



**US Army Corps
of Engineers**
Kansas City District
You Matter - We Care

Construction of

Upgrade Night Fire and Automated Record Fire Ranges

PN23303 & PN16032

Fort Leonard Wood, Missouri

FY2002

June 2002

DEPARTMENT OF THE ARMY
 Kansas City District, Corps of Engineers
 757 Federal Building
 Kansas City, Missouri 64106

SPECIFICATIONS FOR CONSTRUCTION OF
 UPGRADE NIGHT FIRE AND AUTOMATED RECORD FIRE RANGES
 FORT LEONARD WOOD, MISSOURI

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(NOT USED)

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NO.	2. TYPE OF SOLICITATION	3. DATE ISSUED	PAGE OF	PAGES
	DACA41-02-R-0006	<input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	06/28/2001	1	78

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

4. Contract No.	5. REQUISITION/PURCHASE REQUEST NO. W58XUW207811937	6. PROJECT NO. PN23301 / PN16032
7. ISSUED BY U.S. Army Engineer District, Kansas City 760 Federal Building, 601 E. 12th Street Kansas City, Missouri 64106-2896 Tel: (816) 983-3845 Fax: (816) 426-5169	CODE	8. ADDRESS OFFER TO See Item 7
9. FOR INFORMATION CALL:	A. NAME Gregg C. Gullede	B. TELEPHONE NO. (Include area code) Ext. (816) 983-3808 (NO COLLECT CALLS)

SOLICITATION

NOTE: In sealed bid solicitation "offer" and "offeror" mean "bid" and "Bidder".

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

Construction of Upgrade Night Fire and Automated Record Fire Ranges,
Fort Leonard Wood, Missouri

Description of Work: The work to be performed consists of upgrading a Night Fire Range to a Modified Record Fire Range and of converting an existing 25-Meter Range to a Modified Record Fire Range.

11. The Contractor shall begin performance within 10 calendar days and complete it within 365 calendar days after receiving award notice to proceed. This performance period is mandatory, negotiable. _____)

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? <i>(If "YES", indicate within how many calendar days after award in Item 12B.)</i> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	12B. CALENDAR DAYS 10
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13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and one copies to perform the work required are due at the place specified in Item 8 by 2:00 PM local time 07/31/2002 (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee is, is not required. NOT TO EXCEED 20% OF TOTAL BID AMOUNT

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.

00010-1

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)	15. TELEPHONE NO. (Include area code) (FAX # _____)
DUNS NO: CODE FACILITY CODE	16. REMITTANCE ADDRESS (Include only if different from Item 14)

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 90 calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)

AMOUNTS: See attached Proposal Schedule.

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

19. ACKNOWLEDGEMENT 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 <i>(Type or print)</i>	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 <i>(4 copies unless otherwise specified)</i>	ITEM	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO
26. ADMINISTERED BY	CODE	<input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 253(c) ()
27. PAYMENT WILL BE MADE BY		

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

<input type="checkbox"/> 28. NEGOTIATED AGREEMENT (Contractor is required to sign this document and return <u> </u> copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements 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 incorporated by reference in or attached to this contract.	<input type="checkbox"/> 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 commutes 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 of print)	31A. NAME OF CONTRACTING OFFICER (Type or print)
30B. SIGNATURE	31b. UNITED STATES OF AMERICA 31C. AWARD DATE

Project: Construction of Upgrade Night Fire Range and Automatic Fire Range, PN23301 and PN 16032
 Location: Fort Leonard Wood, Missouri

PROPOSAL SCHEDULE

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>AMOUNT</u>
0001	PN 23301 - UPGRADE NIGHT FIRE RANGE		
0001AA	Design Work for Night Fire Range	lump sum	\$_____
0001AB	Night Fire Range Buildings	lump sum	\$_____
0001AC	Site Work for Night Fire Range	lump sum	\$_____
0001AD	Utility Work for Night Fire Range	lump sum	\$_____
0002	PN 16032 - AUTOMATIC FIRE RANGE		
0002AA	Design Work for Automated Record Fire Range	lump sum	\$_____
0002AB	Automated Record Fire Range Buildings	lump sum	\$_____
0002AC	Site Work for Automated Record Fire Range	lump sum	\$_____
0002AD	Utility Work for Automated Record Fire Range	lump sum	\$_____
TOTAL \$			_____

NOTICE TO OFFERORS: For your bid to be responsive, you must declare below the single accounting practice that you apply to contracts to calculate field office overhead for all change orders, modifications and requests for equitable adjustment. Pursuant to Federal Acquisition Regulations (FAR) Parts 31.105(d)(3) and 31.203(d)(1), an accounting practice that varies from modification to modification is not allowable. Select one of the following:

1. TIME DISTRIBUTION BASE FOR A PER DIEM RATE

If you use this practice, see Special Clause
"Field Office Overhead Per Diem Rate".

2. DIRECT COST DISTRIBUTION BASE FOR A PERCENTAGE MARKUP

If you use this practice, see Special Clause
"Field Office Overhead Percentage Markup".

**3. OTHER ACCOUNTING PRACTICE THAT IS ALLOWABLE
UNDER THE FAR AND THAT USES A SINGLE DISTRIBUTION BASE**

**YOU MUST DESCRIBE THE ACCOUNTING PRACTICE IN SUFFICIENT DETAIL
BELOW TO ALLOW THE CONTRACTING OFFICER TO DETERMINE WHAT
ACCOUNTING PRACTICE IS BEING UTILIZED BY YOUR COMPANY AND THAT IT
COMPLIES WITH THE FAR.**

**FAILURE TO FULLY COMPLY WITH THE ABOVE REQUIREMENT OR, IF ALTERNATE 3 IS
DECLARED, FAILURE TO PROVIDE A DESCRIPTION WHICH CLEARLY STATES OR DESCRIBES A
CONSISTENT ACCOUNTING PRACTICE USING A SINGLE DISTRIBUTION BASE, WILL BE CAUSE
FOR YOUR BID TO BE REJECTED.**

NOTES:

- (1) Proposal prices must be entered for all items of the Proposal Schedule. Award will be made as a whole to one Contractor on the basis of price and price-related factors. Offeror's attention is directed to SECTION 01120 BASIS FOR AWARD for further details.
- (2) If a modification to an offer is submitted which provides for a lump sum adjustment to the total cost, the application of the lump sum adjustment to each price in the Proposal Schedule must be stated. If it is not stated, the offeror agrees that the lump sum adjustment shall be applied on a pro rata basis to every price in the Proposal Schedule.
- (3) Offeror's attention is directed to SECTION 00100 paragraph titled "Arithmetic Discrepancies" wherein are procedures for correction of errors.
- (4) Offeror's attention is directed to SECTION 01100: GENERAL for special provisions pertaining to this Solicitation.
- (5) Offeror's attention is directed to SECTION 01100, paragraph titled "Missouri Sales and Use Tax".
- (6) Offeror's attention is directed to the CONTRACT CLAUSES wherein the apparent low offeror is required to submit a subcontracting small business and small disadvantaged business subcontracting plan. The subcontracting plan shall be submitted on the fourteen-page form (SB-1 thru SB-14) which appears at the end of SECTION 00600. Submission of the plan is required prior to award. Award will not be made under this solicitation before the plan is approved by the Contracting Officer.
- (7) Offeror's attention is directed to the CONTRACT CLAUSES, FAR 52.223-9, Certification and Estimate of Percentage of Recovered Material Content for EPA-Designated Items. Certification will be required upon contract completion unless a waiver has been approved by the Contracting Officer. The waiver must be approved prior to contract award.

- (8) The Government will procure this facility through a Best Value competition acquisition in accordance with the provisions set forth in the Request For Proposals (RFP).

POC

Contract Specialist	Greg Gulledge	983-3808	Gregg.C.Gulledge@usace.army.mil
Project Manager	Michelle Riley	983-3275	Michele.Riley@usace.army.mil

- (9) The general outline of the principal features of each item as listed does not in any way limit the responsibility of the offeror for making a thorough investigation of the drawings and specifications to determine the scope of work included in each item. Description of Bid Items are supplemented as follow:
- (a) Item No. 0001AA, "Design Work for Night Fire Range", includes all required work to design the Night Fire Range.
 - (b) Item No. 0001AB, "Night Fire Range Buildings", includes all work within the lines, 5-feet outside the Night Fire Range building lines, except that work covered by Item No. 0001AA.
 - (c) Item No. 0001AC, "Site Work for Night Fire Range", includes all work required beyond the lines, 5-feet outside the building lines, except that work covered by Item Nos. 0001AA and 0001AD.
 - (d) Item No. 0001AD, "Utility Work for Night Fire Range", includes all work required beyond the lines, 5-feet outside the building lines, to provide the utilities, except that work covered by Item Nos. 0001AA.
 - (e) Item No. 0002AA, "Design Work for Automated Record Fire Range", includes all required work to design the Automated Record Fire Range.
 - (f) Item No. 0002AB, "Automated Record Fire Range Buildings", includes all work within the lines, 5-feet outside the Automated Record Fire Range building lines, except that work covered by Item No. 0002AA.
 - (g) Item No. 0002AC, "Site Work for Automated Record Fire Range", includes all work required beyond the lines, 5-feet outside the building lines, except that work covered by Item Nos. 0002AA and 0002AD.
 - (h) Item No. 0002AD, "Utility Work for Automated Record Fire Range", includes all work required beyond the lines, 5-feet outside the building lines, to provide the utilities, except that work covered by Item Nos. 0002AA.

CAUTION!

BEFORE SIGNING AND MAILING THIS PROPOSAL, please take note of the following, as failure to perform any one of these actions may cause your offer to be rejected.

1. AMENDMENTS: Have you acknowledged receipt of ALL Amendments? If in doubt as to number of amendments issued, please contact our office.
2. SEALED PROPOSALS: Sealed envelopes containing proposals shall be marked to show the offeror's name and address, the solicitation number, amendments received, and the date and time proposals are due.
3. AMENDED PROPOSAL PAGES: If any of the Amendments furnished amended proposal pages, the amended proposal pages must be used in submitting your proposal.
4. LATE PROPOSALS: In order for a late mailed proposal to be considered, generally it must have been sent by either registered or certified mail not later than 5 calendar days before the receipt of proposals date.
5. PROPOSAL GUARANTEE: Sufficient proposal guarantee in proper form must be furnished with your proposal, if your proposal exceeds \$50,000.
6. MISTAKE IN PROPOSAL: Have you reviewed your proposal prices for possible errors in calculations or work left out?
7. TELEGRAPHIC MODIFICATIONS: If you modify your proposal by telegram, be sure to allow sufficient time for the telegram to reach us prior to the time set for receipt of proposals. Any doubt should be resolved in favor of allowing Extra Time.
8. FACSIMILE PROPOSALS, MODIFICATIONS, OR WITHDRAWALS: Will not be considered.
9. SECTION 00600: Certifications must be completed and submitted with your proposal. Small Business and Small Disadvantaged Business Subcontracting Plan, found at the end of Section 00600, must be submitted prior to award.
10. HAND-DELIVERED PROPOSAL: If proposals are hand-delivered, you must be aware of security requirements in effect in the Federal Building. No additional time will be allowed due to security requirements.
11. BUY AMERICAN ACT: All offerors are cautioned that, prior Government conduct notwithstanding, the Contractor's selection of a domestic construction material (as defined in SECTION 00700) which would require the subsequent selection of a foreign construction material for compatibility is not a justification for waiver of the Buy American Act. It is the Contractor's responsibility to verify, prior to submitting the materials for approval, that each system can be built to meet the contract specifications without the use of foreign construction materials .

PLANS AND SPECIFICATIONS

Plans and specifications will be available only on CD-ROM, and will be free of charge. A street address must be provided when requesting a CD-ROM. Requests for the CD-ROM must be made via the Internet at <http://www.nwk.usace.army.mil/contract/contract.html>.

THE MAGNITUDE OF THIS PROJECT IS REPRESENTED BY THE FOLLOWING ESTIMATED PRICE RANGE (See FAR 36.204): **Between \$5,000,000.00 and \$10,000,000.00.**

SECTION 00100 Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY REFERENCE:

52.204-6	Data Universal Numbering System (DUNS) Number	JUN 1999
52.211-2	Availability of Specifications Listed in the DoD Index of Specifications and Standards (DODISS) and Descriptions Listed in the Acquisition Management Systems and Data Requirements Control List, DOD 5010.12-L	DEC 1999
52.211-6	Brand Name or Equal	AUG 1999

CLAUSES INCORPORATED BY FULL TEXT

52.211-14 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation. [Contracting Officer check appropriate box.]

(End of provision)

52.214-5000 ARITHMETIC DISCREPANCIES (MAR 1995)

- (a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of the bidding schedule as submitted by the bidder:
- (1) Obviously misplaced decimal points will be corrected;
 - (2) Discrepancy between unit price and extended price, the unit price will govern;
 - (3) Apparent errors in extension of unit prices will be corrected;
 - (4) Apparent errors in addition of lump-sum and extended prices will be corrected.
- (b) For the purpose of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.
- (c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

(End of Statement)

52.215-1 INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (MAY 2001)

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

“Discussions” are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

In writing, writing, or written means any worded or numbered expression that can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

“Proposal modification” is a change made to a proposal before the solicitation's closing date and time, or made in

response to an amendment, or made to correct a mistake at any time before award.

“Proposal revision” is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

“Time”, if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) Amendments to solicitations. If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) Submission, modification, revision, and withdrawal of proposals. (1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show--

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals 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.

(3) Submission, modification, or revision, of proposals.

(i) Offerors are responsible for submitting proposals, and any modifications, or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is “late” and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, 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 proposals; or

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

(3) It is the only proposal received.

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

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

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals 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.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) Offer expiration date. Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) Restriction on disclosure and use of data. Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall--

(1) Mark the title page with the following legend: This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with-- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the following legend: Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) Contract award. (1) The Government intends to award a contract or contracts resulting from this solicitation to

the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

- (2) The Government may reject any or all proposals if such action is in the Government's interest.
- (3) The Government may waive informalities and minor irregularities in proposals received.
- (4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.
- (5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.
- (6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.
- (7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.
- (8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.
- (9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.
- (10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.
- (11) The Government may disclose the following information in postaward debriefings to other offerors:
 - (i) The overall evaluated cost or price and technical rating of the successful offeror;
 - (ii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection;
 - (iii) A summary of the rationale for award; and
 - (iv) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

(End of provision)

52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997)

(a) Exceptions from cost or pricing data. (1) In lieu of submitting cost or pricing data, offerors may submit a written request for exception by submitting the information described in the following subparagraphs. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an

exception should be granted, and whether the price is fair and reasonable.

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

(ii) Commercial item exception. For a commercial item exception, the offeror shall submit, at a minimum, information on prices at which the same item or similar items have previously been sold in the commercial market that is adequate for evaluating the reasonableness of the price for this acquisition. Such information may include--

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

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

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

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

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

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

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

(End of provision)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a **FIRM FIXED PRICED** contract resulting from this solicitation.

(End of clause)

52.217-5 EVALUATION OF OPTIONS (JUL 1990)

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).

(End of Provision)

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

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

(End of provision)

52.228-1 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 TWENTY (20%) percent of the bid price or \$3,000,000.00, 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.

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

CHARLENE A. POINTS
C/O KANSAS CITY DISTRICT, CORPS OF ENGINEERS
ROOM 760 FEDERAL BUILDING
601 EAST 12TH STREET
KANSAS CITY, MISSOURI 64106-2896

(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) An organized site visit has been scheduled for--
10 July 2002 at 10: a.m.

(c) Participants will meet at---

Post Museum, Bldg 1607
South Dakota Ave.
Fort Leonard Wood, Missouri

(d) Point of Contact is -- Jesse Vance, Project Engineer 573-596-0081

(e) Be aware of increased security measures in effect. Valid photo ID and proof of auto registration/insurance is required. Allow extra time to clear security checkpoints.

(f) This will be the only opportunity to visit the site prior to the award. No other site visit is scheduled for this solicitation. **Individual or self-guided site visits will not be allowed.**

(g) Questions regarding this solicitation may be submitted prior to, or during, the organized site visit. Questions may be submitted in advance by e-mail to **Michele.A.Riley@usace.army.mil**. Questions submitted the day of the site visit must be in writing. There will be a Q&A session at the end of the site visit when the submitted questions will be read aloud and answered, if possible. After the Q&A session, any questions requiring further research will be answered and a Q&A document, consisting of all questions and answers, will be posted to the public web site for the solicitation at www.nwk.usace.army.mil. This procedure will ensure that all parties have access to the questions and answers.

(End of clause)

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals 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 proposal must initial each erasure or change appearing on any proposal form.

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

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words "no proposal" in the space provided for any item on which no price is submitted.

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

(End of provision)

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its

quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far>

<http://www.acq.osd.mil/dp/dars/dfars.html>

http://acqnet.saalt.army.mil/library/AFAR/AFARS_OCTOBER_2001.pdf

<http://www.hq.usace.army.mil/cepr/asp/library/>

FIELD OFFICE OVERHEAD PERCENTAGE MARKUP

If any change to the contract, issued pursuant to the changes Clause or otherwise, for which the Government is responsible, causes an increase or decrease in the Contractor's cost of, of the time required for, performance under the contract, the Contracting Officer shall make an equitable adjustment and modify the contract in writing.

Under such equitable adjustment, no per diem rate for field office overhead shall be allowed if the Contractor has elected a percentage markup in keeping with its standard accounting practices. In such a case, payment of field office overhead shall be allowed for any change on a percentage markup basis regardless of whether the completion of the contract is or is not extended by reason of the change, except for modifications issued pursuant to the Default Clause. The Contractor shall provide a detailed breakdown of its proposed increase or decrease of costs as required by Contract Clause DFARS 252.236-7001 MODIFICATION OF PROPOSALS – PRICE BREAKDOWN.

FIELD OFFICE OVERHEAD PER DIEM RATE

If any change to the contract, issued pursuant to the Changes Clause or otherwise, for which the Government is responsible, causes an increase or decrease in the Contractor's cost of, or the time required for, performance under the contract, the Contracting Officer shall make an equitable adjustment and modify the contract in writing.

Under such equitable adjustment, no payment of field office overhead shall be allowed for any changes when the completion of the contract is not extended by reason of the change, except the Contractor may be reimbursed any variable expense it incurs due to the change, provided it can substantiate the variables. The Contractor shall be reimbursed for field office overhead on a per diem basis when the completion of the contract is extended by reason of the change issued under any clause except the Default clause. Equitable adjustment shall be made for the costs that are incurred or are to be incurred due to the change. The Contractor shall provide a detailed breakdown of its proposed increase or decrease of costs as required by Contract Clause DFARS 252.236-7001 MODIFICATION OF PROPOSALS – PRICE BREAKDOWN.

BID BOND REQUIREMENTS (DEC 1989) (FAR 28.101-2): If your bid exceed \$50,000.00, the bid bond shall be in the amount of 20% of the bid price or \$3,000,000, whichever is the lesser amount. (See CONTRACT CLAUSE titled "Bid Guarantee.")

SECTION 00110

SUBMISSION REQUIREMENTS AND INSTRUCTIONS

1. PROPOSALS

Proposals for the work described herein, will be received until the date and time indicated on Standard Form 1442 in Section 00010, at the following address:

U.S. Army Engineer District, Kansas City
 757 Federal Building
 601 East 12th Street
 ATTN: CENWK-CT-C/Mr. Gregory C. Gullede
 Kansas City, Missouri 64106-2896

2. PROPOSAL FORMAT

a. The proposals (originals) shall be no more than 50 pages total all volumes, in the following format:

Proposal Document		Original	Copies
VOLUME 1	- Technical Proposal	1	6
VOLUME 1, Part 2	- Price Proposal	1	6
VOLUME 2	- Subcontracting Plan	1	1

The information required by paragraph: INSTRUCTIONS TO OFFERORS --COMPETITIVE ACQUISITION, subparagraph (c)(2), shall be included in Volume 1, before Part 1.

b. Proposal Characteristics.

(1) All text must be legible and easily read. The page size of the offeror's proposal shall not exceed 8-1/2 inch by 11 inch. Diagrams, charts and tables shall conform to the paper size. All text shall be typed single-spaced. Margins (1-inch) shall be clean and clear. If fold-out charts are unavoidable and are to be utilized, all sheets shall be reproduced on 11 inch by 17 inch, and folded to 8-1/2 inch by 11 inch sheet size with title clearly visible at bottom right corner. Volume 1 shall be contained within a 3-ring binder (no heat or spiral bound volumes). Volumes 2, 3 and 4 may be in separate 3-ring binders or stapled and provided in separate envelopes.

(2) All proposals shall contain the requirements stated herein and every volume shall be identified by the volume number and name, address, and telephone number of the prime on the cover sheet. Each volume shall also contain a Table of Contents, List of Tables, List of Figures, List of Appendices, List of Acronyms and at the bottom left side of each page the volume number shall be included. The list of acronyms should include all acronyms appearing in the volume. The offeror's name, address, signature, and telephone number shall appear on any document to be evaluated.

(3) Proposal clarity, organization (as requested in this solicitation) and cross referencing is mandatory. No material shall be incorporated by reference. General cross references or cross referencing guides will not be considered as appropriate cross references. In order for the proposal to receive an in-depth evaluation, it is necessary that the proposal be presented in a manner that will provide clarity, organization and cross referencing as required.

(4) Each evaluation factor and subfactor in Volume 1 shall be described in a separate section, appropriately tabbed in a report form. The information in all volumes shall be concise. Elaborate presentations are not necessary or desirable.

(5) The offeror shall submit Section 00010 (including Standard Form 1442) of this solicitation with his prices. Offerors may be required to provide complete cost and pricing data and certification or information other than cost or pricing data at a later date if needed to adequately evaluate price proposals.

3. PROPOSAL CONTENT

a. The Government may award a contract based on initial proposals received, without discussion of such proposals, to the offeror providing the best value to the government as evaluated using applicable factors. Accordingly, each initial proposal should be submitted on the most favorable terms from a price and technical

standpoint that the offeror can submit to the Government. However, the Government may request additional information from offerors of proposals, which clarifies, supplements and/or changes, any proposal as submitted.

b. Each offeror's ability to perform the work set forth in this solicitation will be evaluated on the basis of his knowledge and understanding of the work, the quality provided by his total proposal and his capability and responsibility to accomplish the project. The evaluation will be based on the offeror's proposals. The proposals shall present a comprehensive, straightforward analysis of the resources and expertise required to perform the work. While knowledge of the RFP requirements is a prerequisite to preparing proposals, restatement of the RFP requirements shall be avoided. Proposals shall emphasize knowledge and understanding of work performance, not work identification.

c. The following factors and subfactors will be used to evaluate each proposal.

FACTOR 1. Past Performance. Past performance will be evaluated in the areas indicated in the subfactors shown. Past performance information may be obtained from other than the sources identified by the offeror, to include past performance evaluations in the Construction Contractors Appraisal Support System (CCASS).

Provide a Performance Evaluation for recent government or private contracts that have been completed or are currently on-going but the original completion date is past that were executed by the offeror as a prime contractor. The offeror may submit questionnaires for work by the designer, the construction firm or the design build team. The total number of questionnaires submitted should be at least 10 but not more than 15. The Past Performance Evaluation Questionnaire along with a sample transmittal letter, are located at the end of this section and must be completed by personnel for whom the offeror has performed work. These Performance Evaluations must be provided by the offeror to persons who have knowledge of this information on past performance. Once completed, these evaluations must be sent directly to the address in paragraph: PROPOSALS, above, by the persons completing these evaluations. The offeror may also e-mail the questionnaires to the references for the past/current contract. References may then electronically complete the questionnaire and e-mail it to Gregory C. Gulledge, Contract Specialist, Gregg.C.Gulledge@usace.army.mil E-mailed or mailed questionnaires must be received by the Government no later than the closing date of the RFP. Questionnaires received after the closing rate of the RFP will be discarded and will not be evaluated.

