embankment or backfill material. Soil classification tests shall be performed on foundation material as required to determine the acceptability of the in-situ soils. Additional tests will be required if noticeable changes in the material occur.]

b. Material Testing

(1) Moisture Density Relationships. The moisture-density relations for each different classification of cohesive material utilized shall be determined in accordance with ASTM D 1557. Prior to placing any fill material containing cohesive material, a minimum of 5 five-point compaction test shall be performed on representative samples of the material to be used as fill. During fill placement a minimum of one additional moisture-density test shall be performed for every 2500 cubic yard placed. Additional tests will be required each time a new material is encountered.

(2) Water (Moisture) Content Tests. Determination of water content shall be performed in accordance with ASTM D 2216. ASTM D 4643 may be used when rapid moisture content results are needed. All rapid results obtained by ASTM D 4643 shall be confirmed by a test on a duplicate sample performed in accordance with ASTM D 2216. In the event of disagreement between the results, ASTM D 2216 shall govern. One water content test will be performed for each 500 cubic yards of material placed. Backfill and fills not meeting the required specifications for water content shall be retested after corrective measures have been applied.

(3) In-place Density Testing. The in-place density shall be determined in accordance with ASTM D 1556, ASTM D 2167, ASTM D 2922, ASTM D 2937, or ASTM D 5195. At least one (1) in-place density test shall be performed on every 500 cubic yards of completed fill with the horizontal locations randomly staggered in the fill. Fill not meeting the required specifications for in-place density shall be retested after additional compaction has been completed. When nuclear method is used for in-place density testing according to ASTM D 2922 and ASTM D 3017, the first test and every twentieth test thereafter for each material type shall include a sand cone correlation test in accordance with ASTM D 1556. The sand cone test shall be performed adjacent to the location of the nuclear test, shall include a nominal 6 inch diameter sand cone, and shall include a minimum wet soil weight of 6 pounds extracted from the hole. Nuclear density testing equipment shall not be used during rain. The density correlations shall be submitted with test results. Each transmittal including density test data shall include a summary of all density correlations for the job neatly prepared on a summary sheet including at a minimum:

(i) Meter serial number and operators initials.
(ii) Standard count for each test.
(iii) Material type.
(iv) Probe depth.
(v) Moisture content by each test method and the deviation.
(vi) Wet density by each test method and the deviation.]

d. Additional Testing

The Contracting Officer may request additional tests if there is reason to doubt the adequacy of the compaction, or special compaction procedures are being used, or materials change or if the Contracting Officer determines that the Contractor's testing is inadequate or the Contractor is concentrating backfill and fill operations in a relatively small area.

3.14.3.3 Materials

Suitability of materials for use in embankment and backfill.

3.14.3.4 Fill Placement

Layout, maintaining existing drainage, moisture control, thickness of layers, removal of oversized material, spreading and compaction for embankment and backfill.

3.14.3.5 Grade and Cross Section

Surveys to verify that the dimensions, slopes, lines and grades conform to those shown on the drawings.

3.14.3.6 Testing by the Government

During the life of this contract, the Government[or its contractors] will perform quality assurance tests. The contractor shall make available to the government or its contractors the equipment to perform these test.

3.14.3.7 Reporting

The Contractor shall furnish the inspection records and all material testing results, as well as the records of corrective action taken, in accordance with Section 01451 CONTRACTOR QUALITY CONTROL.

-- End of Section --

SECTION 02373

GEOTEXTILE

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of the 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 4354	(1999) Sampling of Geosynthetics for Testing
ASTM D 4355	(1999) Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
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 1997) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1999a) Determining Apparent Opening Size of a Geotextile
ASTM D 4759	(1988; R 1996) Determining the Specification Conformance of Geosynthetics
ASTM D 4833	(2000) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
ASTM D 4873	(2001) Identification, Storage, and Handling of Geosynthetic Rolls and Samples
ASTM D 4884	Seam Strength of Sewn Geotextiles

1.2 MEASUREMENT

Measurement shall be made of the as-built surface area in square yards covered by geotextile. Allowance will be made for geotextile in anchor and/or drainage trenches but no allowance will be made for waste, overlaps,

damaged materials, repairs, or materials used for the convenience of the Contractor.

1.3 PAYMENT

Geotextile installed and accepted will be paid for at the respective contract unit price in the bidding schedule. This unit price shall include the cost of materials, equipment, installation, testing, and other costs associated with placement of the geotextile.