The offeror shall not review the Performance Evaluations after they have been completed, and the persons completing these evaluations shall be informed that their names will be held confidential by the Government. At no time during the evaluation process, debriefings or after award, will the names of the individuals providing reference information about an offeror's past performance be revealed to the offeror or to any other party.

The Performance Evaluations should clearly identify the proposer's identity and the project or portion of a project being evaluated. It is helpful to give your evaluators a short synopsis of the project or portion of a project that you wish them to evaluate. It is also helpful to include an SASE or overnight delivery envelope addressed to the address found in paragraph: PROPOSALS, and inform the evaluators to forward the evaluation in a timely manner. It is the proposer's responsibility to ensure that evaluators have completed and forwarded the evaluation in a timely manner. Those Performance Evaluations not received in a timely manner will be discarded and will not be evaluated.

In addition, the offeror will provide the following information in the proposal, Volume 1, about these ten projects:

- (a) Title, location and contract number.
- (b) Dates of contract execution (start and completion).
- (c) Contracting agency.
- (d) At least two current points of contact (names, current phone and fax numbers).
- (e) SF 294s, where available. If the project was done for a non-federal organization, information normally provided on a SF 294 shall be provided in letter format.

- (f) Brief description of the circumstances surrounding the following as they apply and any corrective action taken to preclude recurrence:
 - (i) Contract termination, in whole or in part.
 - (ii) Failure to complete awarded work.
 - (iii) Liquidated damages or actual damages assessed for delay in meeting completion dates.
- (g) Brief descriptions of the project to include size and location.

The following subfactors will be evaluated by the Government:

Quality of Product and Services. Reviews how well the offeror has complied with contract requirements in the past and conformance with standards of good workmanship.

Customer Satisfaction. Reviews how satisfied prior customers and end users are with the offeror's completed work. Includes the willingness of prior customers to do business with the offeror again if given the choice.

Timeliness of Performance. Reviews how well the contractor has adhered to contract schedules.

Extent of subcontracting to small businesses, small disadvantaged businesses, and women-owned businesses.

FACTOR 2. [example] Corporate Experience. Provide in detail the experience of your organization in contracts of similar type and complexity, including a list of contracts relevant to the proposed contract which your organization has completed within the last six years, or which is currently under contract and more than 50% complete. Provide the project name, a short description, the size, the owner's name and telephone number, the date of completion and the percentage of the project accomplished with your own forces. Information regarding the type and extent of work completed under the contract shall be included. For this factor, a project of similar type, size and complexity is considered to be **.

FACTOR 3. Subcontracting Plan. All items in the sample Subcontracting Plan format provided in this Section must be discussed in the Subcontracting Plan submitted. Proposers must not give cursory answers or discussions to the issues that must be addressed in the Subcontracting Plan; full and complete information is required.

Small businesses are not required to submit a Subcontracting Plan nor the additional past utilization information stated above. Small businesses will NOT be penalized nor their overall evaluation impacted by the Government's evaluation of subcontracting efforts on the part of large businesses. Subcontracting will be part of the trade off process in the best value determination by the Government and may be used as a final discriminator when comparing competing large businesses.

The goals identified in the offeror's subcontracting plan will be compared to the current goals of the Corps of Engineers which are listed on the subcontracting plan format provided. Subcontracting plans that do not meet these goals must provide a narrative justification for the goals proposed.

FACTOR 4. Price. Offerors shall submit the Proposal Schedule, as found in Section 00010. The Proposal Schedule will be evaluated in accordance with paragraphs: BASIS FOR AWARD, EVALUATION FACTORS, and PRICE listed below.

- d. ADDITIONAL INFORMATION TO BE PROVIDED IN VOLUME 3:

- The Offer (the SF1442) duly executed with an original signature by an official authorized to bind the company.
- Acknowledgement of all amendments to the solicitation in accordance with the instructions on the Standard Form 30 (amendment form).
- The completed Section 00600 of the solicitation (Representations and Certifications).
- For joint ventures, the information required by paragraph "Joint Ventures."

JOINT VENTURES

Joint ventures shall submit the following additional documentation regarding their business entities:

- A certified copy of their Joint Venture agreement.
- A detailed statement outlining the following in terms of percentages, where appropriate.
- The relationship of the joint venture parties in terms of business ownership, capital contribution, and profit distribution or loss sharing.
- The management approach of the joint venture in terms of who will conduct, direct, supervise and control the project and have custody and control of the assets of the joint venture and perform the duties necessary to complete the work.
- The structure of the joint venture and decision-making responsibilities of the joint venture parties in terms of who will control the manner and method of performance of the work.
- The bonding responsibilities of the joint venture parties.
- Identification of the key personnel having authority to legally bind the joint venture to subcontracts and state who will provide or contract for the labor and materials for the joint venture.
- Identification of party maintaining the joint venture bank accounts for the payment of all expenses and the deposits of all receipts, keep the books and records, and pay applicable taxes for the joint venture.
- Identification of party furnishing the facilities, such as office supplies and telephone service.
- Identification of party having overall control of the joint venture.

Other sections of the proposal shall identify, where appropriate, whether key personnel are employees of the individual joint venture parties and identify the party, or hired as employees of the joint venture.

If one of the joint venture parties possesses experience and/or past performance as a Federal Government contractor or as a Corps of Engineers contractor, that experience and/or past performance will be included as the experience and/or past performance of the joint venture.

SAMPLE TRANSMITTAL LETTER
AND
PAST PERFORMANCE EVALUATION QUESTIONNAIRE

Date: _____

To: _____

We have listed your firm as a reference for work we have performed for you as listed below. Our firm will be submitting a proposal under a project advertised by the U.S. Army Corps of Engineers, Kansas City District. In accordance with Federal Acquisition Regulations (FAR), an evaluation of our firm's past performance will be completed by the Corps of Engineers. Your candid response to the attached questionnaire will assist the evaluation team in this process.

We understand that you have a busy schedule and your participation in this evaluation is greatly appreciated. Please complete the enclosed questionnaire as thoroughly as possible. Space is provided for comments. Understand that while the responses to this questionnaire may be released to the offeror, FAR 15.306 (e)(4) prohibits the release of the names of the persons providing the responses. Complete confidentiality will be maintained. Furthermore, a questionnaire has also been sent to _____ of your organization. Only one response from each office is required. If at all possible, we suggest that you individually answer this questionnaire and then coordinate your responses with that of _____, to forge a consensus on one overall response from your organization.

Please send your completed questionnaire to the following address:

U.S. Army Engineer District, Kansas City
ATTN: CENWK-CT-C/Gregg C. Gulledge
757 Federal Building
601 East 12th Street
Kansas City, Missouri 64016-2896

The questionnaires can also be faxed to 816-426-5169 or e-mailed to Gregg.C.Gulledge@usace.army.mil.

If you have questions regarding the attached questionnaire, or require assistance, please contact Mr. Gulledge at (816) 983-3808. Thank you for your assistance.

PAST PERFORMANCE EVALUATION QUESTIONNAIRE

Upon completion of this form, please send directly to the U.S. Army Corps of Engineers in the enclosed addressed envelope, fax to 816-426-5169, ATTN: Gregg C. Gulledge, or e-mail to **Gregg.C.Gulledge@usace.army.mil**. Do not return this form to the contractor's offices. Thank you.

1. Contractor/Name & Address (City and State):

2. Type of Contractor: ___ Construction ___ Design ___ Design Build

3. Type of Contract: Fixed Price _____ Cost Reimbursement _____
Other (Specify) _____

4. Title of Project/Contract Number: _____

5. Description of Work: (Attach additional pages as necessary)

6. Complexity of Work: High _____ Mid _____ Routine _____

7. Location of Work: _____

8. Date of Award: _____

9. Status: Active _____ (provide percent complete)
Complete _____ (provide completion date)

10. Name, address and telephone number of Contracting Officer's Technical Representative:

11. Name, Title, Address and Telephone Number of Individual completing survey:

12. Date Questionnaire Completed: _____

Please note: Adverse remarks will be provided to contractors in the competitive range for award for response in accordance with Federal Acquisition Regulation requirements. The contracting office will not however, provide your name or copies of this questionnaire to the contractor or any other party not directly involved in the evaluation of the contractor's proposal. Your response to this questionnaire must be received in the contracting office no later than the closing date of the RFP. Questionnaires received after this date will be discarded and will not be evaluated. The evaluation team, if they so choose, may call you for clarification or additional information.

Please answer each of the following questions. **If the rating is other than average or satisfactory please provide additional information in the remarks section.**

QUALITY OF PRODUCT/SERVICE:

1. Evaluate the contractor's performance in complying with contract requirements, quality achieved and overall technical expertise demonstrated.

Excellent Quality	Above Average Quality	Average Quality	Below Average Quality	Unsuccessful or Experienced Significant Quality Problems

Remarks:

2. To what extent were the contractor's reports and documentation accurate, complete and submitted in a timely manner?

Excellent Quality	Above Average Quality	Average Quality	Below Average Quality	Unsuccessful or Experienced Significant Quality Problems

Remarks:

3. To what extent was the contractor able to solve contract performance problems without extensive guidance from government/owner counterparts?

Excellent	Above Average	Average	Below Average	Unsuccessful

Remarks:

4. How well did the contractor manage and coordinate subcontractors, suppliers, and the labor force?

Excellent	Above Average	Average	Below Average	Unsuccessful

Remarks:

CUSTOMER SATISFACTION:

5. To what extent were the end users satisfied with:

	Quality?	Cost?	Schedule?
Exceptionally satisfied			
Highly satisfied			
Satisfied			
Somewhat Dissatisfied			
Highly dissatisfied			

Remarks:

6. If given the opportunity, would you work with this contractor again?

Yes _____ No _____ Not Sure _____

Remarks:

TIMELINESS OF PERFORMANCE:

7. To what extent did the contractor meet the contract schedule?

Completed substantially ahead of schedule	
Completed work on schedule with no time delays	
Completed work on schedule, with minor delays under extenuating circumstances	
Experienced significant delays without justification	

Remarks:

8. If work was not completed on schedule, were Liquidated Damages, or other similar penalties assessed?

_____ Yes _____ No

Remarks:

9. If work was completed ahead of schedule, were incentives paid to the contractor?

_____ Yes _____ No

Remarks:

SUBCONTRACTING TO SMALL BUSINESSES

10. Did the contractor partner or have a mentor/protégée relationship with SB/SDB/WOSB as part of this contract?

Yes _____ No _____ Mentor/Protégée Not Allowed _____

Remarks:

OTHER REMARKS:

11. Use the space below to provide other information related to the contractor's performance. This may include the contractor's selection and management of subcontractors, effectiveness of their small/small disadvantaged business subcontracting plan, flexibility in dealing with contract challenges, their overall concern for the Government's interest (if applicable), project awards received, etc.

SECTION 00120

PROPOSAL EVALUATION AND CONTRACT AWARD

1. INFORMAL SOURCE SELECTION PROCESS

All offers received in response to this solicitation will be evaluated in accordance with informal source selection procedures. The principal objective of this process is to select responsible offerors to be the overall Best Value to the Government, price and other factors considered (the Best Value). The Government reserves the right to consider and evaluate information regarding past performance from sources outside the proposal. The right is reserved to accept other than the lowest price offers and to reject any or all offers. Award may be made to the superior proposals, regardless of cost or price, provided that price is determined to be reasonable. The process is designed to ensure the

impartial, equitable, and comprehensive evaluation of all technically acceptable, responsible proposals received in response to this particular solicitation.

2. SOURCE SELECTION ORGANIZATION.

The source selection organization is established as a separate organization and management chain of command whose only purpose is to accomplish the objective above. The organization consists of a Source Selection Authority (SSA) and a Source Selection Evaluation Board (SSEB). The SSEB is comprised of separate Technical Evaluation and Price Evaluation teams. The organization is designed to ensure active ongoing involvement of appropriate contracting, technical, logistics, legal, price analysis, small business, and other functional staff management expertise.

3. SOURCE SELECTION PROCEDURE.

a. The source selection procedures will begin with an initial review of proposals and continue with a technical and price evaluation conducted by the SSEB. The SSEB shall evaluate the proposals based solely on the evaluation criteria identified in paragraph: Evaluation Factors, below. The results of the SSEB evaluations will be presented to the SSA, who will rank the proposals based on the Best Value to the Government, price and other factors considered. The SSA will either make the final source selection decision or determine whether it is appropriate to engage in clarifications or communication prior to establishment of a competitive range, or to establish a competitive range and conduct discussions with those offerors that are included in the competitive range. The Government intends to award without discussions. All communications leading to establishment of the competitive range will be conducted in accordance with FAR Part 15.306b.

b. If a competitive range is established, discussions will be conducted with offerors who are included in the competitive range. After conclusion of discussions and receipt of final revised technical proposals, the SSEB will complete the evaluation and establish final ratings. Results of the final technical ratings will be presented to the SSA. The SSA shall then rank the proposals based on the Best Value to the Government, price and other factors considered. The SSA will then make the final source selection decision. If appropriate, the SSA will apply the tradeoff process in the Best Value Continuum.

c. The proposals received in response to this RFP will be evaluated utilizing a rating system to select the most advantageous proposal. To be considered acceptable, each offeror shall specifically address each of the evaluation factors listed below. Sufficient detail shall be provided, citing specific data as may be required, such that the proposal may be adequately evaluated. The proposal must show clearly that the offeror has an understanding of the work tasks required and has the capability and responsibility to accomplish the project.

d. The Government is not responsible for information overlooked during the evaluation that is not located in the appropriate proposal section. To ensure that evaluation credit is appropriately received for proposal material submitted, do not incorporate by reference documents not contained in the proposal. References to other sections of the proposal shall be by specific paragraph number (and name, if applicable), page number and section.

4. BASIS FOR AWARD

The Government intends to select, without discussions, those responsible offerors whose proposals conform to the solicitation and are determined to be the Best Value to the Government in accordance with the following relationship between price and technical merit. The technical evaluation factors, when combined, are considered of more importance to price (see paragraphs below: Relative Weight of Technical Evaluation Criteria; and Price). The closer the total evaluated technical scores of acceptable proposals are to one another, the greater will be the importance of price in making the selection determination. The closer the final price evaluations are to one another, the greater will be the importance of the total evaluated technical scores in making the selection determination.

5. TECHNICAL EVALUATION FACTORS

Evaluation factors are listed below. All factors will be evaluated on the completeness, conciseness, and relevance of information provided. These factors are listed in the order of importance described in paragraph: Relative Weight of Technical Evaluation Criteria.

FACTOR 1. PAST PERFORMANCE.

SUBFACTOR 1a. QUALITY OF PRODUCT AND SERVICES.

SUBFACTOR 1b. CUSTOMER SATISFACTION.

SUBFACTOR 1c. TIMELINESS OF PERFORMANCE.

FACTOR 2. CORPORATE EXPERIENCE.

SUBFACTOR 2a. CONSTRUCTION EXPERIENCE WITH PROJECTS OF SIMILAR TYPE, SIZE, AND COMPLEXITY.

SUBFACTOR 2b. DESIGNER EXPERIENCE WITH PROJECTS OF SIMILAR TYPE, SIZE, AND COMPLEXITY.

FACTOR 3. MANAGEMENT PLAN.

SUBFACTOR 3a. GENERAL MANAGEMENT STRUCTURE AND PLAN.

SUBFACTOR 3b. MANAGEMENT OF MULTIPLE SUBCONTRACTORS INCLUDING DESIGNER ARCHITECT-ENGINEER.

6. RELATIVE WEIGHT OF TECHNICAL EVALUATION CRITERIA

Factor 1 is the most important factor. Within factor 1, subfactor 1a is the most important. Subfactor 1b is slightly less important than subfactor 1a, and subfactor 1c is slightly less important than subfactor 1b.

Factor 2 is less important than factor 1 and equal to factor 3. Within factor 2, subfactor 2a is the most important, and subfactor 2b is slightly less important than subfactor 2a.

Factor 3 is less important than factor one and equal to factor 2. Within factor 3, subfactor 3a is the most important, and subfactor 3b is slightly less important than subfactor 3a.

7. PRICE (Volume 2).

a. Price will not be point-scored, but will be subjectively evaluated. The specific evaluation process is described below. The technical evaluation factors, when combined, are **more** important than price. The closer the total evaluated technical scores of acceptable offers are to one another, the greater will be the importance of price in making the selection determination. The closer the final price evaluations are to one another, the greater will be the importance of the total evaluated technical scores in making the selection determination.

b. The Price Proposal Schedule (Volume 2) submitted in response to this solicitation will not be point scored but will be subjectively evaluated for reasonableness over the life of the contract. In the event, during the course of the analysis, the Price Evaluation Team has reason to question the reasonableness of a price proposal, or has reason to believe there is unbalancing in the price proposal, the PET may conduct such additional reasonable analysis as it requires in order to complete a thorough price analysis. Because the evaluation of the price proposal will represent a portion of the total evaluation, it is possible that an offeror might not be selected because of an unbalanced or an unreasonable price proposal.

c. The evaluated price information will be reported to the SSA. The SSA will utilize the technical ratings and the price evaluations in preparing its overall ranking of the proposals and as to the Best Value determination for selection of successful offerors.

8. PAST PERFORMANCE

a. In the course of evaluating offerors' proposals, the Source Selection Evaluation Board may contact references submitted by the offeror. The SSEB may also check past performance information obtained from sources other than those identified by the offeror. All gathered information will be used to evaluate the offeror's overall past performance.

b. Sheer numbers of confirmed negative comments may not give the offeror an overall rating of less than satisfactory. Negative comments in areas that are not of vital importance to the successful performance of this contract may not result in a rating of less than satisfactory. Conversely, one or only a few negative confirmed comments in areas of vital importance to the successful performance of this contract may render an overall past performance rating less than satisfactory.

c. During the evaluation, the following will also be taken into consideration: the age and relevance of past performance information; the offeror's overall work record; if there are any problems identified, the number, type, and severity of the problems and the effectiveness of corrective actions taken.

d. At no time during this process, nor during the debriefing, nor after award, will the names of the individuals providing reference information about an offeror's past performance be revealed to the offerors or to any other party. Offerors may be afforded the opportunity to respond to adverse comments made by references in accordance with guidelines identified in FAR Part 15.3. In this case, comments will be extracted and provided to the offeror. Copies of the questionnaires will not be furnished to the offeror and will remain confidential.

e. During the ranking process the SSA may also consider past performance information in evaluating overall risk associated with a particular offeror.

9. DEBRIEFING. In accordance with FAR 15.505 Preaward Debriefing of Offerors, and FAR 15.506 Postaward Debriefing of Offerors, the offeror should be aware of the following.

a. PREAWARD DEBRIEFING OF OFFERORS (FAR 15.505)

Offerors excluded from the competitive range or otherwise excluded from the competition before award may request a debriefing before award (10 U.S.C. 2305(b)(6)(A) and 41 U.S.C. 253b(f)-(h)).

(a)(1) The offeror may request a preaward debriefing by submitting a written request for debriefing to the Contracting Officer within 3 days after receipt of the notice of exclusion from the competition.

(2) At the offeror's request, this debriefing may be delayed until after award. If the debriefing is delayed until after award, it shall include all information normally provided in a postaward debriefing (see 15.506(d)). Debriefings delayed pursuant to this paragraph could affect the timeliness of any protest filed subsequent to the debriefing.

(3) If the offeror does not submit a timely request, the offeror need not be given either a preaward or a postaward debriefing. Offerors are entitled to no more than one debriefing for each proposal.

(b) The Contracting Officer shall make every effort to debrief the unsuccessful offeror as soon as practicable, but may refuse the request for a debriefing if, for compelling reasons, it is not in the best interests of the Government to conduct a debriefing at that time. The rationale for delaying the debriefing shall be documented in the contract file. If the Contracting Officer delays the debriefing, it shall be provided no later than the time postaward debriefings are provided under 15.506. In that event, the Contracting Officer shall include the information at 15.506(d) in the debriefing.

(c) Debriefings may be done orally, in writing, or by any other method acceptable to the Contracting Officer.

The Contracting Officer should normally chair any debriefing session held. Individuals who conducted the evaluations shall provide support.

At minimum, preaward debriefings shall include--

- (1) The agency's evaluation of significant elements in the offeror's proposal;
- (2) A summary of the rationale for eliminating the offeror from the competition; and
- (3) Reasonable responses to relevant questions about whether source selection procedures contained in the solicitation, applicable regulations, and other applicable authorities were followed in the process of eliminating the offeror from the competition.

Preaward debriefings shall not disclose--

The number of offerors;

The identity of other offerors;

The content of other offerors' proposals;

The ranking of other offerors;

The evaluation of other offerors; or

Any of the information prohibited in 15.506(e).

An official summary of the debriefing shall be included in the contract file.

b. POSTAWARD DEBRIEFING OF OFFERORS FAR 15.506

(a)(1) An offeror, upon its written request received by the agency within 3 days after the date on which that offeror has received notification of contract award in accordance with 15.503(b), shall be debriefed and furnished the basis for the selection decision and contract award.

(2) To the maximum extent practicable, the debriefing should occur within 5 days after receipt of the written request. Offerors that requested a postaward debriefing in lieu of a preaward debriefing, or whose debriefing was delayed for compelling reasons beyond contract award, also should be debriefed within this time period.

(3) An offeror that was notified of exclusion from the competition (see 15.505(a)), but failed to submit a timely request, is not entitled to a debriefing.

(4)(i) Untimely debriefing requests may be accommodated.

(ii) Government accommodation of a request for delayed debriefing pursuant to 15.505(a)(2), or any untimely debriefing request, does not automatically extend the deadlines for filing protests. Debriefings delayed pursuant to 15.505(a)(2) could affect the timeliness of any protest filed subsequent to the debriefing.

(b) Debriefings of successful and unsuccessful offerors may be done orally, in writing, or by any other method acceptable to the Contracting Officer.

(c) The Contracting Officer should normally chair any debriefing session held. (Individuals who conducted the evaluations shall provide support.)

At a minimum, the debriefing information shall include--

(1) The Government's evaluation of the significant weaknesses or deficiencies in the offeror's proposal, if applicable;

(2) The overall evaluated price (including unit prices), and technical rating, if applicable, of the successful offeror and the debriefed offeror, and past performance information on the debriefed offeror;

(3) The overall ranking of all offerors, when any ranking was developed by the agency during the source selection;

(4) A summary of the rationale for award;

(5) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror; and

(6) Reasonable responses to relevant questions about whether source selection procedures contained in the solicitation, applicable regulations, and other applicable authorities were followed.

(e) The debriefing shall not include point-by-point comparisons of the debriefed offeror's proposal with those of other offerors. Moreover, the debriefing shall not reveal any information prohibited from disclosure by 24.202 or exempt from release under the Freedom of Information Act (5 U.S.C. 552) including--

(1) Trade secrets;

Privileged or confidential manufacturing processes and techniques;

(3) Commercial and financial information that is privileged or confidential, including cost breakdowns, profit, indirect cost rates, and similar information; and

(4) The names of individuals providing reference information about an offeror's past performance.

(f) An official summary of the debriefing shall be included in the contract file.

(End of Section)

SECTION 00600 Representations & Certifications

CLAUSES INCORPORATED BY REFERENCE:

52.209-5	Certification Regarding Debarment, Suspension, Proposed Debarment, And Other Responsibility Matters	DEC 2001
252.227-7028	Technical Data or Computer Software Previously Delivered to the Government	JUN 1995

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 provision _____ (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 provision)

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

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

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

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

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

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

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

(End of provision)

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

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

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

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is **234990**.

(2) The small business size standard is **\$27,500,000.00**.

(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; 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) 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)

52.219-22 SMALL DISADVANTAGED BUSINESS STATUS (OCT 1999)

(a) General. This provision is used to assess an offeror's small disadvantaged business status for the purpose of obtaining a benefit on this solicitation. Status as a small business and status as a small disadvantaged business for general statistical purposes is covered by the provision at FAR 52.219-1, Small Business Program Representation.

(b) Representations.