1.4 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-04 Samples

Quality Assurance Samples and Tests

Samples for quality assurance testing; 7 days shall be allotted in the schedule to allow for testing.

SD-07 Certificates

Geotextile

A minimum of 7 days prior to scheduled use, manufacturer's certificate of compliance stating that the geotextile meets the requirements of this section. The certificate of compliance shall be attested to by a person having legal authority to bind the geotextile manufacturer.

1.5 DELIVERY, STORAGE AND HANDLING

Delivery, storage, and handling of geotextile shall be in accordance with ASTM D 4873.

1.5.1 Delivery

The Contracting Officer shall be notified a minimum of 24 hours prior to delivery and unloading of geotextile rolls. Rolls shall be packaged in an opaque, waterproof, protective plastic wrapping. The plastic wrapping shall not be removed until deployment. If quality assurance samples are collected, rolls shall be immediately rewrapped with the plastic wrapping. Geotextile or plastic wrapping damaged during storage or handling shall be repaired or replaced, as directed. Each roll shall be labeled with the manufacturer's name, geotextile type, roll number, roll dimensions (length, width, gross weight), and date manufactured.

1.5.2 Storage

Rolls of geotextile shall be protected from construction equipment, chemicals, sparks and flames, temperatures in excess of 160 degrees F, or any other environmental condition that may damage the physical properties of the geotextile. To protect geotextile from becoming saturated, rolls shall either be elevated off the ground or placed on a sacrificial sheet of plastic in an area where water will not accumulate.

1.5.3 Handling

Geotextile rolls shall be handled and unloaded with load carrying straps, a fork lift with a stinger bar, or an axial bar assembly. Rolls shall not be dragged along the ground, lifted by one end, or dropped to the ground.

PART 2 PRODUCTS

2.1 High-Strength Geotextile Used as Reinforcement

Geotextile shall be a pervious sheet of polymeric material and shall consist of long-chain synthetic polymers composed of at least 95 percent by weight polyethylene, polypropylene, or polyesters. The geotextile shall be manufactured with 100 percent virgin resin, and with a maximum of 5 percent in-plant regrind material. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the selvages. Polyester resin shall have a minimum molecular weight of 20,000 and a carboxyl end group number less than 50. Polyethylene and polypropylene shall be stabilized with long term antioxidants.

The geotextile shall be manufactured to the largest loom width possible. Rolls shall be shipped unseamed in the machine-direction, in lengths equal to one of more multiples of the design length. Factory sew geotextile together to provide the maximum cross-machine direction width compatible with shipping and with field handling requirements.

The reinforcement shown on the contract drawings shall meet the property requirements listed in Table 1. Reinforcement strength requirements represent minimum average roll values in the machine direction.

TABLE 1

PROPERTY	REQUIREMENT	TEST DESIGNATION
Long Term Design Strength	2,600 lb/inch	ASTM D 4595
Seam Strength	300 lb/inch	ASTM D 4884
Puncture	400 lbs	ASTM D 4833
UV Resistance	70 percent after 500 hours	ASTM D 4355

2.2 Geotextile Used for Filtration

Geotextile shall be a woven 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. The use of woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape-like character) will not be allowed. Stabilizers and/or inhibitors shall be added to the base polymer, as needed, to make the filaments resistant to deterioration by ultraviolet light, oxidation, and heat exposure. 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 2. Where applicable, Table 2 property values represent minimum average roll values (MARV) in the weakest principal direction. Values for AOS represent maximum average roll values.

TABLE 2
MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE

PROPERTY	UNITS	ACCEPTABLE VALUES	TEST METHOD
GRAB STRENGTH	LBS	250	ASTM D 4632
SEAM STRENGTH	LBS	160	ASTM D 4632
PUNCTURE	LBS	120	ASTM D 4833
TRAPEZOID TEAR	LBS	55	ASTM D 4533
APPARENT OPENING SIZE	U.S. SIEVE	#70	ASTM D 4751
PERMITTIVITY	SEC -1	0.28	ASTM D 4491
ULTRAVIOLET DEGRADATION	PERCENT	50 AT 500 HRS	ASTM D 4355

2.2.1 Thread

Sewn seams shall be constructed with high-strength polyester, nylon, or other approved thread type. Thread shall have ultraviolet light stability equivalent to the geotextile and the color shall contrast with the geotextile.

2.3 MANUFACTURING QUALITY CONTROL SAMPLING AND TESTING

The Manufacturer shall be responsible for establishing and maintaining a quality control program to assure compliance with the requirements of the specification. Documentation describing the quality control program shall be made available upon request. Manufacturing quality control sampling and testing shall be performed in accordance with the manufacturer's approved

quality control manual. As a minimum, geotextiles shall be randomly sampled for testing in accordance with ASTM D 4354, Procedure A. Acceptance of geotextile shall be in accordance with ASTM D 4759. Tests not meeting the specified requirements shall result in the rejection of applicable rolls.

PART 3 EXECUTION

3.1 QUALITY ASSURANCE SAMPLES AND TESTS

3.1.1 Quality Assurance Samples

The Contractor shall provide assistance to the Contracting Officer in the collection of quality assurance samples. Samples shall be collected upon delivery to the site for quality assurance testing at the request of the Contracting Officer. Samples shall be identified with a waterproof marker by manufacturer's name, product identification, lot number, roll number, and machine direction. The date and a unique sample number shall also be noted on the sample. The outer layer of the geotextile roll shall be discarded prior to sampling a roll. Samples shall then be collected by cutting the full-width of the geotextile sheet a minimum of 3 feet long in the machine direction. Rolls which are sampled shall be immediately resealed in their protective covering.

3.1.2 Quality Assurance Tests

The Contractor shall provide quality assurance samples to an Independent Laboratory. Samples will be tested to verify that geotextile meets the requirements specified in Table 1 and 2. Test method ASTM D 4355 shall not be performed on the collected samples. Geotextile product acceptance shall be based on ASTM D 4759. Tests not meeting the specified requirements shall result in the rejection of applicable rolls.

3.2 INSTALLATION

3.2.1 Subgrade Preparation

The surface underlying the geotextile shall be smooth and free of ruts or protrusions which could damage the geotextile. Subgrade materials and compaction requirements shall be in accordance with Section 02235.

3.2.2 Placement of Geotextile for Reinforcement

The Contractor shall notify the Contracting Officer a minimum of 24 hours prior to installation of geotextile. Geotextile rolls which are damaged or contain imperfections shall be repaired or replaced as directed.

a. Before placing reinforcement, the subgrade or subsequent lift of fill shall be compacted and graded level. The surface shall be smooth and free of windrows, sheepsfoot impressions, and rocks.

b. Reinforcement shall be placed at the elevations and to the extent shown on the construction drawings and the approved shop drawing submittal. Reinforcement shall be oriented with the design strength

axis perpendicular to the slope face.

c. The reinforcement shall be installed in tension. The reinforcement shall be pulled taut and anchored with staples or stakes prior to placing the overlying lift of fill. The tension shall be uniform along the length of the slope and consistent between layers.

d. Fill and Backfill shall be placed from the slope face back toward the fill area to ensure that the reinforcement remains taut. Fill shall be placed, spread, and compacted in such manner that minimizes the development of wrinkles in or movement of the reinforcement.

e. A minimum fill thickness of 6 inches is required prior to operation of vehicles over the reinforcement. Sudden braking and sharp turning shall be avoided. Tracked equipment shall not turn within the reinforced fill zone to prevent tracks from displacing the fill and damaging the reinforcement. Construction equipment shall not be operated directly upon the reinforcement as part of the planned construction sequence. Rubber tired equipment may operate directly on the reinforcement if the travel is infrequent, equipment travels slow, turning is minimized, and no damage or displacement to the reinforcement is observed.

3.2.3 Placement of Geotextile for Filtration

The Contractor shall notify the Contracting Officer a minimum of 24 hours prior to installation of geotextile. Geotextile rolls which are damaged or contain imperfections shall be repaired or replaced as directed. The geotextile shall be laid flat and smooth so that it is in direct contact with the subgrade. The geotextile shall also be free of tensile stresses, folds, and wrinkles. On slopes steeper than 10 horizontal on 1 vertical, the geotextile shall be laid with the machine direction of the fabric parallel to the slope direction. Geotextile shall not be covered prior to inspection and approval by the Contracting Officer. Cover soil shall be placed in a manner that prevents soil from entering the geotextile overlap zone, prevents tensile stress from being mobilized in the geotextile, and prevents wrinkles from folding over onto themselves. On side slopes, soil backfill shall be placed from the bottom of the slope upward. Cover soil shall not be dropped onto the geotextile from a height greater than 3 feet. No equipment shall be operated directly on top of the geotextile without approval of the Contracting Officer. Equipment with ground pressures less than 7 psi shall be used to place the first lift over the geotextile. A minimum of 12 inches of soil shall be maintained between full-scale construction equipment and the geotextile. Cover soil material type, compaction, and testing requirements are described in Section 02235. Equipment placing cover soil shall not stop abruptly, make sharp turns, spin their wheels, or travel at speeds exceeding 5 mph.