(1) General. The offeror represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

___ (i) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

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

(B) Where the concern is owned by one or more disadvantaged 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

(C) It is identified, on the date of this representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration(PROONet); or

___ (ii) It has 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.

(2)___ For Joint Ventures. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements at 13 CFR 124.1002(f) and that the representation in paragraph (b)(1) 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: _____.]

(c) Penalties and Remedies. Anyone who misrepresents any aspects of the disadvantaged status of a concern for the purposes of securing a contract or subcontract shall:

- (1) Be punished by imposition of a fine, imprisonment, or both;
- (2) Be subject to administrative remedies, including suspension and debarment; and
- (3) Be ineligible for participation in programs conducted under the authority of the Small Business Act.

(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.

52.226-2 HISTORICALLY BLACK COLLEGE OR UNIVERSITY AND MINORITY INSTITUTION REPRESENTATION (MAY 2001)

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

Historically black college or university means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense, the National Aeronautics and Space Administration, and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institution means an institution of higher education meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k, including a Hispanic-serving institution of higher education, as defined in Section 316(b)(1) of the Act (20 U.S.C. 1101a)).

(b) Representation. The offeror represents that it--

is is not a historically black college or university;

is is not a minority institution.

(End of provision)

52.227-6 ROYALTY INFORMATION (APR 1984)

(a) Cost or charges for royalties. When the response to this solicitation contains costs or charges for royalties totaling more than \$250, the following information shall be included in the response relating to each separate item of royalty or license fee:

(1) Name and address of licensor.

(2) Date of license agreement.

(3) Patent numbers, patent application serial numbers, or other basis on which the royalty is payable.

(4) Brief description, including any part or model numbers of each contract item or component on which the royalty is payable.

(5) Percentage or dollar rate of royalty per unit.

(6) Unit price of contract item.

(7) Number of units.

(8) Total dollar amount of royalties.

(b) Copies of current licenses. In addition, if specifically requested by the Contracting Officer before execution of the contract, the offeror shall furnish a copy of the current license agreement and an identification of applicable claims of specific patents.

(End of provision)

52.230-1 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (JUN 2000)

Note: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

I. DISCLOSURE STATEMENT--COST ACCOUNTING PRACTICES AND CERTIFICATION

(a) Any contract in excess of \$500,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

CAUTION: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

(c) Check the appropriate box below:

(1) Certificate of Concurrent Submission of Disclosure Statement.

The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows: (i) original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable, and (ii) one copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement: _____ Name and Address of Cognizant ACO or Federal Official Where Filed: _____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

(2) Certificate of Previously Submitted Disclosure Statement.

The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement: _____ Name and Address of Cognizant ACO or Federal Official Where Filed: _____

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

(3) Certificate of Monetary Exemption.

The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling more than \$50 million (of which at least one award exceeded \$1 million) in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

(4) Certificate of Interim Exemption.

The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Contracting Officer, in the form specified under subparagraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

CAUTION: Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of \$50 million or more in the current cost accounting period may not claim this exemption (4). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

II. COST ACCOUNTING STANDARDS--ELIGIBILITY FOR MODIFIED CONTRACT COVERAGE

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

() The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than \$50 million in awards of CAS-covered prime contracts and subcontracts. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

CAUTION: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of \$50 million or more or if, during its current cost

accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of \$25 million or more.

III. ADDITIONAL COST ACCOUNTING STANDARDS APPLICABLE TO EXISTING CONTRACTS

The offeror shall indicate below whether award of the contemplated contract would, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

() YES () NO

(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 indebtedness 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 disclose 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)

NOTES:

- 1) Bid prices must be entered for all items of the Bidding Schedule. Award will be made as a whole to one Contractor.
- 2) All quantities are estimated.
- 3) All extensions of the unit prices shown will be subject to verification by the Contracting Officer. In case of variation between the unit price and the extension, the unit price will be considered to be the bid.
- 4) If a modification to a bid is submitted that provides for a lump sum adjustment to the total cost, the application of the lump sum adjustment to each price in the Bidding Schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every price in the Bidding Schedule.
- 5) Bidder's attention is directed to SECTION 0100 paragraph titled "Arithmetic Discrepancies" wherein are procedures for correction of errors.
- 6) Bidder's attention is directed to CONTRACT CLAUSE titled "Contract Prices—Bidding Schedules."
- 7) Award will be made to the low responsible and responsible bidder. Bidder's attention is directed to SECTION 00100 paragraph entitled "Contract Award—Sealed Bidding—Construction" for further details.
- 8) Bidder's attention is directed to SECTION 01100: GENERAL for special provisions pertaining to this solicitation.
- 9) Bidder's attention is directed to the CONTRACT CLAUSES wherein the apparent low bidder is required to submit a subcontracting small business and small disadvantaged business subcontracting plan. The subcontracting plan shall be submitted in the format identified in SECTION 00100. Submission of the plan is

required prior to award. Award will not be made under this solicitation before the plan is approved by the Contracting Officer.

- 10) Bidder's attention is directed to the CONTRACT CLAUSES, FAR 52.223-9, Certification and Estimate of Percentage of Recovered Material Content for EPA-Designated Items . Certification will be required upon contract completion unless a waiver has been approved by the Contracting Officer. The waiver must be approved prior to contract award.
- 11) The general outline of the principal features of each item as listed does not in any way limit the responsibility of the bidder for making a thorough investigation of the drawings and specifications to determine the scope of work included in each item. Descriptions of bid items are supplemented as follows:
 - a) Item No. 1, "Sitework," consists of all work beyond the lines, five (5) feet outside the building lines.
 - b) Item No. 2, "Construction of Whole Barracks Renewal," consists of all work required within the line five (5) feet beyond the building lines.

SECTION 00700 Contract Clauses

CLAUSES INCORPORATED BY REFERENCE:

52.202-1 Alt I	Definitions (Dec 2001) --Alternate I	MAY 2001
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	JUN 1997
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	JUL 1995
52.211-13	Time Extensions	SEP 2000
52.211-18	Variation in Estimated Quantity	APR 1984
52.215-2	Audit and Records--Negotiation	JUN 1999
52.215-10	Price Reduction for Defective Cost or Pricing Data	OCT 1997
52.215-12	Subcontractor Cost or Pricing Data	OCT 1997
52.215-15	Pension Adjustments and Asset Reversions	DEC 1998
52.215-17	Waiver of Facilities Capital Cost of Money	OCT 1997
52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other than Pensions	OCT 1997
52.215-19	Notification of Ownership Changes	OCT 1997
52.216-7 Alt I	Allowable Cost and Payment (Feb 2002) - Alternate I	FEB 1997
52.219-8	Utilization of Small Business Concerns	OCT 2000
52.219-16	Liquidated Damages-Subcontracting Plan	JAN 1999
52.222-3	Convict Labor	AUG 1996
52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation	SEP 2000
52.222-6	Davis Bacon Act	FEB 1995
52.222-7	Withholding of Funds	FEB 1988
52.222-8	Payrolls and Basic Records	FEB 1988
52.222-9	Apprentices and Trainees	FEB 1988
52.222-10	Compliance with Copeland Act Requirements	FEB 1988
52.222-11	Subcontracts (Labor Standards)	FEB 1988
52.222-12	Contract Termination-Debarment	FEB 1988
52.222-13	Compliance with Davis -Bacon and Related Act Regulations.	FEB 1988
52.222-14	Disputes Concerning Labor Standards	FEB 1988
52.222-15	Certification of Eligibility	FEB 1988
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	APR 2002
52.222-27	Affirmative Action Compliance Requirements for Construction	FEB 1999
52.222-35	Equal Opportunity For Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans	DEC 2001
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
52.222-37	Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era and Other Eligible Veterans	DEC 2001
52.223-6	Drug Free Workplace	MAY 2001
52.223-14	Toxic Chemical Release Reporting	OCT 2000
52.225-11	Buy American Act--Construction Materials Under Trade	MAY 2002

	Agreements	
52.225-13	Restrictions on Certain Foreign Purchases	JUL 2000
52.226-1	Utilization Of Indian Organizations And Indian-Owned Economic Enterprises	JUN 2000
52.227-1	Authorization and Consent	JUL 1995
52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	AUG 1996
52.227-4	Patent Indemnity-Construction Contracts	APR 1984
52.228-1	Bid Guarantee	SEP 1996
52.228-11	Pledges Of Assets	FEB 1992
52.228-14	Irrevocable Letter of Credit	DEC 1999
52.229-3	Federal, State And Local Taxes	JAN 1991
52.229-5	Taxes--Contracts Performed In U S Possessions Or Puerto Rico	APR 1984
52.232-5	Payments under Fixed-Price Construction Contracts	MAY 1997
52.232-10	Payments under Fixed-Price Architect-Engineer Contracts	AUG 1987
52.232-17	Interest	JUN 1996
52.232-23 Alt I	Assignment of Claims (Jan 1986) - Alternate I	APR 1984
52.232-25	Prompt Payment	FEB 2002
52.232-33	Payment by Electronic Funds Transfer--Central Contractor Registration	MAY 1999
52.233-1	Disputes	DEC 1998
52.233-3	Protest After Award	AUG 1996
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-8	Other Contracts	APR 1984
52.247-34	F.O.B. Destination	NOV 1991
52.248-2	Value Engineering--Architect-Engineer	MAR 1990
52.248-3	Value Engineering-Construction	FEB 2000
52.249-1 Alt I	Termination for Convenience of the Government (Fixed-price) (Short Form) (Apr 1984) Alternate I	APR 1984
52.249-7	Termination (Fixed-Price Architect-Engineer)	APR 1984
52.253-1	Computer Generated Forms	JAN 1991
252.201-7000	Contracting Officer's Representative	DEC 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense-Contract-Related Felonies	MAR 1999
252.203-7002	Display Of DOD Hotline Poster	DEC 1991
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7004	Required Central Contractor Registration	NOV 2001
252.209-7000	Acquisition From Subcontractors Subject To On-Site Inspection Under The Intermediate Range Nuclear Forces (INF) Treaty	NOV 1995
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	MAR 1998
252.215-7000	Pricing Adjustments	DEC 1991
252.215-7002	Cost Estimating System Requirements	OCT 1998
252.219-7003	Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (DOD Contracts)	APR 1996
252.225-7012	Preference For Certain Domestic Commodities	APR 2002
252.225-7031	Secondary Arab Boycott Of Israel	JUN 1992
252.226-7001	Utilization of Indian Organizations and Indian-Owned Economic Enterprises-DoD Contracts	SEP 2001
252.227-7015	Technical Data--Commercial Items	NOV 1995
252.227-7022	Government Rights (Unlimited)	MAR 1979
252.227-7027	Deferred Ordering Of Technical Data Or Computer Software	APR 1988
252.227-7033	Rights in Shop Drawings	APR 1966
252.227-7037	Validation of Restrictive Markings on Technical Data	SEP 1999

252.231-7000	Supplemental Cost Principles	DEC 1991
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	MAR 1998
252.244-7000	Subcontracts for Commercial Items and Commercial Components (DoD Contracts)	MAR 2000
252.246-7000	Material Inspection And Receiving Report	DEC 1991
252.246-7001	Warranty Of Data	DEC 1991
252.246-7001	Warranty Of Data (Dec 1991) - Alternate I Alt I	DEC 1991
252.246-7001	Warranty Of Data (Dec 1991) - Alternate II Alt II	DEC 1991
252.247-7023	Transportation of Supplies by Sea	MAR 2000
252.247-7024	Notification Of Transportation Of Supplies By Sea	MAR 2000

CLAUSES INCORPORATED BY FULL TEXT

52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997)

(a) Exceptions from cost or pricing data. (1) In lieu of submitting cost or pricing data, offerors may submit a written request for exception by submitting the information described in the following subparagraphs. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an exception should be granted, and whether the price is fair and reasonable.

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

(ii) Commercial item exception. For a commercial item exception, the offeror shall submit, at a minimum, information on prices at which the same item or similar items have previously been sold in the commercial market that is adequate for evaluating the reasonableness of the price for this acquisition. Such information may include--

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

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

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

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

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

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

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

(End of provision)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(End of clause)

52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (JAN 2002)

(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 offeror, upon request by the Contracting Officer, shall submit and negotiate a subcontracting plan, where applicable, that separately addresses subcontracting with small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business concerns, small disadvantaged business, and women-owned small business concerns. If the offeror is submitting an individual contract plan, the plan must separately address subcontracting with small business, veteran-owned 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 negotiated within the time specified by the Contracting Officer. Failure to submit and negotiate the subcontracting plan shall make the offeror ineligible for 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, service-disabled 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 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, service-disabled 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, service-disabled 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, service-disabled veteran-owned 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, service-disabled 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, service-disabled veteran-owned 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, service-disabled veteran-owned 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, service-disabled veteran-owned 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, service-disabled veteran-owned 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)

52.219-23 NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (MAY 2001)

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

Small disadvantaged business concern means an offeror that represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

(1) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

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

(ii) Where the concern is owned by one or more disadvantaged 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

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

(2) It has 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. In this case, in order to receive the benefit of a price evaluation adjustment, an offeror must receive certification as a small disadvantaged business concern by the Small Business Administration prior to contract award; or

(3) Is a joint venture as defined in 13 CFR 124.1002(f).

Historically black college or university means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense (DoD), the National Aeronautics and Space Administration (NASA), and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institution means an institution of higher education meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k, including a Hispanic-serving institution of higher education, as defined in Section 316(b)(1) of the Act (20 U.S.C. 1101a)).

United States means the United States, its territories and possessions, the Commonwealth of Puerto Rico, the U.S. Trust Territory of the Pacific Islands, and the District of Columbia.

(b) Evaluation adjustment.

(1) The Contracting Officer will evaluate offers by adding a factor of _____ [Contracting Officer insert the percentage] percent to the price of all offers, except--

(i) Offers from small disadvantaged business concerns that have not waived the adjustment;

(ii) An otherwise successful offer of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is equaled or exceeded (see section 25.402 of the Federal Acquisition Regulation (FA R));

(iii) An otherwise successful offer where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government;

(iv) For DoD, NASA, and Coast Guard acquisitions, an otherwise successful offer from a historically black college or university or minority institution; and

(v) For DoD acquisitions, an otherwise successful offer of qualifying country end products (see sections 225.000-70 and 252.225-7001 of the Defense FAR Supplement).

(2) The Contracting Officer will apply the factor to a line item or a group of line items on which award may be made. The Contracting Officer will apply other evaluation factors described in the solicitation before application of the factor. The factor may not be applied if using the adjustment would cause the contract award to be made at a price that exceeds the fair market price by more than the factor in paragraph (b)(1) of this clause.

(c) Waiver of evaluation adjustment. A small disadvantaged business concern may elect to waive the adjustment, 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 to offers that waive the adjustment.

____ Offeror elects to waive the adjustment.

(d) Agreements. (1) A small disadvantaged business concern, that did not waive the adjustment, agrees that in performance of the contract, in the case of a contract for--

(i) Services, except construction, at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern;

(ii) 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;

(iii) General construction, at least 15 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern; or

(iv) Construction by special trade contractors, at least 25 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern.

(2) A small disadvantaged business concern submitting an offer in its own name agrees to furnish in performing this contract only end items manufactured or produced by small disadvantaged business concerns in the United States. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.219-23 NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (MAY 2001) ALTERNATE I (OCT 1998)

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

Small disadvantaged business concern means an offeror that represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

(1) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

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

(ii) Where the concern is owned by one or more disadvantaged 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

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

(2) It has 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. In this case, in order to receive the benefit of a price evaluation adjustment, an offeror must receive certification as a small disadvantaged business concern by the Small Business Administration prior to contract award; or

(3) Is a joint venture as defined in 13 CFR 124.1002(f).

Historically black college or university means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense (DoD), the National Aeronautics and Space Administration (NASA), and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institution means an institution of higher education meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k, including a Hispanic-serving institution of higher education as defined in Section 316(b)(1) of the Act (20 U.S.C. 1101a)).

United States means the United States, its territories and possessions, the Commonwealth of Puerto Rico, the U.S. Trust Territory of the Pacific Islands, and the District of Columbia.

(b) Evaluation adjustment. (1) The Contracting Officer will evaluate offers by adding a factor of (Contracting Officer insert the percentage) percent to the price of all offers, except--

- (i) Offers from small disadvantaged business concerns that have not waived the adjustment;
- (ii) An otherwise successful offer of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is equaled or exceeded (see section 25.402 of the Federal Acquisition Regulation (FAR));
- (iii) An otherwise successful offer where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government;
- (iv) For DoD, NASA, and Coast Guard acquisitions, an otherwise successful offer from a historically black college or university or minority institution; and
- (v) For DoD acquisitions, an otherwise successful offer of qualifying country end products (see sections 225.000-70 and 252.225-7001 of the Defense FAR Supplement).

(2) The Contracting Officer will apply the factor to a line item or a group of line items on which award may be made. The Contracting Officer will apply other evaluation factors described in the solicitation before application of the factor. The factor may not be applied if using the adjustment would cause the contract award to be made at a price that exceeds the fair market price by more than the factor in paragraph (b)(1) of this clause.

(c) Waiver of evaluation adjustment. A small disadvantaged business concern may elect to waive the adjustment, 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 to offers that waive the adjustment.

___ Offeror elects to waive the adjustment.

(d) Agreements. (1) A small disadvantaged business concern, that did not waive the adjustment, agrees that in performance of the contract, in the case of a contract for--

- (i) Services, except construction, at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern;
- (ii) 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;
- (iii) General construction, at least 15 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern; or
- (iv) Construction by special trade contractors, at least 25 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern.

(2) A small disadvantaged business concern submitting an offer in its own name agrees to furnish in performing this contract only end items manufactured or produced by small business concerns in the United States. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.219-23 NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (MAY 2001) ALTERNATE II (OCT 1998)

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

Small disadvantaged business concern means an offeror that represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

(1) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

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

(ii) Where the concern is owned by one or more disadvantaged 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

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

(2) It has 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. In this case, in order to receive the benefit of a price evaluation adjustment, an offeror must receive certification as a small disadvantaged business concern by the Small Business Administration prior to contract award; or

(3) Is a joint venture as defined in 13 CFR 124.1002(f).

Historically black college or university means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense (DoD), the National Aeronautics and Space Administration (NASA), and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institution means an institution of higher education meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k, including a Hispanic-serving institution of higher education as defined in Section 316(b)(1) of the Act (20 U.S.C. 1101a)).

United States means the United States, its territories and possessions, the Commonwealth of Puerto Rico, the U.S. Trust Territory of the Pacific Islands, and the District of Columbia.

(b) Evaluation adjustment. (1) The Contracting Officer will evaluate offers by adding a factor of _____ [Contracting Officer insert the percentage] percent to the price of all offers, except--

(i) Offers from small disadvantaged business concerns, that have not waived the adjustment, whose address is in a region for which an evaluation adjustment is authorized;

(ii) An otherwise successful offer of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is equaled or exceeded (see section 25.402 of the Federal Acquisition Regulation (FAR));

(iii) An otherwise successful offer where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government;

(iv) For DoD, NASA, and Coast Guard acquisitions, an otherwise successful offer from a historically black college or university or minority institution; and

(v) For DoD acquisitions, an otherwise successful offer of qualifying country end products (see sections 225.000-70 and 252.225-7001 of the Defense FAR Supplement).

(2) The Contracting Officer will apply the factor to a line item or a group of line items on which award may be made. The Contracting Officer will apply other evaluation factors described in the solicitation before application of the factor. The factor may not be applied if using the adjustment would cause the contract award to be made at a price that exceeds the fair market price by more than the factor in paragraph (b)(1) of this clause.

(c) Waiver of evaluation adjustment. A small disadvantaged business concern may elect to waive the adjustment, 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 to offers that waive the adjustment.

___ Offeror elects to waive the adjustment.

(d) Agreements. (1) A small disadvantaged business concern, that did not waive the adjustment, agrees that in performance of the contract, in the case of a contract for--

(i) Services, except construction, at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern;

(ii) 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;

(iii) General construction, at least 15 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern; or

(iv) Construction by special trade contractors, at least 25 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern.

(2) A small disadvantaged business concern submitting an offer in its own name agrees to furnish in performing this contract only end items manufactured or produced by small disadvantaged business concerns in the United States. This paragraph does not apply in connection with construction or service contracts.

(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: PULASKI COUNTY, MO

Goals for minority participation for each trade	Goals for female participation for each trade
2.3 %	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].

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)

52.232-27 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 Disputes Act 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)

52.232-5000 PAYMENT FOR MATERIALS DELIVERED OFF-SITE (MAR 1995)--EFARS

(a) Pursuant to FAR clause 52.232-5, Payments Under Fixed Priced Construction Contracts, materials delivered to the contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the General Provisions are fulfilled. Payment for items delivered to locations other than the work site will be limited to: (1) materials required by the technical provisions; or (3) materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

(b) Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contractor and including the value of material and labor incorporated into the item. In addition to petroleum products, payment for materials delivered off-site is limited to the **type and quantity of construction materials approved by the Contracting Officer prior to commencement of construction.**

(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 **TWENTY PERCENT (20%)** of the total amount of work to be performed under the contract (design work by the A-E of record is not covered by this clause). 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.

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

(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)

52.236-7 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)

52.236-9 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)

52.236-15 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)

52.236-21 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)

52.236-23 RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiencies in its designs, drawings, specifications, and other services.

(b) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract, and the Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services furnished under this contract.

(c) The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law.

(d) If the Contractor is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder.

(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)

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals 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 proposal must initial each erasure or change appearing on any proposal form.

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

- (1) Lump sum price;
 - (2) Alternate prices;
 - (3) Units of construction; or
 - (4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.
- (c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words “no proposal” in the space provided for any item on which no price is submitted.
- (d) Alternate proposals will not be considered unless this solicitation authorizes their submission.
- (End of provision)

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)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far/>

<http://www.acq.osd.mil/dp/dars/dfars/dfars.html>

http://acqnet.saalt.army.mil/library/AFAR/AFARS_OCTOBER_2001.pdf

<http://www.hq.usace.army.mil/cepr/asp/library>

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.

252.242-7000 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)

SECTION 00800 Special Contract Requirements

CLAUSES INCORPORATED BY REFERENCE:

EM 385-1-1	USACE Safety and Health Requirements Manual, EM 385-1-1	FEB 2001
Note		
SCR-DB-001	Design-Build Contract - Order of Precedence	JAN 2001
SCR-DB-002	Proposed Betterments	JAN 2001

CLAUSES INCORPORATED BY FULL TEXT

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

The Contractor shall be required to (a) commence work under this contract within **TEN (10)** 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 the dates or number of calendar days after the date of receipt by him of notice to proceed set forth on the schedule below except as specified in the various landscaping sections. The time stated for completion shall include final cleanup of the premises.

SCHEDULE

Item of Work	Commencement Time	Completion Time	Liquidated Damages Per Calendar Day
1.1 Design and Construction of Ranges, and all site improvements	10 calendar days after receipt of NTP.	365 calendar days after receipt of NTP	(See 52.211-12)
1.2 Establish of Turf	(See Note 2)		
1.3 Final As-Built Drawings	(See Note 3)		
1.4 Operation and Maintenance (O&M) Manuals	(See Note 4)		

NOTES:

1. Refer to Section 01130 for Government review periods for 50% and 100% design submittals.

2. Establishment of Turf. Planting shall be accomplished during the planting season as specified in the technical requirements, or portion thereof (but not less than 15 days), following substantial completion of building construction. No payment will be made for establishment of Turf until all requirements of ESTABLISHMENT OF TURF are adequately performed and accepted, as determined by the Contracting Officer.

Exception to completion time: In case the Contracting Officer determines that seeding is not feasible during the completion time stated above, the Contractor shall accomplish such seeding in the first planting period following the contract completion time. **Contractor must coordinate schedule for seeding at the ranges with the Contracting Officer and Range Control if work is completed after the completion date of the contract.**

3. As-Built Drawings. The Contractor shall commence work on final as-built drawings upon his receipt of the Approved preliminary as-built drawings, the reproducible original contract drawings and CADD. The Contractor shall provide final as-built drawings as specified in section **01720**. The Contractor shall have 60 calendar days

after approval and turnover of each separate range facility to complete and return to the Contracting Officer all specified final as-built drawing work. Upon satisfactory completion of this work the Contractor shall have earned the amount shown for Final As-Built drawings in the Bid Schedule.