3.3 SEAMS

3.3.1 Overlap Seams

Geotextile panels for filtration shall be continuously overlapped a minimum of 18 inches at all longitudinal and transverse joints. Geotextile for

reinforcement shall not be overlapped, but sewn as specified. Where seams must be oriented across the slope, the upper panel shall be lapped over the lower panel. Sewn seams may be used instead of overlapped seams.

3.3.2 Sewn Seams

Factory and field seams shall be continuously sewn on the geotextile for reinforcement. The stitch type used shall be a 401 locking chain stitch or as recommended by the manufacturer. For field and factory seams which are sewn, the Contractor shall provide at least a 2-meter sample of sewn seam before the geotextile is installed. For seams that are field sewn, the seams shall be sewn using the same equipment and procedures as will be used for the production seams. Quality Assurance seam samples shall be provided to the Government at the request of the Contracting Officer. 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. No seams are allowed in the machine direction.

3.4 PROTECTION

The geotextile shall be protected during installation from clogging, tears, and other damage. Damaged geotextile shall be repaired or replaced as directed. Adequate ballast (e.g. sand bags) shall be used to prevent uplift by wind. The geotextile shall not be left uncovered for more than 14 days after installation.

3.5 REPAIRS

Torn or damaged geotextile for filtration shall be repaired. Torn or damaged geotextile for reinforcement shall be removed and replaced. 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 12 inches beyond the edge of the damaged area. Patches shall be continuously fastened using approved methods. 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

3.6 PENETRATIONS

Engineered penetrations of the geotextile shall be constructed by methods recommended by the geotextile manufacturer.

-- End of Section --

SECTION 02881

DREDGING
08/02

PART 1 GENERAL

1.1 PLANT

Plant and equipment employed on the dredging work shall be in satisfactory operating condition, capable of safely and efficiently performing the work as indicated or specified, and shall be subject to inspection and approval by the Government at all times. Equipment and machinery, including pipelines and supporting plant, shall be subject to inspection and approval by the Government and kept in good condition at all times. A complete listing of all dredging plant and machinery to be used in the work, including booster pumps, skiffs, barges, and other related equipment, shall be submitted. The listing shall include year and manufacturer, operational capacities, safety features, operating and licensing requirements for operators, and a description where and how the item of equipment or plant will be employed in the work. Any leaks or deficiencies shall be promptly and properly repaired. No reduction in the capacity of the plant, once inspected and approved by the Government to be sufficient for employment on the work, shall be made except by written permission of the Contracting Officer. The measure of the "capacity of Plant" shall be its actual performance on the work to which these specifications apply. The Contractor shall not remove any plant from this job until all scheduled work is completed and accepted by the Government, unless first approved in writing by the Contracting Officer. The Contractor shall submit, as a part of the Work Plan and Quality Control Plan, the manufacturer's pump curve for each pump to be used during the project. This submittal shall be provided by the Contractor for the purpose of verifying his available plant capacity is sufficient to accomplish the scheduled work in accordance with all contract requirements. The submittal shall include the dredge's main pump, and if applicable, the ladder pump and any booster pump(s) to be used on the contract. If a substitution of equipment occurs during the contract, the pump curve of the new pump(s) shall be submitted at the time of substitution and recorded in the Daily Report of Operations. Each pump curve submitted shall be clearly designated with the dredge name, contract number, pump function (main pump, ladder pump, or booster pumps) and pump size. The pump curves shall indicate each respective pump's performance (i.e., pump Hp, efficiency and rpm's) for water plotted against hydraulic head and discharge velocity and GPM's. All data provided must be accompanied with documentation verifying the pumps to be utilized in this work have provided this efficiency on previous work in conditions and for material to be removed similar to that to be accomplished for this contract. All floating plant and pipelines used as accessways or working platforms shall be equipped with walkways and guardrails conforming to Corps of Engineers Manual EM 385-1-1 and meet OSHA requirements for worker safety. All buoyant (plastic) dredge pipelines that are used on this contract shall be weighted or anchored securely to the bottom so that the pipeline will stay on the bottom, and marked with floats or buoys during

daylight and amber lights during darkness to mark distinctly the entire length and course of the line.