4. O&M Manuals. O&M Manuals shall be developed and submitted in accordance with Section 01730 OPERATION AND MAINTENANCE INSTRUCTION, at least **SIXTY (60)** calendar days prior to the scheduled contract completion date for each applicable construction phase. Upon approval of fully developed O&M Manuals the Contractor shall have earned the amount shown for "Operation and Maintenance Manuals" in the Proposal Schedule.

(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 \$745.00 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)

SCR-DB-004 KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS – AUG 1997

In connection with the services covered by this contract, any in-house personnel, subcontractors, and outside associates or consultants will be limited to individuals or firms that were specifically identified and agreed to during negotiations. The contractor shall obtain the Contracting Officer's written consent before making any substitution for these designated in-house personnel, subcontractors, associates, or consultants.

(End of Clause)

SCR-DB-005 RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN – FEB 2000

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and any other non-construction services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiency in its designs, drawings, specifications, and other non-construction services and perform any necessary rework or modifications, including any damage to real or personal property, resulting from the design error or omission.

(b) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract. The Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services described in paragraph (a) furnished under this contract.

(c) The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law.

(d) if the Contractor is comprised of more than one legal entity, each entity shall be jointly and severally liable thereunder.

(End of Clause)

WARRANTY OF CONSTRUCTION WORK – AUG 1997

- (a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (1) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, 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, or workmanship.
- (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.
- 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--
- Obtain all warranties that would be given in normal commercial practice;
 - Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and
 - 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 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)

SCR-DB-007 SEQUENCE OF DESIGN-CONSTRUCTION – AUG 1997

(a) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. The Contractor may begin construction on portions of the work for which the Government has reviewed the final design submission and has determined satisfactory for purposes of beginning construction. The ACO or COR will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the ACO or COR, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

(b) If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

(c) No payment will be made for any in-place construction until all required submittals have been made, reviewed, and are satisfactory to the Government.

(End of clause)

SCR-DB-008 SEQUENCE OF DESIGN -CONSTRUCTION (FAST TRACK) – AUG 1997

(a) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. The Contractor may begin construction on portions of the work for which the Government has reviewed the final design submission and has determined satisfactory for purposes of beginning construction. The ACO or COR will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the ACO or COR, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

(b) If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

(c) No payment will be made for any in-place construction until all required Submittals have been made, reviewed and are satisfactory to the Government.

(End of Clause)

SCR-DB-009 CONSTRUCTOR'S ROLE DURING DESIGN PROCESS – JUN 1998

The Contractor's construction management key personnel shall be actively involved during the design process to effectively integrate the design and construction requirements of this contract. In addition to the typical required construction activities, the Contractor's involvement includes, but is not limited to, actions such as: integrating the design schedule into the Master Schedule to maximize the effectiveness of fasttracking design and construction (within the limits allowed in the contract), ensuring constructibility and economy of the design, integrating the shop drawing and installation drawing process into the design, executing the material and equipment acquisition programs to meet critical schedules, effectively interfacing the construction QC program with the design QC program, and maintaining and providing the design team with accurate, up-to-date redline and as-built documentation. The Contractor shall require and manage the active involvement of key trade subcontractors in the above activities.

(End of Clause)

SCR-DB-010 VALUE ENGINEERING AFTER AWARD – JUNE 1999

- (a) In reference to Contract Clause 52.248-3, "Value Engineering Construction," the Government may refuse to entertain a "Value Engineering Change Proposal" (VECP) for those "performance oriented" aspects of the Solicitation documents which were addressed in the Contractor's accepted contract proposal and which were evaluated in competition with other offerors for award of this contract.
- (b) The Government may consider a VECP for those "prescriptive" aspects of the Solicitation documents, not addressed in the Contractor's accepted contract proposal or addressed but evaluated only for minimum conformance with the Solicitation requirements.
- (c) For purposes of this clause, the term "performance oriented" refers to those aspects of the design criteria or other contract requirements which allow the Offeror or Contractor certain latitude, choice of and flexibility to propose in its accepted contract offer a choice of design, technical approach, design solution, construction approach or other approach to fulfill the contract requirements. Such requirements generally tend to be expressed in terms of functions to be performed, performance required or essential physical characteristics, without dictating a specific process or specific design solution for achieving the desired result.
- (d) In contrast, for purposes of this clause, the term "prescriptive" refers to those aspects of the design criteria or other Solicitation requirements wherein the Government expressed the design solution or other requirements in terms of specific material, approaches, systems, and/or processes to be used. Prescriptive aspects typically allow the Offerors little or no freedom in the choice of design approach, materials, fabrication techniques, methods of installation, or any other approach to fulfill the contract requirements.

(End of Clause)

SCR-DB-012 DESIGN CONFERENCES – AUG 1997

- (a) Pre-Work: As part of the Pre-work Conference conducted after contract award, key representatives of the Government and the Contractor will review the design submission and review procedures specified herein, discuss the preliminary design schedule and provisions for phase completion of the D/B documents with construction activities (fast tracking), as appropriate, meet with Corps of Engineers Design Review personnel and key Using Agency points of contact and any other appropriate pre-design discussion items.
- (b) Design Charette: After award of the contract, the Contractor shall visit the site and conduct extensive interviews, and problem solving discussions with the individual users, base personnel, Corps of Engineers personnel to acquire all necessary site information, review user operations, and discuss user needs. The Contractor shall document all discussions. The design shall be finalized as direct result of these meetings.
- (c) Design Review Conferences: Review conferences will be held on base for each design for each submittal. The Contractor will bring the personnel that developed the design submittal to the review conference. The conferences will take place the week after the review is complete.

(End of Clause)

SCR-DB-013 TRAINING – FEB 2000

The Contractor shall provide operational and maintenance training for all systems furnished under this contract for the operating and maintenance personnel. The system manufacturer shall put on the training, where feasible. All operation and maintenance manuals shall be submitted and approved prior to conducting the training and shall be used during training. The Contractor shall video tape the training session on VHS tapes and provide the tapes to the Government.

(End of Clause)

SCR-DB-014 RECOMMENDED INSURANCE COVERAGE (FEB 2000)

The Design -Build Contractor's attention is invited to the contract requirements concerning "RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN" and "WARRANTY OF CONSTRUCTION WORK". These requirements vest in the Contractor complete responsibility for the professional quality, technical accuracy, and coordination of all design, drawings, specifications and other work or materials furnish by his in-house or consultant forces. The Design -Build Contractor must correct and revise any errors or deficiencies in his work, notwithstanding any review, approval, acceptance or payment by the Government. The Contractor must correct and change any work resulting from his defective design at no additional cost to the Government. The requirements further stipulate that the Design-Build Contractor shall be liable to the Government for the damages to the Government caused by negligent performance. Though not a mandatory requirement, this is to recommend that the Design-Build Contractor investigate and obtain appropriate insurance coverage for such liability protection.

(End of Clause)

SCR-DB-017 COST LIMITATION – TARGET CEILING – JUNE 1999

The target ceiling for contract award for design and construction is \$7,118,000.00, based on the funds made available for this project. The Government cannot guarantee that additional funds will be made available for award. Offerors are under no obligation to approach this ceiling.

(End of Clause)

WAGE RATES

BUILDING CONSTRUCTION	MO020005
HEAVY AND HIGHWAY CONSTRUCTION	MO020001

GENERAL DECISION MO020005 05/03/02 MO5
 General Decision Number MO020005

Superseded General Decision No. MO010005

State: Missouri

Construction Type:
 BUILDING

County(ies):
 PULASKI

BUILDING CONSTRUCTION PROJECTS (Does not include single family homes and apartments up to and including 4 stories).

Modification Number	Publication Date
0	03/01/2002
1	05/03/2002

COUNTY(ies):
 PULASKI

* BRMO0015A 09/01/2001

	Rates	Fringes
BRICKLAYERS	22.10	5.65

* ENGI0513A 05/01/2002

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
Backhoes	22.27	12.26
Cranes	22.27	12.26

HOURLY PREMIUMS:

Backhoe Hydraulic, 2 cu. yds. or under without oiler	\$2.00
Certified Crane Operator	\$1.50
Crane Climbing (such as Linden); Crane, Pile Driving and Extracting; Crane with boom (including jib) over 100' from pin to pin add \$0.01 per foot to maximum of \$4.00;	
Crane, using Rocket Socket Tool	\$0.50

PAIN1265B 07/01/2001

	Rates	Fringes
PAINTERS (Including Drywall Finishing):		
Brush & Roller	17.54	7.37
Drywall Finisher/Taper	18.04	7.37
Spray	18.04	7.37
Lead Abatement	19.79	7.37

SUMO1032A 10/18/1999

	Rates	Fringes
CARPENTERS (Including Drywall Hanging)	19.24	3.82

CEMENT MASONS	15.28	1.95
ELECTRICIANS	19.04	5.88
IRONWORKERS, STRUCTURAL	16.87	8.42
LABORERS, UNSKILLED	13.67	2.75
PIPEFITTERS (Including HVAC Piping)	24.25	10.28
PLUMBERS (Excluding HVAC Pipe Work)	19.03	5.50
POWER EQUIPMENT OPERATORS:		
Mechanics	19.12	8.30
ROOFERS	14.74	3.14
SHEET METAL WORKERS (Including HVAC Duct Work)	18.23	4.50

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)).

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 MO020001 05/24/02 MO1
 General Decision Number MO020001

Superseded General Decision No. MO010001

State: Missouri

Construction Type:
 HEAVY
 HIGHWAY

County(ies):
 STATEWIDE

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/01/2002
1	04/12/2002
2	05/03/2002
3	05/10/2002
4	05/24/2002

COUNTY(ies):
 STATEWIDE

Modification Number	Effective Date	Geographic Area	Rates	Fringes
CARP0007M	04/01/2001	CASS (Richards-Gebauer AFB ONLY), CLAY, JACKSON, PLATTE AND RAY COUNTIES		
		CARPENTERS & PILEDRIVERS	25.50	6.88

CARP0008C	05/01/1999	ST. LOUIS COUNTY AND CITY		
		CARPENTERS	26.49	5.69

CARP0011A	05/01/2001	CARPENTERS & PILEDRIVERS:		
		JEFFERSON AND ST. CHARLES COUNTIES	26.29	5.40
		FRANKLIN COUNTY	23.78	5.40
		WARREN COUNTY	23.78	5.40
		LINCOLN COUNTY	23.39	5.40
		PIKE, ST. FRANCOIS AND WASHINGTON COUNTIES	22.44	5.40
		BUCHANAN, CLINTON, JOHNSON AND LAFAYETTE COUNTIES	22.68	5.99
		ATCHISON, ANDREW, BATES, CALDWELL, CARROLL, DAVIESS, DEKALB, GENTRY, GRUNDY, HARRISON, HENRY, HOLT, LIVINGSTON, MERCER, NODAWAY,		

ST. CLAIR, SALINE AND WORTH COUNTIES	22.03	5.99
BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY, JASPER, LACLEDE, LAWRENCE, MCDONALD, NEWTON, OZARK, POLK, STONE, TANEY, VERNON, WEBSTER AND WRIGHT COUNTIES	21.68	5.99
CRAWFORD, DENT, GASCONADE, IRON, MADISON, MARIES, MONTGOMERY, PHELPS, PULASKI, REYNOLDS, SHANNON, AND TEXAS COUNTIES	21.73	5.40
RALLS, MARION, LEWIS, CLARK AND SCOTLAND COUNTIES	21.88	5.40
BENTON, MORGAN AND PETTIS COUNTIES	21.83	6.24
ADAIR, AUDRAIN, BOONE, CALLAWAY, CHARITON, COLE, COOPER, HOWARD, KNOX, LINN, MACON, MILLER,		
MONITEAU, MONROE, OSAGE, PUTNAM, RANDOLPH, SCHUYLER, SHELBY AND SULLIVAN	23.13	6.24
BOLLINGER, BUTLER, CAPE GIRARDEAU, DUNKLIN, MISSISSIPPI, NEW MADRID, PEMISCOT, PERRY, STE. GENEVIEVE, SCOTT, STODDARD AND WAYNE COUNTIES	22.46	4.72
CARTER, HOWELL, OREGON AND RIPLEY COUNTIES	21.54	4.72

ELEC0001B 06/01/2001

	Rates	Fringes
BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN, FRANKLIN, IRON, JEFFERSON, LINCOLN, MADISON, MISSISSIPPI, NEW MADRID, PEMISCOT, PERRY, REYNOLDS, RIPLEY, ST. CHARLES, ST. FRANCOIS, ST. LOUIS (City and County), STE. GENEVIEVE, SCOTT, STODDARD, WARREN, WASHINGTON AND WAYNE COUNTIES		
ELECTRICIANS	27.85	15.04

ELEC0002D 09/02/2001

	Rates	Fringes
ADAIR, AUDRAIN, BOONE, CALLAWAY, CAMDEN, CARTER, CHARITON, CLARK, COLE, COOPER, CRAWFORD, DENT, FRANKLIN, GASCONADE, HOWARD, HOWELL, IRON, JEFFERSON, KNOX, LEWIS, LINCON, LINN, MACON, MARIES, MARION, MILLER, MONITEAU, MONROE, MONTGOMERY, MORGAN, OREGON, OSAGE, PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. CHARLES, ST. FRANCOIS, ST. LOUIS (City and County), STE. GENEVIEVE, SCHUYLER, SCOTLAND, SHANNON, SHELBY, SULLIVAN, TEXAS, WARREN AND WASHINGTON COUNTIES.		

LINE CONSTRUCTION:

Lineman & Cable Splicer	27.48	42% + 2.10
Groundman Equipment Operator	24.60	42% + 2.10
Groundman Winch Driver	20.22	42% + 2.10

Groundman, Groundman Driver 19.47 42% + 2.10

ELEC0053F 08/27/2000

	Rates	Fringes
BATES, BENTON, CARROLL, CASS, CLAY, HENRY, JACKSON, JOHNSON, LAFAYETTE, PETTIS, PLATTE, RAY, AND SALINE COUNTIES.		

LINE CONSTRUCTION:

Lineman	27.80	9.99
Lineman Operator	25.97	9.46
Groundman Powderman	19.45	7.59
Groundman	18.49	7.31

ANDREW, ATCHINSON, BARRY, BARTON, BUCHANAN, CALDWELL, CEDAR, CHRISTIAN, CLINTON, DADE, DALLAS, DAVIESS, DE KALB, DOUGLAS, GENTRY, GREENE, GRUNDY, HARRISON, HICKORY, HOLT, JASPER, LACLEDE,

LAWRENCE, LIVINGSTON, McDONALD, MERCER, NEWTON, NODAWAY, OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER, WORTH, AND WRIGHT COUNTIES.

LINE CONSTRUCTION:

Lineman	26.75	9.69
Lineman Operator	25.41	9.30
Groundman Powderman	18.69	7.37
Groundman	17.30	6.98

ELEC0095C 06/01/2001

	Rates	Fringes
BARRY, BARTON, CEDAR, CRAWFORD, DADE, JASPER, LAWRENCE, MCDONALD, NEWTON, ST CLAIR, AND VERNON COUNTIES		

ELECTRICIANS:

Electricians	20.51	5.68
Cable Splicers	20.86	5.68

ELEC0124I 08/27/2001

	Rates	Fringes
BATES, BENTON, CARROLL, CASS, CLAY, COOPER, HENRY, JACKSON, JOHNSON, LAFAYETTE, MORGAN, PETTIS, PLATTE, RAY AND SALINE COUNTIES:		

ELECTRICIANS	28.78	11.87
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ELEC0257C 03/01/1999

	Rates	Fringes
AUDRAIN (Except, Cuivre Township), BOONE, CALLAWAY, CAMDEN, CHARITON, COLE, CRAWFORD, DENT, GASCONADE, HOWARD, MARIES, MILLER, MONITEAU, OSAGE, PHELPS AND RANDOLPH COUNTIES:		

Electricians	20.95	8.88
Cable Splicers	21.95	8.88

ELEC0350B 12/01/2000

Rates Fringes
 ADAIR, AUDRAIN (East of Highway 19), CLARK, KNOX, LEWIS, LINN,
 MACON, MARION, MONROE, MONTGOMERY, PIKE, PUTNAM, RALLS, SCHUYLER,
 SCOTLAND, SHELBY AND SULLIVAN COUNTIES

ELECTRICIANS	24.06	7.44
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* ELEC0453D 09/01/2001

Rates Fringes
 CHRISTIAN, DALLAS, DOUGLAS, GREENE, HICKORY, HOWELL, LACLEDE,
 OREGON, OZARK, POLK, SHANNON, WEBSTER AND WRIGHT COUNTIES

ELECTRICIANS	20.85	5.37+10%
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PULASKI AND TEXAS COUNTIES

ELECTRICIANS	25.50	5.37+10%
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STONE AND TANEY COUNTIES

ELECTRICIANS	14.45	4.97+10%
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ELEC0545D 12/01/2001

Rates Fringes
 ANDREW, BUCHANAN, CLINTON, DEKALB, ATCHISON, HOLT, MERCER,
 GENTRY, HARRISON, DAVIESS, GRUNDY, WORTH, LIVINGSTON, NODAWAY,
 AND CALDWELL COUNTIES

ELECTRICIANS	25.78	8.56
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ELEC0702D 09/04/1995

Rates Fringes
 BOLLINGER, BUTLER, CAPE GIRARDEAU, DUNKLIN, MADISON, MISSISSIPPI,
 NEW MADRID, PEMISCOT, SCOTT, STODDARD AND WAYNE COUNTIES

LINE CONSTRUCTION:

Lineman	25.50	17%+2.00
Groundman Equipment Operator (all crawler type equipment D-4 and larger)	21.87	17%+2.00
Groundman - Class A	15.45	17%+2.00

ENGI0016A 05/01/2001

Rates Fringes
 BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS,
 GREENE, JASPER, LAWRENCE, HICKORY, LACLEDE, MCDONALD, NEWTON,
 OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER AND
 WRIGHT COUNTIES

POWER EQUIPMENT OPERATORS GROUP 1	20.12	5.95
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GROUP 2	19.77	5.95
GROUP 3	19.57	5.95
GROUP 4	17.52	5.95

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt finishing machine & trench widening spreader; asphalt plant console operator; autograder; automatic slipform paver; backhoe; blade operator - all types; boat operator - tow; boilers-2; central mix concrete plant operator; clamshell operator; concrete mixer paver; crane operator; derrick or derrick trucks; ditching machine; dozer operator; dragline

operator; dredge booster pump; dredge engineman; dredge operator; drill cat with compressor mounted on cat; drilling or boring machine rotary self-propelled; highloader; hoisting engine - 2 active drums; launch hammer wheel; locomotive operator; - standard guage; mechanic and welders; mucking machine; off-road trucks; piledriver operator; pitman crane operator; push cat operator; quad trac; scoop operator - all types; shovel operator; sideboom cats; skimmer scoop operators; trenching machine operator; truck crane.

GROUP 2: A-frame; asphalt hot-mix silo; asphalt plant fireman (drum or boiler); asphalt plant man; asphalt plant mixer operator; asphalt roller operator; backfiller operator; barber-greene loader; boat operator (bridges and dams); chip spreader; concrete mixer operator - skip loader; concrete plant operator; concrete pump operator; crusher operator; dredge oiler; elevating grader operator; fork lift; greaser-fleet; hoisting engine - 1; locomotive operator - narrow gauge; multiple compactor; pavement breaker; powerbroom - self-propelled; power shield; rooter; side discharge concrete spreader; slip form finishing machine; stumpcutter machine; throttle man; tractor operator (over 50 h.p.); winch truck.

GROUP 3: Boilers - 1; chip spreader (front man); churn drill operator; clef plane operator; concrete saw operator (self-propelled); curb finishing machine; distributor operator; finishing machine operator; flex plane operator; float operator; form grader operator; pugmill operator; roller operator, other than high type asphalt; screening & washing plant operator; siphons & jets; sub-grading machine operator; spreader box operator, self-propelled (not asphalt); tank car heater operator (combination boiler & booster); tractor operator (50 h.p. or less); Ulmac, Ulric or similar spreader; vibrating machine operator, not hand;

GROUP 4: Grade checker; Oiler; Oiler-Driver

HOURLY PREMIUMS:

The following classifications shall receive \$.25 above GROUP 1 rate: Clamshells - 3 yds. or over; Cranes - Rigs or Piledrivers, 100 ft. of boom or over (including jib); Draglines - 3 yds. or over; Hoists - each additional active drum over 2 drums; Shovels - 3 yds. or over;

The following classifications shall receive \$.50 above GROUP 1 rate: Tandem scoop operator; Cranes - Rigs or Piledrivers, 150 ft. to 200 ft. of boom (including jib); Tandem scoop.

The following classifications shall receive \$.75 above GROUP 1 rate: Cranes - Rigs or Piledrivers, 200 ft. of boom or over (including jib.).

 ENGI0101A 05/01/2001

	Rates	Fringes
BUCHANAN, CASS, CLINTON AND LAFAYETTE COUNTIES		
POWER EQUIPMENT OPERATORS		
GROUP 1	21.70	8.15
GROUP 2	21.30	8.15
GROUP 3	19.30	8.15

ANDREW, ATCHISON, BATES, BENTON, CALDWELL, CARROLL, CHARITON, COOPER, DAVIESS, DEKALB, GENTRY, GRUNDY, HARRISON, HENRY, HOLT, HOWARD, JOHNSON, LINN, LIVINGSTON, MERCER, NODAWAY, PETTIS, SALINE, SULLIVAN AND WORTH COUNTIES

POWER EQUIPMENT OPERATORS		
GROUP 1	21.70	8.15
GROUP 2	21.30	8.15
GROUP 3	19.30	8.15

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt roller operator, finish; asphalt paver and spreader; asphalt plant operator; auto grader or trimmer or sub-grader; backhoe; blade operator (all types); boilers - 2; booster pump on dredge; bulldozer operator; boring machine (truck or crane mounted); clamshell operator; concrete mixer paver; concrete plant operator; concrete pump operator; crane operator; derrick or derrick trucks; ditching machine; dragline operator; dredge engineman; dredge operator; drill cat with compressor mounted (self-contained) or similar type self-propelled rotary drill (not air tract); drilling or boring machine (rotary-self-propelled); finishing machine operator; greaser; high loader-fork lift-skid loader (all types); hoisting engineer (2 active drums); locomotive operator (standard guage); mechanics and welders (field and plants); mucking machine operator; pile drive operator; pitman crane or boom truck (all types); push cat; quad track; scraper operators (all types); shovel operator; sideboom cats; side discharge spreader; skimmer scoop operators; slip form paver operator (CMI, Rex, Gomeco or equal); la tourneau rooter (all tiller types); tow boat operator; truck crane; wood and log chippers (all types).

GROUP 2: A-frame truck operator; articulated dump truck; back filler operator; boilers (1); chip spreader; churn drill operator; compressor; concrete mixer operator, skip loader; concrete saws (self-propelled); conveyor operator; crusher operator; distributor operator; elevating grader operator; farm tractor (all attachments); fireman rig; float operator; form

grade operator; hoisting engine (one drum); maintenance operator; multiple compactor; pavement breaker, self-propelled hydra-hammer (or similar type); paymill operator; power shield; pumps; roller operator (with or without blades); screening and washing plant; self-propelled street broom or sweeper; siphons and jets; straw blower; stump cutting machine; siphons and jets; tank car heater operator (combination boiler and booster); welding machine; vibrating machine operator (not hand held); welding machine.

GROUP 3: Oiler; oiler driver; mechanic.

HOURLY PREMIUMS:

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.25) ABOVE GROUP 1 RATE: Dragline operator - 3 yds. & over; shovel 3 yds. & over; clamshell 3 yds. & over; Crane, rigs or piledrivers, 100' of boom or over (incl. jib.), hoist - each additional active drum over 2 drums

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.50) ABOVE GROUP 1 RATE: Tandem scoop operator; crane, rigs or piledrivers 150' to 200' of boom (incl. jib.)

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.75) ABOVE GROUP 1 RATE: Crane rigs, or piledrivers 200 ft. of boom or over (including jib.)

 ENGI0101E 04/01/2002

	Rates	Fringes
CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES		
POWER EQUIPMENT OPERATORS:		
GROUP 1	23.79	8.97
GROUP 2	22.75	8.97
GROUP 3	18.28	8.97
GROUP 4	21.63	8.97

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt roller operator, finish; asphalt paver and spreader; asphalt plant operator; auto grader or trimmer or sub-grader; backhoe; blade operator (all types); boilers-2; booster pump on dredge; boring machine (truck or crane mounted); bulldozer operator; clamshell operator; concrete cleaning decontamination machine operator; concrete mixer paver; concrete plant operator; concrete pump operator; crane operator; derrick or derrick trucks; ditching machine; dragline operator; dredge engineman; dredge operator; drillcat with compressor mounted (self-contained) or similar type self propelled rotary drill (not air tract); drilling or boring machine (rotary - self-propelled); finishing machine operator; greaser; heavy equipment robotics operator/mechanic; horizontal directional drill operator; horizontal directional drill locator; loader-forklift - skid loader (all types); hoisting engineer (2 active drums); locomotive operator (standard guage); master environmental maintenance mechanic; mechanics and welders (field and plants); mucking machine operator; piledrive

operator; pitman crane or boom truck (all types); push cat; quad-track; scraper operators (all types); shovel operator; side discharge spreader; sideboom cats; skimmer scoop operator; slip-form paver (CMI, REX, Gomaco or equal); la tourneau rooter (all tiller types); tow boat operator; truck crane; ultra high perssure waterjet cutting tool system operator/mechanic; vacuum blasting machine operator/mechanic;

wood and log chippers (all types)

GROUP 2: "A" Frame truck operator; articulated dump truck; back filler operator; boilers (1); chip spreader; churn drill operator; concrete mixer operator, skip loader; concrete saws (self-propelled); conveyor operator; crusher operator; distributor operator; elevating grader operator; farm tractor (all attachments); fireman rig; float operator; form grader operator; hoisting engine (1 drum); maintenance operator; multiple compactor; pavement breaker, self-propelled hydra-hammer (or similar type); power shield; paymill operator; pumps; siphons and jets; stump cutting machine; tank car heater operator (combination boiler and booster); compressor; roller operator (with or without blades); screening and washing plant; self-propelled street broom or sweeper; straw blower; tank car heater operator (combination boiler and booster); vibrating machine operator (not hand held)

GROUP 3: Oilers

GROUP 4: Oiler Driver (All Types)

FOOTNOTE:

HOURLY PREMIUMS

FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.25) ABOVE GROUP 1 RATE: Clamshells - 3 yd. capacity or over; Cranes or rigs, 80 ft. of boom or over (including jib); Draglines, 3 yd. capacity or over; Piledrivers 80 ft. of boom or over (including jib); Shovels & backhoes, 3 yd. capacity or over.

ENGI0513D 05/06/2002

Rates Fringes
FRANKLIN, JEFFERSON, LINCOLN, ST CHARLES, AND WARREN COUNTIES

POWER EQUIPMENT OPERATORS:

	Rates	Fringes
GROUP 1	24.92	12.24
GROUP 2	23.62	12.24
GROUP 3	20.62	12.24
GROUP 4	23.17	12.24

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Backhoe, Cable; Backhoe, Hydraulic (2 cu yds bucket and under regardless of attachment, one oiler for 2 or 3, two oilers for 4 through 6); Backhoe, Hydraulic over 2 cu yds; Cableway; Crane, Crawler or Truck; Crane, Hydraulic - Truck or Cruiser mounted, 16 tons and over; Crane, Locomotive; crane with boom including jib over 100 ft from pin to pin; Crane using rock socket tool; Derrick, Steam; Derrick Car and Derrick Boat;

Dragline, 7 cu yds and over; Dredge; Gradall, Crawler or tire mounted; Locomotive, Gas, Steam & other powers; Pile Driver, Land or Floating; Scoop, Skimmer; Shovel, Power (Electric, Gas, Steam or other powers); Shovel, Power (7 cu yds and over); Switch Boat; Whirley; Air Tugger with air compressor; Anchor Placing Barge; Asphalt Spreader; Athey Force Feeder Loader, self-propelled;

Backfilling Machine; Boat Operator - Push Boat or Tow Boat (job site); Boiler, High Pressure Breaking in Period; Boom Truck, Placing or Erecting; Boring Machine, Footing Foundation; Bullfloat; Cherry Picker; Combination Concrete Hoist and Mixer (such as Mixermobile); Compressor, Two 125 CFM and under; Compressor, Two through Four over 125 CFM; Compressor when operator runs throttle; Concrete Breaker (Truck or Tractor mounted); Concrete Pump (such as Pumpcrete machine); Concrete Saw (self-propelled); Concrete Spreader; Conveyor, Large (not selfpropelled) hoisting or moving brick and concrete into, or into and on floor level, one or both; Crane, Climbing (such as Linden); Crane, Hydraulic - Rough Terrain, self-propelled; Crane, Hydraulic - Truck or Cruiser mounted - under 16 tons; Drilling machine - Self-powered, used for earth or rock drilling or boring (wagon drills and any hand drills obtaining power from other souces including concrete breakers, jackhammers and Barco equipmnet no engineer required); Elevating Grader; Engine Man, Dredge; Excavator or Powerbelt Machine; Finishing Machine, self-propelled oscillating screed; Forklift; Generators, Two through Six 30 KW or over; Grader, Road with power blade; Greaser; Highlift; Hoist, Concrete and Brick (Brick cages or concrete skips operating or on tower, Towermobile, or similar equipment); Hoist, Three or more drums in use; Hoist, Stack; Hydro-Hammer; Lad-A-Vator, hoisting brick or concrete; Loading Machine such as Barber-Greene; Mechanic on job site

GROUP 2: Air Tugger with plant air; Boiler (for power or heating shell of building or temporary enclosures in connection with construction work); Boiler, Temporary; Compressor, One over 125 CFM; Compressor, truck mounted; Conveyor, Large (not self-propelled); Conveyor, Large (not self-propelled) moving brick and concrete (distributing) on floor level; Curb Finishing Machine; Ditch Paving Machine; Elevator (outside); Endless Chain Hoist; Fireman (as required); Form Grader; Hoist, One Drum regardless of size (except brick or concrete); Lad-A-Vator, other hoisting; Manlift; Mixer, Asphalt, over 8 cu ft capacity; Mixer, one bag capacity or less; Mixer, without side loader, two bag capacity or more; Mixer, with side loader, regardless of size, not Paver; Mud Jack (where mud jack is used in conjenction with an air compressor, operator shall be paid \$.55 per hour in addition to his basic hourly rate for covering both operations); Pug Mill operator; Pump, Sump - self powered, automatic controlled over 2"; Scissor Lift (used for hoisting); Skid Steer Loader; Sweeper, Street; Tractor, small wheel type 50 HP and under with grader blade and similar equipment; Welding Machine, One over 400 amp; Winch, operating from truck

GROUP 3: Boat operator - outboard motor, job site; Conveyors (such as Con-Vay-It) regardless of how used; Elevator (inside); Heater operator, 2 through 6; Sweeper, Floor

GROUP 4: Crane type

HOURLY PREMIUMS:

Backhoe, Hydraulic 2 cu yds or less without oiler - \$2.00;

Certified Crane Operator - \$1.50; Certified Hazardous Material Operator \$1.50; Crane, climbing (such as Linden) - \$.50; Crane, Pile Driving and Extracting - \$.50 Crane with boom (including job) over 100 ft from pin to pin - add \$.01 per foot to maximum of \$4.00); Crane, using rock socket tool - \$.50; Derrick, diesel, gas or electric hoisting material and erecting steel (150 ft or more above ground) - \$.50; Dragline, 7 cu yds and over - \$.50; Hoist, Three or more drums in use - \$.50; Scoop, Tandem - \$.50; Shovel, Power - 7 cu yds and over - \$.50; Tractor, Tandem Crawler - \$.50; Tunnel, man assigned to work in tunnel or tunnel shaft - \$.50; Wrecking, when machines are working on second floor or higher - \$.50

ENGI0513G 05/01/2002

	Rates	Fringes
ADAIR, AUDRAIN, BOLLINGER, BOONE, BUTLER, CALLAWAY, CAPE GIRARDEAU, CARTER, CLARK, COLE, CRAWFORD, DENT, DUNKLIN, GASCONADE, HOWELL, IRON, KNOX, LEWIS, MACON, MADISON, MARIES, MARION, MILLER, MISSISSIPPI, MONITEAU, MONROE, MONTGOMERY, MORGAN, NEW MADRID, OREGON, OSAGE, PEMISCOT, PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. FRANCOIS, STE. GENEVIEVE, SCHUYLER, SCOTLAND, SCOTT, SHANNON, SHELBY, STODDARD, TEXAS, WASHINGTON, AND WAYNE COUNTIES		

POWER EQUIPMENT OPERATORS

GROUP 1	21.35	12.23
GROUP 2	21.00	12.23
GROUP 3	20.80	12.23
GROUP 4	17.15	12.23

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt finishing machine & trench widening spreader, asphalt plant console operator; autograder; automatic slipform paver; back hoe; blade operator - all types; boat operator tow; boiler two; central mix concrete plant operator; clam shell operator; concrete mixer paver; crane operator; derrick or derrick trucks; ditching machine; dozer operator; dragline operator; dredge booster pump; dredge engineman; dredge operator; drill cat with compressor mounted on cat; drilling or boring machine rotary self-propelled; highloader; hoisting engine 2 active drums; launchhammer wheel; locomotive operator standrad guage; mechanics and welders; mucking machine; piledriver operator; pitman crane operator; push cat operator; quad-trac; scoop operator; sideboom cats; skimmer scoop operator; trenching machine operator; truck crane, shovel operator.

GROUP 2: A-Frame; asphalt hot-mix silo; asphalt roller operator asphalt plant fireman (drum or boiler); asphalt plant man; asphalt plant mixer operator; backfiller operator; barber-greene

loader; boat operator (bridge & dams); chip spreader; concrete mixer operator skip loader; concrete plant operator; concrete pump operator; dredge oiler; elevating graded operator; fork lift; grease fleet; hoisting engine one; locomotive operator narrow gauge; multiple compactor; pavement breaker; powerbroom

self-propelled; power shield; rooter; slip-form finishing machine; stumpcutter machine; side discharge concrete spreader; throttleman; tractor operator (over 50 hp); winch truck; asphalt roller operator; crusher operator.

GROUP 3: Spreader box operator, self-propelled not asphalt; tractor operator (50 h.p. or less); boilers one; chip spreader (front man); churn drill operator; compressor over 105 CFM 2-3 pumps 4" & over; 2-3 light plant 7.5 KWA or any combination thereof; clef plane operator; compressor maintenance operator 2 or 3; concrete saw operator (self-propelled); curb finishing machine; distributor operator; finishing machine operator; flex plane operator; float operator; form grader operator; pugmill operator; riller operator other than high type asphalt; screening & washing plant operator; siphons & jets; subgrading machine operator; tank car heater (combination boiler & booster); ulmac, ulric or similar spreader; vibrating machine operator; hydrobroom.

GROUP 4: Oiler; grout machine; oiler driver; compressor over 105 CFM one; conveyor operator one; maintenance operator; pump 4" & over one.

FOOTNOTE:

HOURLY PREMIUMS

Backhoe hydraulic, 2 cu. yds. or under without oiler - \$2.00
 Certified Crane Operator - \$1.50; Certified Hazardous Material Operator \$1.50; Crane, climbing (such as Linden) - \$0.50;
 Crane, pile driving and extracting - \$0.50; Crane, with boom (including jib) over 100' from pin to pin add \$0.01 per foot to maximum of \$4.00; Crane, using rock socket tool - \$0.50;
 Derrick, diesel, gas or electric, hoisting material and erecting steel (150' or more above the ground) - \$0.50;
 Dragline, 7 cu. yds, and over - \$0.50; Hoist, three or more drums in use - \$0.50; Scoop, Tandem - \$0.50; Shovel, power - 7 cu. yds. or more - \$0.50; Tractor, tandem crawler - \$0.50;
 Tunnel, man assigned to work in tunnel or tunnel shaft - \$0.50; Wrecking, when machine is working on second floor or higher - \$0.50;

 ENGI0513H 05/01/2002

	Rates	Fringes
ST. LOUIS CITY AND COUNTY		
POWER EQUIPMENT OPERATORS:		
GROUP 1	24.92	12.24
GROUP 2	24.92	12.24
GROUP 3	23.02	12.24
GROUP 4	20.02	12.24
GROUP 5	19.56	12.24

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Backhoe, cable or hydraulic; cableway; crane, crawler or truck; crane, hydraulic-truck or cruiser mounted 16 tons & over; crane locomotive; derrick, steam; derrick car & derrick boat; dragline; dredge; gradall, crawler or tire mounted; locomotive, gas, steam & other powers; pile driver, land or floating; scoop, skimmer; shovel, power (steam, gas, electric, or other powers); switch boat; whirley.

GROUP 2: Air tugger w/air compressor; anchor-placing barge; asphalt spreader; atehy force feeder loader (self-propelled); backfilling machine; backhoe-loader; boat operator-push boat or tow boat (job site); boiler, high pressure breaking in period; boom truck, placing or erecting; boring machine, footing foundation; bull-float; cherry picker; combination concrete hoist & mixer (such as mixer mobile); compressor (when operator runs throttle); concrete breaker (truck or tractor mounted); concrete pump, such as pump-crete machine; concrete saw (self-propelled), concrete spreader; conveyor, large (not self-propelled), hoisting or moving brick and concrete into, or into and on floor level, one or both; crane, hydraulic-rough terrain, self-propelled; crane hydraulic-truck or cruiser mounted-under 16 tons; drilling machines, self-powered use for earth or rock drilling or boring (wagon drills and any hand drills obtaining power from other sources including concrete breakers, jackhammers and barco equipment-no engineer required); elevating grader; engineman, dredge; excavator or powerbelt machine; finishing machine, self-propelled oscillating screed; forklift; grader, road with power blade; highlift; greaser; hoist, stack, hydro-hammer; loading machine (such as barber-greene); machanic, on job site; mixer, pipe wrapping machines; plant asphalt; plant, concrete producing or ready-mix job site; plant heating-job site; plant mixing-job site; plant power, generating-job site; pumps, two through six self-powered over 2"; pumps, electric submersible, two through six, over 4"; quad-track; roller, asphalt, top or sub-grade; scoop, tractor drawn; spreader box; sub-grader; tie tamper; tractor-crawler, or wheel type with or without power unit, power take-offs and attachments regardless of size; trenching machine; tunnel boring machine; vibrating machine automatic, automatic propelled; welding machines (gasoline or diesel) two through six; well drilling machine

GROUP 3: Conveyor, large (not self-propelled); con-veyor, large (not self-propelled) moving brick and concrete distributing) on floor level; mixer two or more mixers of one bag capacity or less; air tugger w/plant air; boiler, for power or heating on construction projects; boiler, temporary; compressor (mounted on truck; curb finishing machine; ditch paving machine; elevator;

endless chain hoist; form grader; hoist, one drum regardless of size; lad-a-vator; manlift; mixer, asphalt,

over 8 cu. ft. capacity, without side loader, 2 bag capacity or more; mixer, with side loader, regardless of size; pug mill operator; pump, sump-self-powered, automatic controlled over 2" during use in connection with construction work; sweeper, street; welding machine, one over 400 amp.; winch operating from truck; scissor lift (used for hoisting); tractor, small wheel type 50 h.p. & under with grader blade & similar equipment

GROUP 4: Boat operator-outboard motor (job site); conveyor (such as con-vay-it) regardless of how used; sweeper, floor

GROUP 5: Oiler on dredge and on truck crane.

HOURLY PREMIUMS:

Backhoe, hydraulic	
2 cu. yds. or under without oiler	\$2.00
Certified Crane Operator	1.50
Certified Hazardous Material Operator	1.50
Crane, climbing (such as Linden)	.50
Crane, pile driving and extracting	.50
Crane, with boom (including jib) over 100' (from pin to pin) add \$.01 per foot to maximum of	4.00
Crane, using rock socket tool	.50
Derrick, diesel, gas or electric, hoisting material and erecting steel (150' or more above ground)	.50
Dragline, 7 cu. yds. and over	.50
Hoist, three (3) or more drums in use	.50
Scoop, Tandem	.50
Shovel, power - 7 cu. yds. or more	.50
Tractor, tandem crawler	.50
Tunnel, man assigned to work in tunnel or tunnel shaft	.50
Wrecking, when machine is working on second floor or higher	.50

IRON0010M 04/01/2001

BUCHANAN, CASS, CLAY, JACKSON, JOHNSON, LAFAYETTE, PLATTE AND RAY Counties

IRONWORKERS	22.70	11.63
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ANDREW, ATCHISON, BARTON, BATES, BENTON, CALDWELL, CAMDEN, CARROLL, CEDER CHARITON, CHRISTIAN, CLINTON, COOPER, DADE, DALLAS, DAVIESS, DE KALB, GENTRY, GREENE, GRUNDY, HARRISON, HENRY, HICKORY, HOLT, HOWARD, LACLEDE, LINN, LIVINGSTON, MERCER, MONITEAU, MORGAN, NODAWAY, PETTIS, POLK, PUTNAM, RANDOLPH, ST. CLAIR, SALINE, SULLIVAN, TANEY, VERNON, WEBSTER, WRIGHT and WORTH Counties; and portions of ADAIR, BOONE, MACON, MILLER, and

RANDOLPH Counties

IRONWORKERS	19.70	11.63

IRON0321C 05/01/2002		
	Rates	Fringes
DOUGLAS, HOWELL and OZARK COUNTIES		
IRONWORKERS	17.70	8.01

IRON0396D 08/01/2001		
	Rates	Fringes
ST. LOUIS (City and County), ST. CHARLES, JEFFERSON, IRON, FRANKLIN, LINCOLN, WARREN, WASHINGTON, ST. FRANCOIS, STE. GENEVIEVE, and REYNOLDS Counties; and portions of MADISON, PERRY, BOLLINGER, WAYNE, and CARTER Counties		
IRONWORKERS	25.34	11.42

IRON0396I 08/01/2001		
	Rates	Fringes
AUDRAIN, CALLAWAY, COLE, CRAWFORD, DENT, GASCONADE, MARIES, MONTGOMERY, OSAGE, PHELPS, PIKE, PULASKI, TEXAS, and WRIGHT Counties; and portions of CAMDEN, DOUGLAS, HOWELL, MILLER, OREGON, BOONE, SHANNON, LACLEDE, MONROE, and RALLS Counties		
IRONWORKERS	20.56	11.29

IRON0577F 06/01/2001		
	Rates	Fringes
ADAIR, CLARK, KNOX, LEWIS, MACON, MARION, MONROE, RALLS, SCHUYLER, SCOTLAND, AND SHELBY COUNTIES		
IRONWORKERS	19.85	9.06

IRON0584E 06/01/2001		
	Rates	Fringes
BARRY, JASPER, LAWRENCE, MCDONALD, NEWTON AND STONE Counties		
IRONWORKERS	18.20	7.87

IRON0782D 05/01/2001		
	Rates	Fringes
CAPE GIRARDEAU, MISSISSIPPI, NEW MADRID, SCOTT, & STODDARD Counties; and portions of BOLLINGER, BUTLER, CARTER, DUNKLIN, MADISON, PEMISCOT, PERRY, RIPLEY, and WAYNE Counties		
IRONWORKERS:		
All Major River Work		
(Dams, Bridges):		
Projects \$20 million		

or more 20.65 9.88

All Other Work 19.55 9.11

* LABO0042C 03/04/2002

ST. LOUIS (City and County) Rates Fringes

LABORERS:

Plumber Laborers 23.30 7.10

LABO0042H 03/06/2002

ST. LOUIS (City and County) Rates Fringes

LABORERS:

Laborers, Flagperson 23.11 7.10
 Wrecking 22.99 7.10
 Dynamiter, Powderman 23.61 7.10

LABO0424B 05/01/2002

FRANKLIN COUNTY Rates Fringes

LABORERS

GROUP 1 21.65 6.40
 GROUP 2 22.25 6.40

JEFFERSON COUNTY

LABORERS

GROUP 1 21.70 6.40
 GROUP 2 22.30 6.40

ADAIR, AUDRAIN, BOLLINGER, BOONE, BUTLER, CALLAWAY, CAPE GIRARDEAU, CARTER, CHARITON, CLARK, COLE, COOPER, CRAWFORD, DENT, DUNKLIN, GASCONADE, HOWARD, HOWELL, IRON, KNOX, LEWIS, LINN, MACON, MADISON, MARIES, MARION, MILLER, MISSISSIPPI, MONITEAU, MONROE, NEW MADRID, OREGON, OSAGE, PEMISCOT, PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. FRANCOIS, STE. GENEVIEVE, SCHUYLER, SCOTLAND, SCOTT, SHANNON, SHELBY, STODDARD, SULLIVAN, TEXAS, WASHINGTON, AND WAYNE COUNTIES

LABORERS

GROUP 1 20.20 6.40
 GROUP 2 20.80 6.40

LINCOLN, MONTGOMERY AND WARREN COUNTIES

LABORERS

GROUP 1 20.45 6.40
 GROUP 2 21.05 6.40

LABORERS CLASSIFICATIONS

GROUP 1 - General laborer-flagman, carpenter tenders; salamander Tenders; Dump Man; Ticket Takers; loading trucks under bins, hoppers, and conveyors; track man; cement handler; dump man on earth fill; georgie buggy man; material batch hopper man; spreader on asphalt machine; material mixer man (except on manholes); coffer dams; riprap pavers rock, block or brick; scaffolds over ten feet not self-supported from ground up; skip man on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator; all work in connection with hydraulic or general dredging operations; form setters, puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material; topper of standing trees; feeder man on wood pulverizers, board and willow mat weavers and cabelee tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 ft. where compressed air is not used; abutement and pier hole men working six (6) ft. or more below ground; men working in coffer dams for bridge piers and footing in the river; barco tamper; jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditch lines; hot mastic kettlemen; hot tar applicator; hand blade operator; mortar men or brick or block manholes; rubbing concrete, air tool operator under 65 lbs.; caulker and lead man; chain or concrete saw under 15 h.p.; signal Gan; Guard rail and sign erectors.

GROUP 2 - Skilled laborers - Vibrator man; asphalt raker; head pipe layer on sewer work; batterboard man on pipe and ditch work; cliff scalers working from bosun's chairs; scaffolds or platforms on dams or power plants over 10 ft. high; air tool operator over 65 lbs.; stringline man on concrete paving; sandblast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills, gunite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 h.p. and over; grade checker; strigline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man; waterblaster - 1000 psi or over; asbestos and/or hazardous waste removal and/or disposal

LABO0579F	05/01/2001		
		Rates	Fringes
BUCHANAN AND LAFAYETTE COUNTIES			
LABORERS			
GROUP 1		18.04	6.29
GROUP 2		18.39	6.29

ANDREW, ATCHISON, BARRY, BARTON, BATES, BENTON, CALDWELL, CAMDEN, CARROLL, CEDAR, CHRISTIAN, CLINTON, DADE, DALLAS, DAVIESS, DEKALB, DOUGLAS, GREENE, GENTRY, GRUNDY, HARRISON, HENRY, HICKORY, HOLT, JASPER, JOHNSON, LACLEDE, LAWRENCE, LIVINGSTON,

MCDONALD, MERCER, MORGAN, NEWTON, NODAWAY, OZARK, PETTIS, POLK, ST. CLAIR, SALINE, STONE, TANEY, VERNON, WEBSTER, WORTH AND WRIGHT COUNTIES.