1.2 CHARACTER OF MATERIALS

The material to be removed from within the dredging limits indicated on the contract drawings is primarily native soils consisting of sand and sandy clay that have collected behind the dam area since the dam was constructed in 1906. The Contractor should anticipate encountering some areas representing new work dredging. Throughout the area to be dredged, the Contractor may also encounter discarded objects, including but not necessarily limited to trash, debris, concrete blocks and rubble, various types of rope and wire, rubber tires, and other materials that are unsuitable for discharge into the disposal area. All unsuitable debris and similar material encountered by the Contractor's work operations shall be removed from the placement area by separating from acceptable material pumped into the disposal area and removed from the site and disposed in approved land fills as specified. Bidders are expected to examine the site of work and decide for themselves the character and state of the materials. The Contractor shall be fully responsible for his evaluation of character and state of the materials and his selection of equipment necessary to complete the construction of work specified. Local minor variations in the subsurface materials are to be expected and if encountered will not be considered as being materially different within the purview of Contract Clause "Differing Site Conditions".

1.3 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures":

SD-01 Preconstruction and Postconstruction Submittals

Dredging and Dredged Material Placement Plan; G

Prior to commencement of dredging, submit a plan for sequence of dredging, dredging methods and plant utilized, pipeline location and material placement requirements, protection of structures, equipment, and land features.

Notice to Mariners; FIO

Submit a copy of Notice to Mariners at same time sent to Fifth Coast Guard District.

SD-07 Certificates

Equipment and Machinery Operator Authorization

The Contractor shall submit a list of designated personnel qualified and authorized to operate machinery and equipment. The list shall be maintained at the job site in a current status at all times.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 REMOVAL AND PLACEMENT OF EXCAVATED MATERIAL

The dredge material shall be removed by hydraulic dredge and transported by pipeline to the upland placement area as indicated. The contractor shall be responsible for providing all discharge pipeline for deposit within the designated area. Pipelines shall be placed across the top of the dike in such a manner as not to damage the access road or the levee. The Contractor shall employ proper dredging and placement methods to ensure that the minimum adequate ponding depth is maintained and that a minimum of two feet of freeboard, measured at the minimum containment dike elevation, is maintained at all times. The Contractor shall immediately suspend dredging and placement operations in the event of any containment dike failure or if dike failure appears to be imminent. The Contractor may resume work only after suitable permanent repairs to the containment dike have been made. The Contractor shall provide at least two competent employees to monitor the Contractor's operations, including but not limited to the discharge of material, level of ponding, condition of the dikes, and release of effluent from the Placement Area. The number of employees is expressed as a minimum; accordingly, the Contractor is responsible to provide at his expense the number of employees required to accomplish all work as indicated and specified. If during the approval of the Contractor's Environmental Protection Plan, Work Plan, Safety Plan, Activity Hazard Analysis, or during observance of his work the Contracting Officer determines the Contractor's staff on site to be insufficient, additional employees in a number as directed by the Contracting Officer will be provided by the Contractor at his expense. Any damages that result from the negligence of the Contractor to properly manage the dredged material placement and properly maintain the containment dikes shall be fully repaired by the Contractor at his own expense. The Contractor shall leave the placement site in a well maintained condition. The spillbox shall be well maintained with the boards at the correct level and free of trash and debris at all times. The Contractor shall perform grading and ditching as necessary to eliminate undrained areas within the containment area.

3.1.1 Dredged Material Discharge Requirements

The Contractor is responsible to ensure all portions of the levees and spillboxes are adequate and in proper working order before commencement of placement operations. The Contractor shall install a baffle plate, diffuser, or other approved apparatus to the discharge end of the dredge pipeline that shall precisely control the placement of the dredged material and increase the settlement rate of the material to the maximum extent practicable. Upon completion of material placement operations, the entire interior area of the placement area shall be uniformly smooth-graded to assure positive drainage and elimination of undrained pockets and abrupt humps. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from blade-grader operations. At the completion of the scheduled work, the Contractor shall leave the spillbox in a well-maintained and operable condition to assure adequate site drainage.