LABORERS		
GROUP 1	16.69	6.04
GROUP 2	17.24	6.04

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers - Carpenter tenders; salamander tenders; loading trucks under bins; hoppers & conveyors; track men & all other general laborers; air tool operator; cement handler-bulk or sack; dump man on earth fill; georgie buggy man; material batch hopper man; material mixer man (except on manholes); coffer dams; riprap pavers - rock, block or brick; signal man; scaffolds over ten feet not self-supported from ground up; skipman on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoline, oil drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator, all work in connection with hydraulic or general dredging operations; puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material or materials (where special protection is required); rubbing concrete; topper of standing trees; batter board man on pipe and ditch work; feeder man on wood pulverizers; board and willow mat weavers and cable tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 feet where compressed air is not used; abutment and pier hole men working six (6) feet or more below ground; men working in coffer dams for bridge piers and footings in the river; ditchliners; pressure groutmen; caulker; chain or concrete saw; cliffscalers working from scaffolds, bosuns' chairs or platforms on dams or power plants over (10) feet above ground; mortarmen on brick or block manholes; toxic and hazardous waste work.

GROUP 2: Skilled Laborers - Head pipe layer on sewer work; laser beam man; Jackson or any other similar tamp; cutting torch man; form setters; liners and stringline men on concrete paving, curb, gutters; hot mastic kettleman; hot tar applicator; sandblasting and gunite nozzle men; air tool operator in tunnels; screed man on asphalt machine; asphalt raker; barco tamper; churn drills; air track drills and all similar drills; vibrator man; stringline man for electronic grade control; manhole builders-brick or block; dynamite and powder men; grade checker.

* LABO0660H 03/06/2002

	Rates	Fringes
ST. CHARLES COUNTY		
LABORERS:		
GROUP 1	22.37	6.49
GROUP 2	22.37	6.49

LABORERS CLASSIFICATIONS

GROUP 1: General laborer; carpenter tender; salamander tender; dump man; ticket takers; flagman; loading trucks under bins, hoppers, and conveyors; track men; cement handler; dump man on earth fill; Georgie buggy man; material batch hopper man; spreader on asphalt machine; material mixer man (except on manholes); coffer dams; riprap paver - rock, block, or brick; signal man; scaffolds over 10 ft not self-supported from ground up; skipman on concrete paving; wire mech setters on concrete paving; all work in connection with sewer, water, gas, gasoline, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator; all work in connection with hydraulic or general dredging operations; form setters; puddlers (paving only); straw blower nozzleman; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material; toppler of standing trees; feeder man on wood pulverizer; board and w llow mat weavers and cable tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 ft where compressed air is not used; abutment and pier hole men working 6 ft or more below ground; men working in coffer dams for bridge piers and footings in the river; Barco tamper, Jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditchliners; hot mastic kettleman; hot tar applicator; hand blade operators; mortar men on brick or block manholes; rubbing concrete; air tool operator under 65 pounds; caulker and lead man; chain saw under 15 hp; guard rail and sign erectors

GROUP 2: Vibrator man; asphalt raker; hand pipe layer on sewer work; batterboard man on pipe and ditch work; cliff scalers working from Bosun's chairs, scaffolds or platforms on dams or power plants over 10 ft high; air tool operator over 65 pounds; stringline man on concrete paving etc.; sand blast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills; gunnite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 hp and over; grade checker; stringline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man; waterblaster - 1000 psi and over; asbestos and/or hazardous waste removal and or disposal;

LABO0663D 04/01/2002

Rates

Fringes

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

LABORERS:

GROUP 1	21.05	7.24
GROUP 2	22.14	7.24

LABORERS CLASSIFICATIONS

GROUP 1: General laborers, Carpenter tenders, salamander tenders, loading trucks under bins, hoppers and conveyors, track men and all other general laborers, air tool operator, cement handler (bulk or sack), chain or concrete saw, deck hands, dump man on earth fill, Georgie Buggies man, material batch hopper man, scale man, material mixer man (except on manholes), coffer dams, abutments and pier hole men working below ground, riprap pavers rock, black or brick, signal man, scaffolds over ten feet not self-supported from ground up, skipman on concrete paving, wire mesh setters on concrete paving, all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipelines, power tool operator, all work in connection with hydraulic or general dredging operations, straw blower nozzleman, asphalt plant platform man, chuck tender, crusher feeder, men handling creosote ties on creosote materials, men working with and handling epoxy material or materials (where special protection is required), topper of standing trees, batter board man on pipe and ditch work, feeder man on wood pulverizers, board and willow mat weavers and cable tiers on river work, deck hands, pile dike and revetment work, all laborers working on underground tunnels less than 25 feet where compressed air is not used, abutment and pier hole men working six (6) feet or more below ground, men working in coffer dams for bridge piers and footings in the river, ditchliners, pressure groutmen, caulker and chain or concrete saw, cliffscalers working from scaffolds, bosuns' chairs or platforms on dams or power plants over (10) feet above ground, mortarmen on brick or block manholes, signal man.

GROUP 2: Skilled Laborer - spreader or screed man on asphalt machine, asphalt raker, grade checker, vibrator man, concrete saw over 5 hp., laser beam man, barco tamper, jackson or any other similar tamp, wagon driller, churn drills, air track drills and other similar drills, cutting torch man, form setters, liners and stringline men on concrete paving, curb, gutters and etc., hot mastic kettleman, hot tar applicator, hand blade operators, mortar men on brick or block manholes, sand blasting and gunnite nozzle men, rubbing concrete, air tool operator in tunnels, head pipe layer on sewer work, manhole builder (brick or block), dynamite and powder men.

PAIN0002B 09/01/2001

	Rates	Fringes
CLARK, FRANKLIN, JEFFERSON, LEWIS, LINCOLN, MARION, PIKE, RALLS, ST. CHARLES, ST. LOUIS (CITY & COUNTY), AND WARREN COUNTIES		
PAINTERS:		
Brush	23.93	7.35
Spray	25.93	7.35

PAIN0002G 04/17/2001

	Rates	Fringes
ADAIR, AUDRAIN, BOONE, CALLAWAY, CHARITON, COLE, GASCONADE, HOWARD, KNOX, LINN, MACON, MONROE, MONTGOMERY, OSAGE, PUTNAM, RANDOLPH, SCHUYLER, SCOTLAND, SHELBY AND SULLIVAN COUNTIES and		

Steeple Jack 23.50 4.40

PAIN0203B 04/01/1999

	Rates	Fringes
BARRY, BARTON, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY, HOWELL, JASPER, LAWRENCE, MCDONALD, NEWTON, OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER and WRIGHT COUNTIES		

PAINTERS:

Sandblasters & Highman (over 40')	17.68	3.23
Painters	17.38	3.23
Tapers	16.47	3.21

PAIN1265C 07/01/2001

	Rates	Fringes
CAMDEN, CRAWFORD, DENT, LACLEDE, MARIES, MILLER, PHELPS, PULASKI AND TEXAS COUNTIES		

PAINTERS:

Brush and Roller, Spray Structural Steel, Sandblasting and all Tank Work	17.54	7.37
Lead Abatement	18.79	7.37
	19.79	7.37

PAIN1292B 07/01/2001

	Rates	Fringes
BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN, MISSISSIPPI, NEW MADRID, OREGON, PEMISCOT, PERRY, REYNOLDS, RIPLEY, SCOTT, SHANNON, STODDARD and WAYNE COUNTIES		

PAINTERS:

Commercial	15.44	5.97
Industrial	17.94	5.97
Bridges, Stacks & Tanks	22.89	5.97
Taper (Tools)	15.69	5.97
Spray & Abrasive Blasting	17.44	5.97
Waterblasting	17.44	5.97

Height Rates (All Areas): Over 60 ft. \$0.50 per hour.
Under 60 ft. \$0.25 per hour.

PAIN1292F 07/01/2001

	Rates	Fringes
IRON, MADISON, ST. FRANCOIS, STE. GENEVIEVE and WASHINGTON COUNTIES		

PAINTERS:

Commercial	17.54	5.97
Industrial	18.54	5.97

Tapers (Tools)	17.79	5.97
Bridges, Stacks & Tanks	22.89	5.97
Spray & Abrasive Blasting	19.54	5.97
Waterblasting	19.54	5.97
Lead Abatement	18.29	5.97

Height Rates (All Areas): Over 60 ft. \$0.50 per hour
 Under 60 ft. \$0.25 per hour.

 PLAS0518F 04/01/2002

	Rates	Fringes
BARRY, BARTON, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HOWELL, JASPER, LACLEDE, LAWRENCE, MCDONALD, NEWTON, OZARK, POLK, STONE, TANEY, VERNON, WEBSTER, AND WRIGHT COUNTIES		

CEMENT MASONS	17.31	3.84
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 PLAS0518G 04/01/2001

	Rates	Fringes
CASS (Richards-Gebaur AFB only), CLAY, JACKSON, PLATTE AND RAY COUNTIES		

CEMENT MASONS	21.25	8.15
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 PLAS0518K 05/01/2001

	Rates	Fringes
ANDREW, ATCHISON, BUCHANAN, BATES, CALDWELL, CARROLL, CASS (Except Richards-Gebaur AFB) CLINTON, DAVIESS, DEKALB, GENTRY, GRUNDY, HARRISON, HOLT, JACKSON, LAFAYETTE, LIVINGSTON, MACON, MERCER, NODAWAY AND WORTH COUNTIES		

CEMENT MASONS	23.13	7.15
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 PLAS0527A 05/01/2001

	Rates	Fringes
JEFFERSON, ST. CHARLES COUNTIES AND ST. LOUIS (City and County)		

CEMENT MASONS	24.48	8.85
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FRANKLIN, LINCOLN, AND WARREN COUNTIES

CEMENT MASONS	23.31	8.85
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 PLAS0527D 06/01/2001

	Rates	Fringes
CRAWFORD, DENT, IRON, MADISON, MARION, PHELPS, PIKE, PULASKI, RALLS, REYNOLDS, ST. FRANCOIS, STE. GENEVIEVE, SHANNON, TEXAS, WASHINGTON COUNTIES		

CEMENT MASONS	22.00	8.76
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PLAS0908A 05/01/2002

	Rates	Fringes
BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN, MISSISSIPPI, NEW MADRID, OREGON, PEMISCOT, PERRY, RIPLEY, SCOTT, STODDARD, AND WAYNE COUNTIES		
CEMENT MASONS	17.40	8.95

PLAS0908G 03/01/2001

	Rates	Fringes
BENTON, CALLAWAY, CAMDEN, COLE, GASCONADE, HENRY, HICKORY, JOHNSON, MARIES, MILLER, MONTGOMERY, MORGAN, OSAGE, PETTIS, SALINE & ST. CLAIR COUNTIES		
CEMENT MASONS	18.61	5.65

PLUM0008C 06/01/2000

	Rates	Fringes
CASS, CLAY, JACKSON, JOHNSON, PLATTE COUNTIES		
PLUMBERS	26.44	9.87
BATES, BENTON, CARROLL, HENRY, LAFAYETTE, MORGAN, PETTIS, RAY, ST. CLAIR, SALINE, AND VERNON COUNTIES		
PLUMBERS	24.00	9.87

PLUM0035C 01/01/2000

	Rates	Fringes
CAMDEN, COLE, CRAWFORD, FRANKLIN, JEFFERSON, MARIES, MILLER, MONITEAU, OSAGE, PHELPS, PULASKI, ST. CHARLES, ST. LOUIS (City and County), WARREN and WASHINGTON COUNTIES		
PLUMBERS	26.105	9.74

PLUM0045D 12/15/2001

	Rates	Fringes
ANDREW, ATCHISON, BUCHANAN, CALDWELL, CLINTON, DAVIESS, DEKALB, GENTRY, HARRISON, HOLT, NODAWAY AND WORTH COUNTIES		
PLUMBERS & PIPEFITTERS	26.85	9.80

PLUM0178D 11/01/2001

	Rates	Fringes
BARRY, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY, LACLEDE, LAWRENCE, POLK, STONE, TANEY, WEBSTER, AND WRIGHT COUNTIES		
PLUMBERS & PIPEFITTERS	22.10	7.37

PLUM0317B 07/01/1995

	Rates	Fringes
BOONE, CALLAWAY, COOPER, HOWARD, AND RANDOLPH COUNTY (Southern half)		
PLUMBERS & PIPEFITTERS	19.18	3.17

PLUM0533E 06/01/2001

	Rates	Fringes
BATES, BENTON, CARROLL, CASS, CLAY, HENRY, HICKORY, JACKSON, JOHNSON, LAFAYETTE, MORGAN, PETTIS, PLATTE, RAY, SALINE, ST. CLAIR AND VERNON COUNTIES		
PIPEFITTERS	28.38	11.08

PLUM0562D 07/01/2001

	Rates	Fringes
ADAIR, AUDRAIN, BOLLINGER, BUTLER, CAMDEN, CAPE GIRARDEAU, CARTER, CHARITON, CLARK, COLE, CRAWFORD, DENT, DUNKLIN, FRANKLIN, GASCONADE, GRUNDY, HOWELL, IRON, JEFFERSON, KNOX, LEWIS, LINCOLN, LINN, LIVINGSTON, MACON, MADISON, MARIES, MARION, MERCER, MILLER, MISSISSIPPI, MONITEAU, MONROE, MONTGOMERY, NEW MADRID, NORTHERN HALF OF RANDOLPH, OREGON, OSAGE, PEMISCOTT, PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, REYNOLDS, RIPLEY, ST. CHARLES, ST. FRANCOIS, STE. GENEVIEVE, ST. LOUIS, SCHUYLER, SCOTLAND, SCOTT, SHANNON, SHELBY, STODDARD, SULLIVAN, TEXAS, WARREN, WASHINGTON, AND WAYNE COUNTIES.		
PIPEFITTERS	27.75	11.83

PLUM0658B 07/01/1998

	Rates	Fringes
BARTON, JASPER, MCDONALD, AND NEWTON COUNTIES		
PLUMBERS & PIPEFITTERS	16.73	5.33

TEAM0013H 05/01/2001

	Rates	Fringes
AUDRAIN, BOLLINGER, BOONE, CALLAWAY, CAPE GIRARDEAU, CARTER, COLE, CRAWFORD, DENT, GASCONADE, IRON, MACON, MADISON, MARIES, MARION, MILLER, MISSISSIPPI, MONROE, MONTGOMERY, NEW MADRID, OSAGE, PEMISCOT, PERRY, PHELPS, PIKE, PULASKI, RALLS, REYNOLDS, ST. FRANCOIS, STE. GENEVIEVE, SCOTT, SHANNON, SHELBY, STODDARD, TEXAS, WASHINGTON, AND WAYNE COUNTIES		
TRUCK DRIVERS:		
GROUP 1	21.72	5.25
GROUP 2	21.87	5.25
GROUP 3	21.88	5.25
GROUP 4	21.99	5.25

ADAIR, BUTLER, CLARK, DUNKIN, HOWELL, KNOX, LEWIS, OREGON,
 PUTNAM, RIPLEY, SCHUYLER, AND SCOTLAND COUNTIES

TRUCK DRIVERS:

GROUP 1	20.99	5.25
GROUP 2	21.14	5.25
GROUP 3	21.15	5.25
GROUP 4	21.26	5.25

TRUCK DRIVERS CLASSIFICATIONS:

GROUP 1: Flat Bed Trucks, Single Axle; Station Wagons; Pickup Trucks; Material Trucks, Single Axle; Tank Wagon, Single Axle

GROUP 2: Agitator and Transit Mix Trucks

GROUP 3: Flat Bed Trucks, Tandem Axle; Articulated Dump Trucks; Material Trucks, Tandem Axle; Tank Wagon, Tandem Axle

GROUP 4: Semi and/or Pole Trailers; Winch, Fork & Steel Trucks; Distributor Drivers and Operators; Tank Wagon, Semi-Trailer; Insley Wagons, Dumpsters, Half-Tracks, Speedace, Euclids and other similar equipment; A-Frame and Derrick Trucks; Float or Low Boy

TEAM0056A 05/01/1998

BUCHANAN, CASS (Except Richards-Gebaur AFB), JOHNSON, AND LAFAYETTE COUNTIES

TRUCK DRIVERS:

	Rates	Fringes
GROUP 1	20.13	4.75
GROUP 2	20.24	4.75
GROUP 3	20.28	4.75
GROUP 4	20.35	4.75

ANDREW, BARTON, BATES, BENTON, CALDWELL, CAMDEN, CARROLL, CEDAR,

CHARITON, CHRISTIAN, CLINTON, COOPER, DADE, DALLAS, DAVIESS, DEKALB, DOUGLAS, GREENE, HENRY, HICKORY, HOWARD, JASPER, LACLEDE, LAWRENCE, LINN, LIVINGSTON, MONITEAU, MORGAN, NEWTON, PETTIS, POLK, RANDOLPH, ST CLAIR, SALINE, VERNON, WEBSTER, AND WRIGHT COUNTIES

TRUCK DRIVERS:

GROUP 1	18.92	4.75
GROUP 2	19.07	4.75
GROUP 3	19.08	4.75
GROUP 4	19.19	4.75

ATCHISON, BARRY, GENTRY, GRUNDY, HARRISON, HOLT, MCDONALD, MERCER, NODADWAY, OZARK, STONE, SULLIVAN, TANEY AND WORTH COUNTIES

TRUCK DRIVERS:

GROUP 1	18.19	4.75
GROUP 2	18.34	4.75

GROUP 3	18.35	4.75
GROUP 4	18.46	4.75

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Flat bed trucks single axle; station wagons; pickup trucks; material trucks single axle; tank wagons single axle.

GROUP 2: Agitator and transit mix-trucks.

GROUP 3: Flat bed trucks tandem axle; articulated dump trucks; material trucks tandem axle; tank wagons tandem axle.

GROUP 4: Semi and/or pole trailers; winch, fork & steel trucks; distributor drivers & operators; tank wagons semi-trailer; insley wagons, dumpsters, half-tracks, speedace, euclids & other similar equipment; A-frames and derrick trucks; float or low boy.

TEAM0245C 03/25/1998

	Rates	Fringes
BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DALLAS, DENT, DOUGLAS, GREENE, HICKORY, HOWELL, JASPER, LACLEDE, LAWRENCE, MCDONALD, MILLER, NEWTON, OZARK, PHELPS, POLK, PULASKI, SHANNON, STONE, TANEY, TEXAS, VERNON, WEBSTER AND WRIGHT COUNTIES		

TRUCK DRIVERS:

Traffic Control Service Driver	12.90	3.56+a
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PAID HOLIDAYS: New Year's Day, Decoration Day, July 4th,

Labor Day, Thanksgiving Day, Christmas Day,
Employee's birthday and 2 personal days.

TEAM0541A 04/01/2001

	Rates	Fringes
CASS (Richards-Gebaur AFB), CLAY, JACKSON, PLATTE, AND RAY COUNTIES		

TRUCK DRIVERS:

GROUP 1	22.81	6.50
GROUP 2	22.32	6.50
GROUP 3	21.84	6.50

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Mechanics and Welders, Field; A-Frame Low Boy-Boom Truck Driver.

GROUP 2: Articulated Dump Truck; Insley Wagons: Dump Trucks, Excavating, 5 cu yds and over; Dumpsters; Half-Tracks: Speedace: Euclids & similar excavating equipment. Material trucks, Tandem Two teams; Semi-Trailers; Winch trucks-Fork trucks; Distributor Drivers

and Operators; Agitator and Transit Mix; Tank Wagon Drivers, Tandem or Semi; One Team; Station Wagons; Pickup Trucks; Material Trucks, Single Axle; Tank Wagon Drivers, Single Axle
GROUP 3: Oilers and Greasers - Field

TEAM0541C 03/25/2000

Rates Fringes
BATES, CASS, CLAY, HENRY, JACKSON, JOHNSON, LAFAYETTE, PLATTE,
AND RAY COUNTIES

TRUCK DRIVERS:

Traffic Control Service Driver 14.15 2.44+a

a. PAID HOLIDAYS: New Year's Day, Decoration Day, July 4th,
Labor Day, Thanksgiving Day, Christmas Day,
Employee's birthday and 2 personal days.

TEAM0682D 05/01/2000

Rates Fringes
ST LOUIS CITY AND COUNTY

TRUCK DRIVERS:

GROUP 1 21.105 4.76+a+b
GROUP 2 21.305 4.78+a+b
GROUP 3 21.405 4.79+a+b

a. PENSION: \$18.80 per day, \$94.00 maximum per week.

b. HAZMAT PREMIUM: If Hazmat certification on a job site is required by a state or federal agency or requested by project owner or by the employer, employees on that job site shall receive \$1.50 premium pay.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - Pick-up trucks; forklift, single axle; flatbed trucks; job site ambulance, and trucks or trailers of a water level capacity of 11.99 cu. yds. or less

GROUP 2 - Trucks or trailers of a water level capacity of 12.0 cu yds. up to 22.0 cu yds. including euclids, speedace and similar equipment of same capacity and compressors

GROUP 3 - Trucks or trailers of a water level capacity of 22.0 cu. yds & over including euclids, speedace & all floats, flatbed trailers, boom trucks, winch trucks, including small trailers, farm wagons tilt-top trailers, field offices, tool trailers, concrete pumps, concrete conveyors & gasoline tank trailers and truck mounted mobile concrete mixers

FOOTNOTE FOR TRUCK DRIVERS:

a. PAID HOLIDAYS: Christmas Day, Independence Day, Labor Day, Memorial Day, Veterans Day, New Years Day, Thanksgiving

Day

PAID VACATION: 3 days paid vacation for 600 hours of service in any one contract year; 4 days paid vacation for 800 hours of service in any one contract year; 5 days paid vacation for 1,000 hours of services in any one contract years.

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Rates Fringes
ST.CHARLES, FRANKLIN, JEFFERSON, LINCOLN AND WARREN COUNTIES:

TRUCK DRIVERS:

GROUP 1	21.105	3.29+a+b+c
GROUP 2	21.305	3.29+a+b+c
GROUP 3	21.405	3.29+a+b+c

a.PAID HOLIDAYS: Christmas, Fourth of July, Labor Day, Memorial Day, Veterans Day, to be celebrated on either its National Holiday or on the day after Thanksgiving, whichever is agreed upon by the Association and the Union, New Year's Day and Thanksgiving Day.

b.Pension: \$18.80 per day either worked or compensated to a maximum of \$94.00 per week.

c.Hazmat Pay: If Hazmat Certification on a job site is required by a state or federal agency or requested by

project owner or by the employer, employees on that job site shall receive \$1.50 per hour premium pay.

TRUCK DRIVER CLASSIFICATIONS:

GROUP 1: Trucks or Trailers of a Water Level Capacity of 11.99 cu. yds. or less, Forklift Trucks, Job Site Ambulances, Pickup Trucks, Flatbed Trucks.

GROUP 2: Trucks or Trailers of a Water Level Capacity of 12.0 cu. yds. up to 22 cu. yds., Euclids, Speedace and Similar Equipment of Same Capacity and Compressors.

GROUP 3: Trucks or Trailers of a Water Level Capacity of 22.0 cu. yds. and over, Euclids and all Floats, Flatbed Trailers, Boom Trucks, Winch Trucks, Including Small Trailers, Farm Wagons, Tilt Top Trailers, Tool Trailers, Concrete Pumps, Concrete Conveyors, Gasoline Tank Trailers, Truck Mounted Mobile Concrete Mixers, End Dump, Side Dump and Articulated Dump Trucks.

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)).

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

Section No. Title

DIVISION 1 - GENERAL REQUIREMENTS

<u>Section No.</u>	<u>Title</u>
01100	General
01130	Deliveries or Performance For Design-Build Contract Procedures
01320	Project Schedule, Contractor Prepared Network Analysis System (NAS)
01330	Submittal Procedures / Design-Build
01356A	Storm Water Pollution Prevention Measures
01410	Environmental Protection
01415	Metric Measurements
01420	Sources for Reference Publications
01451	Contractor Quality Control
01500A	Temporary Construction Facilities
01780A	Closeout Submittals

SECTION 01100

GENERAL

PART 1 GENERAL

1.1 INQUIRIES

Pursuant to SECTION 00100 paragraph title **"Instructions to Offerors--Competitive Acquisition** , any inquiries regarding this Invitation, before bids are opened, should be addressed to the District Engineer, Kansas City District, Corps of Engineers, 700 Federal Building, Kansas City, Missouri 64106, ATTN: **Ms. Michelle Riley** . Inquiries for which oral explanation or advice on the plans and specifications will suffice may be referred to **Ms. Riley** by calling Area Code 816-983 3275 . Telephone calls concerning the mailing of plans and specifications should be made to Contracting Division at Area Code 816-983-3975. Collect telephone calls will not be accepted. (KCDO APR 84)

1.2 INFORMATION REGARDING PROPOSAL MATERIAL

Proposals must be submitted upon Government standard bid form (STANDARD FORM 1442 (Rev. 4-85)). Wherever in the proposal the words "invitation" and "bid" occur, they shall be deemed to refer to "solicitation" and "offer," respectively.

1.3 TIME FOR ACCEPTANCE BY THE GOVERNMENT OF PROPOSALS

All offerors submitting proposals in response to this request agree that the Government shall have not less than 90 days to accept any proposal, after the date indicated for receipt of proposals. In the event the Government cannot award a contract within this 90 day period, any or all proposers may, at their option, extend the date for acceptance of their proposal or may resubmit their price proposals.

1.4 DISPOSAL OF PROPOSALS

After award of the construction contract, proposal sets may be destroyed or may be kept for record. Proposal sets that are kept for records will be for Government use. Disclosure of proposal material, in whole or in part, outside the Government will be restricted only if the provisions of paragraph "Restriction on Disclosure and Use of Data" are in effect.

1.5 SUPERINTENDENCE OF SUBCONTRACTORS

(a) The Contractor shall be required to furnish the following:

(1) If more than 50% and less than 70% of the value of the contract work is subcontracted, one superintendent shall be provided at the site and on the Contractor's payroll to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

(2) If 70% or more of the value of the work is subcontracted, the Contractor shall be required to furnish two such superintendents to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

(b) If the Contracting Officer, at any time after 50% of the subcontracted

work has been completed, finds that satisfactory progress is being made, he may waive all or part of the above requirement for additional superintendence subject to the right of the Contracting Officer to reinstate such requirement if at any time during the progress of the remaining work he finds that satisfactory progress is not being made.

1.6 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 may be approved and directed by the Contracting Office. All prescribed identification shall immediately be delivered to the Contracting Officer, for cancellation upon the release of any employee. When required by the Contracting Officer the Contractor shall obtain and submit fingerprints of all persons employed or to be employed on the project.

1.7 MANDATORY VEHICLE REGISTRATION

a. Effective 1 September 2001, all motor vehicles within the boundaries of Fort Leonard Wood, Missouri, utilized by the Contractor and/or his employees (POVs included) must be registered with the Law Enforcement Command (LEC). Vehicle registration is a Department of the Army requirement.

b. All motor vehicles will be registered utilizing Department of Defense temporary vehicle passes or decals with expiration dates and installation identification. Registration will be coordinated through the Ft. Leonard Wood Area Office.

c. A Department of Defense temporary pass or decal will be issued for each registered vehicle. Contractors and Contractor employees will be issued a pass or decal depending upon the length of time of the contract. For contractors of a year or more in duration, an annually renewable decal will be issued. For those contracts of less than one year, a temporary pass will be issued. Contractor personnel who are eligible to register as retired military or dependent of military must register in such a manner.

d. Required documentation for registration consists of the following:

- Current valid drivers license
- State vehicle registration
- State safety inspection (if required by state of registration)
- Proof of insurance
- Motorcycle safety course (applicable to motorcycle registration only)
- Military, civilian or contractor identification
- Letter of employment verification (submitted on Company letterhead)

e. Decals must be permanently affixed to the vehicle. Authorized location is the upper center of the windshield, under the rear view mirror (right front post for motorcycles). All individuals are responsible for their decals. If the vehicle is sold, traded, incapacitated in any way, or employment is terminated, the individual must remove (scrape decal off window) the decal and return it to LEC and they will destroy the sticker. All temporary passes and decals must be returned before final pay will be processed.

f. Vehicles without authorized passes or decals are subject to be stopped

for purposes of identification and/or issuance of a daily or visitor pass.

1.8 APPLICATION OF WAGE RATES

The inclusion of the Davis-Bacon Act General Wage Decision or the Service Contract Act Wage Determination in the solicitation is a statutory requirement. It is not a representation by the U.S. Army Corps of Engineers that any specific work task can be performed by any specific trade. Which work tasks can be performed by what trades depends on and is determined by the prevailing area practice for the local area where the contract is being performed. It is the sole responsibility of the **offeror** to determine and comply with the prevailing area practice. Inquiries regarding a prevailing area practice should be directed to the Corps of Engineers, Contractor Industrial Relations Specialist (telephone number 816-983-3723) or to the Department of Labor Regional Wage and Hour Division.

Application of wage rates and fringe benefits: For the application of the wage rates and fringe benefits contained in the Decisions of the Secretary of Labor, attached to and a part of this contract, all work required within 5 feet outside building lines shall be considered Building Construction. All other construction not defined herein as Building Construction shall be considered Heavy Construction.

1.9 PAYMENTS TO SUBCONTRACTORS

The Contractor's attention is directed to CONTRACT CLAUSE titled "Payment Under Fixed-Price Construction Contracts." In addition to the requirements set forth in the referenced paragraph, the Government will reimburse the Contractor, upon request, for amount of premiums paid by the subcontractors for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor furnishes evidence of full payment to the surety.

1.10 PAYMENTS TO CONTRACTOR (KCD MAY 90 - FORMERLY FAR 52.2/9101(a))

The following is an example of a Contractor's release of claims clauses required to comply with the provisions of paragraph (h) of the CONTRACT CLAUSE titled "Payments Under Fixed-Price Construction Contracts":

RELEASE OF CLAIMS

The undersigned Contractor under contract dated _____, 2000, between the United States of America and said Contractor for the _____ located at _____, in accordance with paragraph (h) of the CONTRACT CLAUSE titled "Payments Under Fixed-Price Construction Contracts" of said contract, hereby releases the United States, its officers, agents, and employees from any and all claims arising under or by virtue of said contract or any modification or change thereof except with respect to those claims, if any, listed below:

(Here itemize claims and amounts due.)

1.11 PROSPECTIVE CONTRACTOR RESPONSIBILITY

Each bidder shall furnish, within 3 calendar days after receipt of request therefor, data which will show the bidder's ability to perform the work or services required by this Invitation for Bids. Such data shall include as

a minimum: Bank certification of financial capability, or a financial statement not over 60 days old, which will be treated as confidential (if over 60 days old, a certificate shall be attached thereto stating that the financial condition is substantially the same or, if not the same, the changes that have taken place); names of commercial and financial reporting agencies from whom credit reports may be obtained; trade creditors; name and address of bonding company; business and construction experience; past record of performance of Government contracts; and construction plant and equipment available for this job, with resume of work in progress or other data that will assure that the bidder is in a position to perform the work within the time specified.

In addition, if the bid exceeds \$1,000,000, the bidder shall furnish upon request, a certified statement listing:

(a) Each contract awarded to him within the preceding three-month period exceeding \$1,000,000 in value with brief description of the contract.

(b) Each contract awarded to him within the preceding three-year period not already physically completed and exceeding \$5,000,000 in value with brief description of the contract.

(c) If the prospective Contractor is a joint venture, each joint venture member will be required to submit the above defined certification. There shall also be furnished any other available information which will serve to substantiate the bidder's qualifications as a responsible prospective Contractor. (KCD APR 84)

1.12 PERFORMANCE OF WORK BY CONTRACTOR

Bidder's attention is directed to SPECIAL CLAUSE titled "Performance of Work by Contractor." The successful bidder will be required to furnish the Contracting Officer, a description of the work which he will perform with 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 furnished to the Contracting Officer within 10 days after award of the contract.

1.13 LABORATORY AND TESTING FACILITIES

The Contractor shall provide and maintain all measuring and testing devices, laboratory equipment, instruments, transportation, and supplies necessary to accomplish the required testing. All measuring and testing devices shall be calibrated at established intervals against certified standards. The Contractor's measuring and testing equipment shall be made available for use by the Government for verification of their accuracy and condition as well as for any inspection or test desired pursuant to the CONTRACT CLAUSE titled "Inspection of Construction." The location of the laboratory shall be convenient to the site such that test results are available prior to proceeding with the next sequential phase of the work. (KCD)

1.14 LIMITS OF RIGHT-OF-WAY

Limits of right-of-way within private property shall be established as soon as practicable and at least 30 days prior to commencing work in the immediate vicinity, to allow time for relocation of fences by owners of property adjacent to the location of the work.

1.15 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

(a) This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the CONTRACT CLAUSE titled "Default: (Fixed Price Construction)." In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

(b) The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY

WORK DAYS BASED ON (5) DAY WORK WEEK

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
(8)	(5)	(5)	(5)	(6)	(5)	(4)	(4)	(4)	(4)	(5)	(6)

(c) Upon acknowledgment of the Notice to Proceed (NTP) 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 work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the CONTRACT CLAUSE titled "Default (Fixed Price Construction)." (ER 415-1-15)

1.16 WORKING HOURS

Working hours for this project will be limited to Monday through Friday, 7:30 a.m. to 4:30 p.m., except as follows: Work will not be permitted on weekends and Federal holidays. In unusual circumstances, such as when utility turn-off is required for an extended period of time, authorization for weekend or holiday work may be requested from the Contracting Officer; these instances must be coordinated well in advance, in writing. Likewise, utility turn-off of short duration or work which will disrupt normal operations or traffic flow must be scheduled at least 3 working days in advance and may require schedule changes to ensure that safety is

maintained.

1.17 REQUIRED INSURANCE SCHEDULE

In accordance with CONTRACT CLAUSE titled "Insurance - Work On A Government Installation," the Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance.

Type	Amount
Workmen's Compensation State Statute	coverage complying with applicable
Employers' Liability	minimum amount of \$100,000.00
General Liability on Comprehensive Form of Policy which includes, but is not limited to, insurance for all work required herein	minimum limits of \$500,000 per occurrence for bodily injury
Comprehensive Automobile Liability	minimum limits of \$200,000 per person and \$500,000 per occurrence for bodily injury, and \$20,000 per occurrence for property damage

(End of clause)

1.18 INTERRUPTIONS TO UTILITY SERVICES

A schedule showing the approximate times of interruptions of utility services and roads shall be submitted approximately 30 days in advance of interrupting services to make connections. Where it is necessary to interrupt services to make connections and the period of interruption will last more than 2 hours, the connections shall be performed on Saturday or Sunday, unless otherwise approved by the Contracting Officer. Final arrangements shall be made with the Contracting Officer at least 72 hours in advance of the scheduled times of interruptions.

1.19 COORDINATION BETWEEN CONTRACTORS

(See CONTRACT CLAUSE titled "Other Contracts.") Construction work on another contract is underway concurrently with this Contract. The obligations of the Contractor under this Contract will include jointly planning and scheduling the work, on a cooperative basis, with the other Contractor involved in order to minimize delays and interferences. Alterations to systems installed under the other contract, including connections to sewer, waterlines, and bituminous pavement shown as existing, may not be in place.

1.20 CONTRACTOR-FURNISHED EQUIPMENT DATA

At or before 30 days prior to final inspection and acceptance of the work, the Contractor shall submit the data mentioned in the following subclauses.

(1) Equipment List. An itemized equipment list showing unit retail value and nameplate data including serial number, model number, size,

manufacturer, etc., for all Contractor-furnished items of mechanical equipment, electrical equipment, and fire protection systems installed under this contract.

(2) Guarantees. A list of all equipment items which are specified to be guaranteed accompanied by a copy of each specific guarantee therefor. For each specific guaranteed item, a name, address, and telephone number shall be shown on the list for subcontractor who installed equipment, equipment supplier or distributor and equipment manufacturer. The completion date of the guarantee period shall correspond to the applicable specification requirements for each guaranteed item.

(3) Warranty Service Calls. The Contractor shall furnish to the Contracting Officer the names of local service representatives and/or Contractors that are available for warranty service calls and who will respond to a call within the time periods as follows: 4 hours for heating, air-conditioning, refrigeration, air supply and distribution, and critical electrical service systems and food service equipment, and 24 hours for all other systems. The names, addresses, and telephone numbers for day, night, weekend, and holiday service responses shall be furnished to the Contracting Officer and also posted at a conspicuous location in each mechanical and electrical room or close to the unit.

1.21 DATE OF SAFETY AND HEALTH REQUIREMENTS MANUAL (EM 385-1-1)

(a) The date of the U.S. Army Corps of Engineers Safety and Health Requirements Manual in effect on the date of this solicitation is 3 September 1996. See Section 00700, Contract Clause titled "Accident Prevention."

(b) Section 06.I of EM 385-1-1 is deleted. Job hazard analysis for confined space entry procedures is still required, as per 01.A.09 of EM 385-1-1. OSHA Standards 29 CFR 1910.146 or 29 CFR 1926 shall apply.

(c) Before initiation of work at the job site, an accident prevention plan, written by the prime contractor for the specific work and hazards of the contract and implementing in detail the pertinent requirements of EM 385-1-1, will be reviewed and found acceptable by designated Government personnel.

1.22 COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)

The Contractor shall comply with OSHA standards as well as the most current edition of the Corps of Engineers General Safety Requirements Manual (EM 385-1-1). The OSHA standards are subject to change and such changes may affect the Contractor in his performance under the contract. It is the Contractor's responsibility to know such changes and effective dates of changes.

1.23 CONSTRUCTION EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE

Whenever a modification or equitable adjustment of contract price is required, the Contractor's cost proposal for equipment ownership and operating expenses shall be as set forth in SPECIAL CLAUSE titled "Equipment Ownership and Operating Expense Schedule." A copy of EP 1110-1-8 "Construction Equipment Ownership and Operating Expense Schedule" dated August 1995 can be ordered from the Government Printing Office (GPO) by calling Telephone No. 202-512-1800.

1.24 SHOP DRAWINGS

The Contractor's attention is directed to clause "Specifications and Drawings for Construction" of the Contract Clauses.

1.25 SUBMITTALS

(a) Submittal Procedures. See Division One SECTION: SUBMITTAL PROCEDURES.

(b) Shop Drawings shall be submitted in ample time to secure approval prior to the time the items covered thereby are to be delivered to the site. ENG Form 4025 and 4026 shall be used for the transmittal of shop drawings. Unless otherwise specified, shop drawings shall be submitted not less than 30 days before commencement of fabrication of fabricated items and not less than 15 days before delivery of standard stock manufactured items. Where materials are stock with the manufacturer, catalog data, including specifications and full descriptive matter, may be submitted as shop drawings. When catalog includes nonapplicable data, the applicable data shall be clearly designated and identified by item number, item name, and name of manufacturer. Shop drawings submitted (including initial and final submittals) shall be reproductions on high quality paper with clear and legible print. Drawings shall generally be bordered a minimum of one inch and trimmed to neat lines and unless otherwise specified, the minimum scale shall be 3/8-inch to the foot. Shop drawings quality will be subject to approval. Each shop drawing, including catalog data, shall be identified with a title block including the name of Contractor, contract number, name and location of project, and name of item of work or structure to which the shop drawing applies. Material fabricated or delivered to the site before approved shop drawings have been returned to the Contractor will be subject to rejection. NO CONSTRUCTION OR INSTALLATION SHALL BE DONE FOR ANY ITEM REQUIRING SHOP DRAWINGS, UNTIL ALL SHOP DRAWINGS FOR THAT ITEM HAVE BEEN APPROVED.

(c) As-Built Shop Drawings: Upon completion of the work under this contract, the Contractor shall furnish five complete sets of prints or one complete set of reproducibles 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. The quality of the reproducibles and prints is subject to approval.

(d) As-Built Drawings: The Contractor shall maintain three separate sets of red-lined, full scale, as-built construction drawings marked up to fully indicate as-built conditions. These drawings shall be maintained in a current condition at all times until completion of the work, and shall be available for review by Government personnel at all times. All variations from the contract drawings, for whatever reason, including those occasioned by modifications, optional materials, and the required coordination between trades, shall be indicated. These variations shall be shown in the same general detail utilized in the contract drawings. In addition, the Contractor shall indicate on the As-Built Drawings, the brand-name, description, location, and quantity of any and all materials used which contain asbestos. The Contractor shall also be responsible for updating the Government-furnished CADD files to reflect the current as-built conditions throughout the duration of the project. The updated CADD design files shall be maintained in the Intergraph Microstation format consistent with the graphic standards established in the CADD contract drawings provided by the Government. The Contractor will be provided a copy of the Tri-Service CADD standards to facilitate his efforts in the maintenance of

design files. The updated CADD files shall be reviewed by the Government on a monthly basis during the progress payment evaluation. The Contractor shall be prepared to demonstrate the status of the updated CADD files in his on-site office. The as-built utility drawings shall show locations and elevations of all underground new utilities and existing utilities encountered, including dimensions from permanent structures and/or survey locations. The submittal requirements for as-built utility drawings shall be shown as separate activities on the Contractor-prepared network analysis. Upon completion of the work, the marked-up drawings and the updated CADD files shall be furnished to the Contracting Officer on 8 mm tape or CD. In multiphased construction where portions of a system are to be turned over to the user prior to completion of the project, the marked-up drawings for that portion shall be furnished to the Contracting Officer at that time. (MRD ltr 30 Oct 70 and KCD 8 Apr 91)

(e) CADD Files: The Government will provide to the Contractor, within 60 calendar days after Notice of Award, copies of the CADD computer files of the contract drawings for the production of as-built drawings. These files will be in Intergraph Microstation format. The Government provides no warranty, expressed or implied, of the CADD computer files. The Contractor shall assume all responsibility to verify the CADD drawing files. The Contractor will not utilize the CADD drawing computer files to resolve dimensional or other discrepancies. The Government will not guarantee the measurable accuracy of the CADD drawing computer files.

(f) Purchase Orders: Each purchase order issued by the Contractor or his subcontractors for materials and equipment to be incorporated into the project, shall be maintained on file at the Contractor's field office for inspection and review by Government representatives. Each purchase order shall (1) be clearly identified with applicable DA contract number, (2) carry an identifying number, (3) be in sufficient detail to identify the material being purchased, (4) indicate a definite delivery date, and (5) display the DMS priority rating. At the option of the Contractor, the copies of the purchase orders may or may not indicate the price of the articles purchased. (MRD Ltr 22 Oct 74)

(g) Color Boards:

1. The Contractor shall submit a minimum of three (3) complete sets of color boards within 120 calendar days of receipt of Notice to Proceed. Construction color boards shall be submitted in a 3-ring notebook binder with all materials securely mounted on rigid 8-1/2 by 11-inch presentation (mat) board, with a maximum spread of 25-1/2 by 33 inches for foldouts, clearly coded regarding location of materials in the facility.

2. An index shall be provided listing pertinent contract specifications and drawings for each sample and any proposed substitutions or variances shall be so designated. The Contractor shall also certify, in writing, that all submittal items technically comply with the project specifications.

3. Color boards shall reflect all actual finish textures, patterns, and colors required for this contract as specified on the Interior Room Finish Schedule, the Exterior Finish Schedule and Interior Finish Materials Legend located in the Contract Drawings, and the sample requirements of the submittal registers. All materials must be labeled with the manufacturer's name, pattern and color reference. Patterned material samples (i.e., carpet) must be of sufficient size to enable evaluation of the pattern. Samples shall be keyed or coded to match any key or code system in the Contract Drawings.

4. The Contractor shall express mail a minimum of three (3) copies of the color boards to the Contracting Officer. The Contracting Officer will forward one copy of the colorboards to CENWK-EC-D for review and concurrence. Concurrence or comments will be provided not later than 45 calendar days after receipt of the submittal. This paragraph does not cover the quality of finishing materials. The quality, physical requirements, and method of installation shall be submitted with the appropriate shop drawings. The Contractor shall not submit any of the above requirements with the color boards. Specific locations where the various materials are required are shown on the drawings.

1.26 SPECIAL REFERENCES

(a) Shop Drawings. Bidder's attention is directed to SPECIAL CLAUSE titled "Shop Drawings." The basic requirements for Shop Drawings are set forth in the CONTRACT CLAUSES and SPECIAL CLAUSES.

(b) Approved Equal. Bidder's attention is directed to SPECIAL CLAUSE titled "Approved Equal."

(c) Payment to Subcontractors. Bidder's attention is directed to SPECIAL CLAUSE titled "Payments to Subcontractors."

1.27 DIFFERENCES IN DRAWINGS

In addition to the provisions of CONTRACT CLAUSE paragraph "Specifications and Drawings for Construction," the structural drawings shall govern in cases where they differ from the architectural drawings.

1.28 DAMAGE TO WORK (1966 MAR OCE)

The responsibility for damage to any part of the permanent work shall be as set forth in the CONTRACT CLAUSE titled "Permits and Responsibilities." However, if, in the judgment of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood or earthquake, which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor will make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such work an equitable adjustment pursuant to CONTRACT CLAUSE titled, "Changes," of the contract, will be made as full compensation for the repairs of that part of the permanent work for which there are no applicable contract unit or lump sum prices. Except as herein provided, damage to all work (including temporary construction), utilities, materials, equipment and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense, regardless of the cause of such damage.

1.29 EXISTING ROADS

Where roads under construction follow or tie into existing roads open to traffic, the roads constructed under such conditions shall be open and passable to traffic at all times during construction. Roadbeds shall be maintained to eliminate hazards to traffic, insure a reasonably smooth

riding surface, and to provide positive drainage by constant maintenance of sufficient crowns and ditches as construction progresses. During rainy or inclement periods, the roads shall be kept passable by applying adequate surfacing material to the roadbed or by providing a full time attendant to offer assistance to motorists. Upon failure to comply with foregoing requirements, the Contracting Officer reserves the right to direct non-Government sources to correct deficiencies with costs deducted from payment due to the Contractor.

1.30 APPROVED EQUAL

The drawings and the TECHNICAL PROVISIONS of these specifications may, in some instances, refer to certain items of equipment, material, or article by trade name. References of this type shall not be construed as limiting competition, but shall be regarded as establishing a standard of quality. In this respect, the Contractor's attention is directed to CONTRACT CLAUSE titled "Material and Workmanship."

1.31 SCHEDULE OF WORK

The Contractor's attention is directed to CONTRACT CLAUSE titled "Schedule for Construction Contracts," wherein 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.

1.32 UPKEEP OF ROADWAY AREAS WITHIN A MILITARY INSTALLATION WHICH THE CONTRACTOR USES

In addition to the requirements in CONTRACT CLAUSE titled "Operations and Storage Areas," the Contractor shall comply with the following requirements: Where the construction work is on or adjacent to, or involves hauling over public roads, streets, or highways located on a military installation, all herein referred to as "roads," the said roads shall except as otherwise specified or directed, be kept open for traffic at all times during the construction period. The Contractor shall keep the roads including adjacent construction site free of debris including litter, waste construction material, mud etc., that might be caused to accumulate thereon by his operations, and upon completion of the work, shall clean up the said roads and construction site and repair any damage occasioned with his operations under this contract to the satisfaction of the Contracting Officer. The drainage from the roads shall not be obstructed by the construction work.

1.33 PROTECTION OF UTILITY LINES

(a) It shall be the Contractor's responsibility to protect all existing utility lines from damage during excavation for utilities systems. Any damage resulting to existing utility systems shall be repaired by the Contractor, to the satisfaction of the contracting officer, at no additional cost to the Government.