3.1.1.1 Water Quality Monitoring Controls

In addition to the requirements specified in subparagraph "Control of Dredging Area and Placement Area Effulent" of this SECTION, the Contractor shall take all precautions that in the opinion of the Contracting Officer may be necessary to minimize the escape of dredged material into the navigable waters. Water samples of nearby navigable waters shall be taken daily at locations approved by the Contracting Officer during dredging operations up current and down current from the dredge and placement area and above the raceway dam and below Embrey Dam. These samples shall serve as the benchmark water quality standard for which measurements of samples taken in the vicinity down current of the dredging area and placement area shall be compared. Water samples from the water surface in the vicinity immediately down current of the placement area and at the spillbox shall be taken as often as necessary to conform to the requirements as specified. Water samples immediately down current from the dredge and placement area shall be taken not less than once during each six hour period daily, and samples at the spillbox not less than twice daily. Density tests shall be performed on all water samples as outlined in paragraph titled "Control of Placement Area Effluent". In the event a water sample taken down current from the dredge, down current from the vicinity of the placement area, or at the spill box proves to be greater than 5 grams per liter in excess of the density of the water sample taken up current in the vicinity of the placement area or the area being dredged established as the benchmark water quality standard, dredging operations shall be stopped immediately or the discharge flow shall be reduced. Dredging can resume maximum operations once the difference in the density tests becomes less than 5 grams per liter. All samples taken shall be recorded by the contractor and included with the Daily Report of Operations. The Contractor shall provide constant monitoring of the placement operations when dredging and material placement operations are in progress. Monitoring personnel shall have fully functional two-way radio communications with the dredge operator at all times when dredging is in progress. Frequent communication checks shall be made to assure proper material placement during dredging operations. In the event of any communications failure or improper material placement is determined, all dredging and placement operations shall be immediately suspended until communications are restored as approved by the Contracting Officer, or in the event of improper material placement, until proper material placement procedures are reestablished by the Contractor as approved by the Contracting Officer. All costs resulting from suspensions of work as specified above shall be the responsibility of the Contractor and at no additional expense to the government.

3.2 DREDGING AREA AND PLACEMENT AREA CONTROL

The Contractor shall be responsible for the layout of all work and have all markings placed in the field marked by a licensed Professional Engineer or Surveyor currently licensed in the Commonwealth of Virginia. The markings shall be placed in the immediate work areas only and shall be removed once a work area has been accepted. The Government will establish the tide staff gauge within vicinity of the respective dredging areas. The in-place markings shall be verified by the Government before dredging and dredged material placement operations commence. The Contractor shall be responsible

for dredging within the areas and prisms as shown, and to deposit the dredged material at the locations indicated. The Contractor shall establish and maintain at his own expense all markings of the dredging and placement areas and shall remove same upon completion of the work.

3.3 QUALITY CONTROL

The contractor shall establish and maintain a quality control system for all dredging operations to assure compliance with contract requirements and record his inspections and tests under this system.

3.3.1 Warning Signs

The contractor shall erect and maintain at his own expense suitable navigation warning signs at each end of a submerged pipeline and at any other points necessary to prevent hazards to navigation.

3.3.2 Examination of Pipeline

The pipeline, including connections used for a submerged line, shall be examined and determined to be in good condition to reasonably expect it to last throughout the job without wearing to the extent of allowing leaks. In the event that leaks occur anywhere in the pipeline, the contractor will be required to immediately discontinue using the respective equipment until the leaks are stopped. The contractor shall also be required to recover at no cost to the Government any material improperly placed because of a leak or leaks in the equipment.

3.3.3 Inspections and Testing Requirements

Inspections and testing shall be the responsibility of the Contractor, subject to the approval of the Contracting Officer.

3.3.3.1 Control of Dredging Area and Placement Area Effluent

The density of the effluent shall be determined by a hydrometer or weight-volume method as hereinafter specified. The Contractor will have the option of the hydrometer method when settled solids are not present in the sample. When settled solids are present the weight-volume method shall be employed for density determinations. The same technique shall be used for making the water density determinations in the vicinity of the benchmark area as in the respective work and placement areas. When the hydrometer is used, an instrument such as Fisher Brand #14-331-5C2, or approved equal, shall be used. When the weight-volume method is employed, a 1,000 c.c. laboratory cylinder and a scale or balance capable of weighing the sample and cylinder to the nearest gram shall be used.

3.3.4 Equipment and Machinery Requirements

All measuring equipment, global positioning systems (GPS) and other electronic positioning systems, data plotting and recording equipment, and the procedures associated with each respective item of equipment, shall be subject to the approval of the Contracting Officer. Verification of current calibration for each respective item of equipment, as approved by

the Contracting Officer, shall be provided by the Contractor prior to use of the equipment on the work. All records produced by the equipment shall be inspected and certified as complete by the Contractor's Quality Control Representative and included as a part of the Daily Quality Control Report.

3.3.5 Miscellaneous Inspections and Test Records

A copy of the records of all inspections and tests, as well as record of corrective action taken, shall be included in the Control Plan and furnished to the Contracting Officer as a part of the Daily Quality Control Report.

3.3.6 Reporting and Certificates

All measuring, plotting, and recording equipment and procedures shall be subject to the approval of the Contracting Officer. Verification of their calibration, certified by the Contractor's Quality Control Representative, shall be furnished prior to use on the work. All records produced by the equipment shall be authenticated by the authorized representative of the contractor and then provided to the Contracting Officer with the Daily Report of Operations.

3.4 DAILY REPORTING REQUIREMENT

The Contractor shall prepare and maintain a Daily Report of Operations and furnish copies daily to the Contracting Officer. A copy of the form prescribed for recording the required information and any further instructions on the preparation of the report will be furnished at the preconstruction conference noted in Section 01005. The Contractor shall also furnish the following item daily to the Contracting Officer during dredging operations:

(1) Copy of dredge leverman's log

(2) Records of dredge pump vacuum and pressure gauge readings

3.5 REQUIRED DREDGING PRISM, OVERDEPTH, AND SIDE SLOPES

3.5.1 Required Dredging Prism

Within the specific areas indicated to be dredged or areas approved by the Contracting Officer, the required dredging prism is defined by the required depths and applicable side slopes as indicated and specified. The actual quantity within the required dredging prism will be computed from the last surveys made before dredging.

3.5.2 Overdepth

To cover inaccuracies of the dredging process, material actually removed from within the specific areas to be dredged to a depth of not more than one foot below the required depth will be estimated and paid for at the contract price.

3.5.3 Side Slopes

Material actually removed, within limits approved by the Contracting Officer, to provide for final side slopes not flatter than 1 vertical on 3 horizontal, but not in excess of the amount originally lying above this limiting side slope, will be estimated and paid for, whether dredged in original position or by dredging space below the pay slope plane at the bottom of the slope for upslope material capable of falling into the cut. In computing the limiting amount of side-slope dredging an overdepth of one foot measured vertically will be used.

3.5.4 Method of Obtaining Soundings

Soundings to determine the volume of material removed under this contract will be made with an Innerspace Technology, Inc. Model 448 Thermal Depth Sounder Recorder with an operating frequency of 208 kilohertz and a 3 degree beamwidth at -3db. The equipment will be calibrated by the bar/ball check or velocity probe method to compensate for variations of the velocity of sound in water.

3.5.5 Basis of Surveys

The Government hydrographic surveys shall be the sole basis for determining payment for dredging and final acceptance.

-- End of Section --

SECTION 03300

CAST-IN-PLACE STRUCTURAL CONCRETE
08/02

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

Mixture Proportions; G

The results of trial mixture design studies along with a statement giving the maximum nominal coarse aggregate size and the proportions of ingredients that will be used in the manufacture of each strength or class of concrete, at least 14 days prior to commencing concrete placing operations. Aggregate weights shall be based on the saturated surface dry condition. The statement shall be accompanied by test results from an approved independent commercial testing laboratory, showing that mixture design studies have been made with materials proposed for the project and that the proportions selected will produce concrete of the qualities indicated. No substitutions shall be made in the materials used in the mixture design studies without additional tests to show that the quality of the concrete is satisfactory.

SD-04 Samples

SD-06 Test Reports

Strength, Slump, Air Content and Temperature Tests

SD-07 Certificates

Qualifications; G

Written documentation for Contractor Quality Control personnel.

PART 2 PRODUCTS

2.1 Concrete

CONCRETE for cast-in-place work shall conform to ASTM C94.

2.1.1 Strength (28-day) shall be 4,000 psi.

2.1.2 Cement shall be Type II.

2.1.3 Maximum aggregate size shall be 3/4".

2.1.4 Maximum water to cement ration shall be 0.35.

2.1.5 Slump shall be 3 inches maximum.

2.1.6 Air content shall be 4 to 7 percent.

2.2 REINFORCEMENT

Deformed, Grade 60, conform to ACI 301.

2.3 FORM MATERIAL

Conform to ACI 301.

2.4 CURING MATERIAL

Conform to ACI 301.

PART 3 EXECUTION

3.1 FORMWORK

Conform to ACI 301.

3.2 INSTALLATION OF REINFORCING

Conform to ACI 301.

3.3 BATCHING, MIXING AND TRANSPORTING CONCRETE

Conform to ACI 301, ACI 304, ACI 305R, AND ACI 306R except as otherwise specified.

3.4 PROTECTION

Conform to ACI 301.

3.5 FINISHING CONCRETE

Conform to ACI 301.

3.6 TESTING AND ACCEPTANCE OF CONCRETE

Strength tests, slump test, air content tests, and temperature tests shall be performed at the Contractor's expense in accordance with ACI 301. All tests shall be submitted for approval.

SECTION 05120

STRUCTURAL STEEL
08/02

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 the basic designation only.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC ASD Manual	(1989) Manual of Steel Construction Allowable Stress Design

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 653 (1997) Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

ASTM A 36	(1997a) Carbon Structural Steel
ASTM A 123	(1997a) Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 307	(1997) Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1	(1998) Structural Welding Code - Steel

1.2 GENERAL REQUIREMENTS

The Contractor shall be responsible for correctness of detailing, fabrication, and for the correct fitting of structural members. Substitution of sections or modification of connection details, or both, will not be accepted by the Government. Connections fully designed and detailed on the contract drawings shall be provided as shown. Members and connections, for any part of the structure, not shown on the contract drawings shall be the Contractor's responsibility; such connections shall be considered standard and designed and detailed in accordance with AISC ASD Manual. Welding shall be in accordance with AWS D1.1.

1.3 SUBMITTALS

The Contractor shall make submittals for the following listed reports and certificates as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work. 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) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken in accordance with SECTION 01440. 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

Spillbox Erection Plan; G, COR

Submit drawings showing plans and details for framing, dimension of members, concrete work and structural framing sequences substantiating finished construction, indicate and describe all necessary temporary supports including the sequence of installation and removal.

SD-03 Product Data

Plant Reports

Reports of inspections and tests, including analysis and interpreting of test results required to verify quality standards are met for materials provided.

SD-07 Certificates

Certified copies of welders qualification test records showing qualification in accordance with AWS D1.1.

1.4 STORAGE

Material shall be stored out of contact with the ground in such manner and location as will minimize deterioration.

PART 2 PRODUCTS

2.1 STRUCTURAL STEEL

Steel shall be galvanized in accordance with ASTM A123 and A653, as applicable. Galvanizing shall be performed after fabrication to the maximum extent practical. Any galvanized areas removed for welding or is otherwise abraided by the Contractor's work operations shall be cleaned and painted with a zinc-rich coating of the same quality as that used for the G90 galvanizing as specified.

2.1.1 Carbon Grade Steel

Carbon grade steel shall conform to ASTM A 36, galvanize G90.

2.1.2 Anchor Bolts

ASTM A 307, size intended for installation required, galvanize G90.

2.1.3 Miscellaneous Anchors and Cables

Screw type anchors shall have a minimum holding strength of 10 kips and be recommended by the manufacturer for the intended use. Other anchors shall be provided at locations indicated and be recommended by the manufacturer for the intended use. Markings shall identify the strength and grade, galvanize G90. Cables shall each be provided with cable couplings for adjusting cable tension.

2.1.4 Spillbox Ladder

A steel ladder shall be provided on the interior of the spillbox at the immediate juction of the access walkway and opening at top of spillbox. The ladder rungs shall not be less than 3/4 inch diameter spaced 12 inches apart. Ladder and associated structural connections shall be galvanized after fabrication in conformance with ASTM A 123.Text

2.1.5 Steel Items Not Galvanized

Ferrous items not galvanized shall be painted in accordance with SSPC Paint System 15.03

PART 3 EXECUTION

3.1 STEEL FABRICATIONEQUIPMENT

AISC ASD Manual of Steel Construction.

3.2 FIELD WELDED CONNECTIONS

AWS D1.1.

3.3 PAINTING

SSPC Painting System No. 15.03.

-- End of Section --