(b) All requests for access and/or locations must be made through the Contracting Officer's Representative (COR) or Resident Engineer. The Director of Public Works will work directly with the Resident Engineer to provide timely information to the Contractor.

1.34 CLOSEOUT OF CONTRACTS (KCD JULY 1990)

The closing out of various features of the contract shall be done before or on the Government contract construction completion date. The Contractor's specific submittals and items required for closeout include, but are not limited to, Operation and Maintenance Manuals (O&M), training, spare parts, equipment list, guarantees, as-built shop drawings and contract drawings.

The Contractor shall review the contract documents and prepare a plan for closeout no later than 90 days after the notice to proceed date for approval by the Contracting Officer Representative (COR). The closeout plan shall also include the Specification Volume No., specification reference section and building name on each closeout item. A summary of the type of closeout information required for each of the items shall be prepared by the Contractor for the closeout plan. The closeout data base shall be updated as required by the Contracting Officer to ensure adequate tracking of the items noted.

The following is a general list of the various types of closeout materials and the data required for each. (* indicates data required on initial submittal)

(a) O&M Manuals:

Descriptions*, Specification Paragraph*, Date Due*, No. Copies Due*, Date Submit Action Code, Resubmit Date, Approved, Date to User

(b) Training Requirements:

Description*, Specification Paragraph*, Length Required*, Date Scheduled, Plan Submitted, Plan Approved, Date Training Held

(c) Spare Parts Required:

Description*, Specification Paragraph*, Quantity Required*, Date Turned Over to User

(d) Salvaged Material:

Description*, Specification-Plan Requirement*, Quantity*, Turn In Document Received

(e) Government-Furnished Equipment:

Description*, Specification-Plan Requirement*, GFCI-GFGI*, Number Required*, Date Equipment Data Required*, Date Equipment Required*, Turnover Document Provided

(f) Utilities Provided or Relocated by Others:

Description*, Relocate or Provide*, Specification-Plan Note*, Date Required*

1.35 MODIFICATIONS PRIOR TO DATE SET FOR OPENING BIDS

The right is reserved, as the interest of the Government may require, to revise or amend the specifications or drawings or both prior to the date set for opening bids. Such revisions and amendments, if any, will be announced by an amendment or amendments to this Invitation for Bids. If the revisions and amendments are of a nature which requires material changes in quantities or prices bid or both, the date set for opening bids may be postponed by such number of days as in the opinion of the issuing

officer will enable bidders to revise their bids. In such cases, the amendment will include an announcement of the new date for opening bids. (KCD APR 84)

1.36 EXPEDITING NOTICE TO PROCEED

Notwithstanding the requirements of Block 12 on page 00010-1 of SECTION 00010 and SECTION 00100 paragraph titled "Late Submissions, Modifications, and Withdrawals of Bids," in order to expedite award of contract and issuance of NOTICE TO PROCEED, it is requested that an officer of the company or corporation determined to be the successful bidder shall appear in the office of the Commander, Kansas City District, Corps of Engineers, 757 Federal Building, 601 East 12th Street, Kansas City, Missouri, for signing contract documents. Therefore, upon written acceptance of this bid, mailed or otherwise furnished within 60 calendar days after the date of opening of bids, it is requested that the successful bidder shall within 48 hours after receipt of notification appear in the office of the Commander and execute Notice to Proceed documents, and give performance and payment bonds on Government Standard forms 25 and 25A with good and sufficient surety. It is also requested that the successful bidder furnish insurance certificates required in SPECIAL CLAUSE titled "Required Insurance Schedule" at this time.

1.37 UNEXPECTED HAZARDOUS SUBSTANCES

In the event that suspected hazardous substances are revealed during construction activities, all such construction activities in the immediate area shall be immediately suspended. Hazardous substances for purposes of this specification only, shall be defined as CERCLA hazardous substances, infectious or radioactive wastes, asbestos or oil. The Contractor shall leave the materials undisturbed and shall immediately report the find to the Contracting Officer's Representative (COR) so that proper authorities can be notified. The Contractor shall not resume construction activities in the vicinity of the suspected hazardous substances until written clearance is received from the COR. Identification and removal of any such materials will be conducted in accordance with all Federal, state and local environmental laws and regulations according to the CONTRACT CLAUSE titled "Differing Site Conditions."

1.38 UNEXPECTED DISCOVERY OF ASBESTOS ON CONSTRUCTION (RENOVATION AND DEMOLITION)

The buildings and areas to be renovated or demolished have been surveyed for the presence of asbestos-containing materials. This survey is not a warranty that asbestos-containing materials are either not present or limited to the amounts found in the survey. Should suspected asbestos-containing material be encountered, the Contractor shall promptly, and before the conditions or the substance encountered is disturbed, give a written notice to the Contracting Officer of the suspected asbestos-containing material conditions encountered. As directed by the Contracting Officer, the Contractor shall remove and dispose of any and all asbestos-containing material as necessary to accomplish the required work which shall be performed in accordance with all pertinent local, state, and federal laws. An equitable adjustment will be made to the Contractor in accordance with the CONTRACT CLAUSE entitled "Changes", for the additional work directed by the Contracting Officer.

1.39 IONIZING RADIATION (Notification and Authorization)

a. When USACE controlled radioactive material is used or stored on an active Army or Air Force installation, the appropriate Department of the Army (DA) or Department of the Air Force (DAF) radioactive material authorization must be obtained.

b. Application for DA authorization is submitted through USACE channels to DASEN-SOI on DA Form 3337 (Application For Department Of The Army Radiation Authorization or Permit) executed in accordance with AR 385-11.

c. Application for DAF authorization is submitted to the installation Environmental Health Section (in accordance with AFR 161-16) with a copy furnished to DAEN-SOI.

d. Contractors contemplating the use of radioactive materials or radiation producing equipment on an active DA or DAF installation must obtain the appropriate permit or authorization. A 45 day lead time should be allowed for obtaining a permit (see EM 385-1-1, Sec 6).

(1) DA permit requests should be submitted to the installation commander as described in AR 385-11.

(2) DAF authorization requests should be submitted to the installation Environmental Health Section as described in AFR 161-16.

(3) The Department of the Navy does not have a formal permit or authorization requirement; however, the installation Safety Office should be informed of the intended use.

1.40 ASBESTOS-CONTAINING MATERIALS

Bidders are advised that friable and/or non-friable asbestos-containing materials have been identified in areas where contract work is to be performed. Bidder's attention is directed to DIVISION 2.

1.41 LARGE VOLUME OF FORT LEONARD WOOD CONSTRUCTION

Bidders are advised that a number of construction projects will be in progress at Fort Leonard Wood during the performance of this contract. Each individual Contractor shall be responsible for coordinating and scheduling the work such that the work shall be accomplished to minimize delays and interference.

1.42 SURVEY MARKERS

Reference is made to CONTRACT CLAUSE titled "Permits and Responsibilities", Chapter 60 of the Missouri Revised Statutes 1969, and rules titled "Maintenance of the Original US Public Land Survey Corners" adopted by the Division of Geology and Land Survey, Missouri Department of Natural Resources. The Contractor shall be responsible for removing and relocating survey markers. Relocation shall be performed by a professional registered Land Surveyor.

1.43 DISPOSAL OF WASTE

: All construction and/or demolition waste shall be disposed of off-base in accordance with all applicable Federal, State and local regulations,

including "Chapter 260, RSMO" of the "Missouri Department of Natural Resources."

1.44 EXCAVATION NOTIFICATION

Prior to any excavation on either public or private properties, Missouri law requires that you notify all owners and operators of underground facilities in your dig site. Missouri One Call System (MOCS) can help you comply with the law; "Chapter 319, RSMO" of the "Missouri Department of Natural Resources," by calling this one toll-free number 1-800-344-7483.

1.45 MISSOURI SALES AND USE TAX

In accordance with FAR Clause 52.229, notice is given that the contract price excludes the Missouri sales tax and compensating (use) tax on all sales of tangible personal property and materials purchased by the Contractor or subcontractors for the construction of projects, including repairing or remodeling facilities, for the United States. In accordance with Section 144.062, RSMo., the Contracting Officer will issue and furnish to the Contractor an exemption certificate (example copy appears at the end of this section) for this project with the Notice to Proceed. The Contractor and the subcontractors will use the exemption certificate for this project in the purchase of supplies, materials and furnishings for incorporation in the project. The Contractor and the subcontractors shall furnish a copy of such certificate to all suppliers/materialmen from whom such purchases are made, and the suppliers shall execute invoices covering the same bearing the number of such certificate. (KCD OC)

1.46 INSTALLATION ACCESS DURING LABOR DISPUTES

(a) Subject to the limitations outlined in paragraphs (b) and (c), the Contractor may generally seek access to the installation for the performance of the contract utilizing any entrance to the installation open to public transportation.

(b) In case of labor unrest, including but not limited to strikes and informational pickets, the installation Garrison or Installation Commander has the right to implement a "reserve gate" plan. Pursuant to such a plan (1) the picketed contractor may be limited to the use of only one gate for all access on and off the installation; and (2) other contractors may be restricted from the use of the gate utilized by the Contractor(s) involved in the labor dispute. For purposes of this clause the term "picketed contractor" shall include all employees, subcontractors, suppliers, materialmen and agents of the contractor involved in the labor dispute.

(c) The choice of gate or gates to be utilized by the picketed Contractor(s) shall rest solely with the Garrison or Installation Commander based on the needs of the Government. Any delay or costs associated with the inability to use a particular entrance to the installation shall not be grounds for an equitable adjustment. Any entitlement to an extension of the performance period shall be determined pursuant to the Default Clause of the Contract.

1.47 PARTNERING

The Government intends to encourage the foundation of a cohesive

partnership with the Contractor and its subcontractor. This partnership will be structured to draw on the strengths of each organization to identify and achieve mutual goals with the intent to complete the Contract within budget, on schedule and in accordance with plans and specifications. This partnership will be bilateral in makeup, and participation will be totally voluntary. Any cost associated with implementing this partnership will be agreed to by the Contractor and the Government, and will be shared equally with no change in Contract price. To implement this partnership initiative, it is anticipated that thirty (30) days after Notice to Proceed, a team building workshop will be conducted. Follow-up workshops will be held periodically throughout the duration of the Contract as agreed to by the Contractor and the Government.

1.48 INTERRUPTIONS TO UTILITY SERVICES

A schedule showing the approximate times of interruptions of utility services and roads shall be submitted approximately 30 days in advance of interrupting services to make connections. Where it is necessary to interrupt services to make connections, the period of outage shall not last more than 8 hours, shall be conducted on Saturday or Sunday, and must be coordinated with those people affected by the outage.

1.49 COOPERATION BETWEEN THE CONTRACTOR AND UTILITY COMPANIES

Relocation of utilities by the utility companies listed below will be necessary concurrently with the work under this contract. All coordinating shall be through, or with the knowledge of, the Contracting Officer. (KCD)

(a) The Contractor shall coordinate work with Omega Corporation (gas service, gas meter connection requirements, and/or building connection requirements), United Telephone (pay telephones), and Fort Leonard Wood for water sewer, telephone/data, and cable television.

(b) The cost of utilities will be borne by the Contractor.

1.50 HOT WORK PERMIT

(a) The current Post Fire Regulations, AR 420-90, "Fire Prevention and Protection" and FLW Supplements to AR 420-90 are by this reference made a part of this solicitation and resultant contract. The Contractor's operations shall conform to all applicable portions of those documents. All personnel entering on duty as Contractor's employees shall be instructed in the fire prevention program of the Post and shall be advised of the requirement of the Post fire Regulations as they pertain to this particular contract.

(b) The Contractor shall obtain a written "Hot Work Permit" (DA Form 5383-R) prior to commencing all hot work outside an approved shop area. Permits will be issued by the Fort Leonard Wood Fire Department, (314) 596-0883, after all necessary precautions have been taken, such as wetting down the area, protection of combustible material, and positioning of first aid fire extinguishers of proper type and class. Permits must be obtained in advance for use of open flame devices, such as blow torches, portable furnaces, tar kettles, or gas and electric welding and cutting equipment. Preparation and protection for such areas are the responsibility of the Contractor accomplishing the work. An inspection conducted by the Fire Department prior to commencing work may be required; however, the

Contractor shall conduct an inspection of the area at least 30 minutes after completion of all work. The Contractor shall be liable for any fire loss to Government property attributable to negligence on the part of the Contractor, including failure to comply with fire prevention measures prescribed by terms of this contract.

(c) The Fire Prevention-Protection Division is responsible for monitoring the Contractor in the area of fire prevention and advising the Contracting Officer of all deficiencies. The Contracting Officer will alert the Contractor if a violation is a fire hazard or fire protection deficiency.

(d) This provision in no way authorizes anyone other than the Contracting Officer to commit the Government to changes in the terms of the contract.

1.51 UTILITY/DIGGING PERMITS POLICY

(a) General. The Contractor must obtain an excavation permit from the Directorate of Public Works (DPW) prior to digging on Fort Leonard Wood. This allows for the proper marking of existing utilities, thereby preventing damages and outages to those utilities.

(b) Procedures. The Excavation Permit Request and the Utilities Flagging Request are one and the same. The contractor will use FLW Form 364 to initiate all flagging requests. A copy of FLW Form 364 is attached. The Contractor will be required to request flagging at least ten calendar days in advance of when he plans to dig in an area. He will indicate the area to be flagged, the resulting utility outage from this flagging effort, and the requirement date on the Excavation Permit which he submits to the Corps of Engineers Area Office (FM-WD). FM-WD turns the request over to the DPW on the same day as well. FM-WD and the DPW will both keep track of when the request was received and when the permit was issued. These dates will be reconciled at the weekly coordination meeting. It is the Contractor's responsibility to route the digging permit through the appropriate offices.

(1) The Contractor will be required to call 1-800-DIG-RITE to get the telephone company to mark its lines. This is in addition to the utilities to be marked by the DPW.

(2) The DPW, through its O&M contractor, will flag all other utilities and return the approved Excavation Permit to FM-WD. The Corps of Engineers QA representative and the Contractor will jointly mark up their individual contract drawings to document the flagging.

(3) Once the flagging is registered, the Contractor is responsible for replacing missing markings.

(4) If the utilities are not flagged within 10 calendar days of the submittal to the DOW, contract drawings will be used for showing utilities locations. Post utilities drawings will be used as backup.

(c) Accidental Cuts. If the utility is cut within a zone of 3 feet either side of the markings or, if there is no marking, the location shown on the drawings, the contractor will be required to repair the utility at his own expense. If the utility is cut outside of this 6-foot-wide zone, the DPW will be responsible for repairing the utility.

(d) Initial Flagging. **The Contractor will be required to include with his proposal a plan showing all areas to be excavated within the first fourteen calendar days of construction** This plan will be provided to the DPW and used to flag the required utilities to allow the Contractor to proceed with site work immediately upon contract award.

1.52 INSTALLATION ACCESS DURING LABOR DISPUTES

(a) Subject to the limitations outlined in paragraphs (b) and (c), the Contractor may generally seek access to the installation for the performance of the contract utilizing any entrance to the installation open to public transportation.

(b) In case of labor unrest, including but not limited to strikes and informational pickets, the installation Garrison or Installation Commander has the right to implement a "reserve gate" plan. Pursuant to such a plan (1) the picketed contractor may be limited to the use of only one gate for all access on and off the installation; and (2) other contractors may be restricted from the use of the gate utilized by the Contractor(s) involved in the labor dispute. For purposes of this clause the term "picketed contractor" shall include all employees, subcontractors, suppliers, materialmen and agents of the contractor involved in the labor dispute.

(c) The choice of gate or gates to be utilized by the picketed Contractor(s) shall rest solely with the Garrison or Installation Commander based on the needs of the Government. Any delay or costs associated with the inability to use a particular entrance to the installation shall not be grounds for an equitable adjustment. Any entitlement to an extension of the performance period shall be determined pursuant to the Default Clause of the Contract.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

* * * * *

EXCAVATION PERMIT
Fort Leonard Wood, Missouri
(FLW Suppl I to AR 420-17)

REQUESTED BY: (Unit/Activity doing Excavation)

POINT OF CONTACT NAME: _____ PHONE NUMBER: _____

DESCRIPTION AND LOCATION OF PROPOSED EXCAVATION: (Include a detailed map or drawing showing location.)

GAS (NATURAL)
Reviewer (Signature): _____ Date: _____

EXTERIOR ELECTRICAL CONTRACTOR (High Voltage)
Reviewer (Signature): _____ Date: _____

DPW MAINTENANCE CONTRACTOR
Heat/AG _____
Water/Sewer _____
Electrical (Secondary) _____
Fuel _____

DIRECTOR OF PUBLIC WORKS: _____ Date: _____

ARMY TELEPHONE (DOIM)
Reviewer (Signature): _____ Date: _____

SPRINT TELEPHONE COMPANY (Commercial)
FOR APPROVAL CALL 1-800-DIG-RITE **48 HOUR NOTICE**

RANGE _____ TOWNSHIP _____ SECTION _____
Reviewer (Signature): _____ Date: _____

SPRINT BARRACKS TELEPHONE COMPANY (Commercial)
FOR APPROVAL CALL 329-4603 OR 329-8200
Reviewer (Signature): _____ Date: _____

CABLE TV COMPANY
FOR APPROVAL CALL 336-5284 **48 HOUR NOTICE**
Reviewer (Signature): _____ Date: _____

DOL (J-SIDDS)
Reviewer (Signature): _____ Date: _____

FINAL REVIEWER
Final Reviewer (Signature): _____ Date: _____

FLW Form 364 (Rev 1 Jul 95) Previous Edition Obsolete

EXCAVATION PERMIT
Fort Leonard Wood, Missouri
(Supplement to FLW 364, Excavation Permit)

1. All personnel requesting a form FLW 364, Excavation Permit, must in addition to all other requirements, read and acknowledge by signature the following DPW requirements. Refusal to comply with these requirements will void future requests for an Excavation Permit. Deficiencies to these requirements will result in a request to correct the deficiencies within 30 days. If deficiencies are not corrected, DPW will correct them and a bill for those costs will be presented to the permit holder for payment.
2. All roads shall be bored under, unless prior approval has been granted by the Chief of the Operations Branch, DPW, Building 2222.
3. All disturbed turf areas shall be restored by placing 4 inches of topsoil, fertilizing with 13-13-13 fertilizer at a rate of 4 pounds per 1000 square feet, seeding with a mixture of 90% Turf Type Tall Fescue and 10% annual rye at a rate of 4 pounds per 1000 square feet, and mulching four ways, with clean, weed free, cereal straw. Turf areas are considered all areas that are unsurfaced grounds. Disturbed areas are not limited to areas of the excavation. They also include ruts, gouges, etc., caused by a Contractor's vehicles or equipment.
4. All buried utilities shall include a tracer wire with the utility and, in addition, magnetic tracer tape above the utility, but 12 inches below ground level. The tracer wire shall be terminated in a manner that makes it accessible at all manholes, handholes, pedestals, or other termination points.
5. Magnetic tracer tape shall be placed above any communication line buried 12 inches below ground level.
6. At the finish of work, as-built drawings shall be delivered to the Engineer Design Branch, DPW, Building 2200.
7. Use of Fire Hydrants-The temporary use of fire hydrants as sources of water is not authorized without prior approval by the Fire Department, 596-0886. Fire hydrant connections shall include an approved backflow preventer. Back flow preventers shall either be RPZ (reduced pressure zone) type or a double check valve arrangement. Each backflow preventer shall have a tag with the date that it was last certified by a Certified Technician. The backflow preventer must have been certified within the last year. The Contractor shall furnish and use an approved fire plug wrench to open and close the hydrant. Pipe wrenches shall not be used. When the hydrant is not being used, it shall be shut off. When the need for the hydrant is finished, the hydrant shall be shut off, the temporary connection and backflow preventer shall be removed, the fire hydrant cap shall be replaced, and the Fire Department shall be notified that the hydrant will no longer be used.

Signature of permit requestor:

Date of Signature: _____

ROUTING EXCAVATION PERMITS
Points of Contact

OFFICE NAME	POC	BLDG #	TELEPHONE
Omega Pipeline Company (Natural Gas)	UTILICORP		1-800-282-4916
Vina Construction, Inc. (Exterior Electrical Contractor)	Mr. Ervin Williams	2272	596-0068
Rust Constructors, Inc. (DPW Maintenance Contractor)	MS Jeanne Barnett	2226	596-0074/0693
Directorate of Public Works, Work Management Branch ATZT-DPW-BW	Mr. Harold Campbell Mr. Gary Powell	2200	596-0926 596-1790 FAX 596-0868
Army Telephone (DOIM)	Mr. Bob Lewis MS Ida Allen	404	596-0681 FAX #6-1201
1-800-DIG-RITE (1-800-344-7483) Sprint Telephone Company			
Barracks Phone Service	Mr. Rick Vire	470	329-4603/8200 FAX 329-4586
Cable TV Company St. Robert	MS Susan Hall		336-5284 FAX 336-4556
J-SIDDS Commun/Electronics ATZT-DL-B-M-CE/DOL	Mr. Steve Page	5265	596-0874

EXAMPLE

STATE OF MISSOURI

PROJECT EXEMPTION CERTIFICATE FOR EXEMPT ENTITY CONSTRUCTION

UNITED STATES OF AMERICA

NAME OF EXEMPT ENTITY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

TAX IDENTIFICATION NUMBER (None required)

PROJECT IDENTIFICATION NUMBER _____

PLEASE PROVIDE THE PROJECT LOCATION AND A BRIEF DESCRIPTION BELOW:

CONTRACT DATE _____

CERTIFICATE EXPIRATION DATE _____

Contractors are required to provide a copy of this project exemption certificate to their vendors.

This project exemption certificate does not allow contractors to purchase machinery, equipment, or tools used in fulfilling this contract, tax exempt.

Suppliers accepting this project exemption certificate are required to render to the contractor invoices bearing the name of the exempt entity and the project identification number.

An exempt entity that fails to revise the expiration date on this certificate as necessary to complete any work required by the contract will be liable for any sales tax determined due as a result of an audit of the contractor.

The Contractor shall provide this project exemption to all subcontractors purchasing construction materials for this project.

SIGNATURE OF AUTHORIZED AGENT

EXHIBIT A

-- End of Section --

SECTION 01130
DELIVERIES OR PERFORMANCE
FOR
DESIGN-BUILD CONTRACT PROCEDURES

1. Design Schedule and General Contract Procedures. After the award of the Contract the Contractor shall execute the work in accordance with the following design deliveries and design schedule. Construction is not to commence until the Government has reviewed and approved the applicable design documents for the construction. The Government reviews the Contractor's design documents for compliance with the Contract and acceptability to the customer. The Contractor is totally and solely responsible for the design, coordination, compatibility, completeness, and compliance with the contract requirements. Prior to start of construction, there will be a meeting to discuss the Contractor's Quality Control Plan. See Section 01451 - Contractor Quality Control for details. After notice to proceed with the Contract, a pre-design conference will be held at the Corps of Engineers, Fort Leonard Wood Area Engineer Office, Fort Leonard Wood, Missouri to acquaint the Contractor with the general plan of contract administration and requirements under which the design is to proceed.

a. The design of the Upgrade Night Fire Range and the Automatic Fire Range shall follow the standard design manual for Remoted Target System (RETS) Ranges CEHNC-1110-1-23. The Contractor is responsible for acquiring this design manual from the following Army based Web Site: <http://www.hnd.usace.army.mil/rtlp/index.htm>

b. After the Contractor completes the engineering and topographic survey on which to base the design referenced in the General Design Requirements Chapter 4, Survey Requirements, the Contractor shall verify the range fans with the Fort Leonard Wood Range Safety Officer to locate all buildings, firing positions, and target emplacements on each firing range site plan. If the Contractor's site plans results in violation of the range safety fans, then the ranges shall be shifted at no additional cost to the Government so the range safety fans are in full compliance with the range guide and the design supports the standard range remoted target system. The Contractor has no latitude to move the location of the firing positions or ranges without the approval of the Contracting Officer.

c. All design submittals including the 50%, 100%, and 100% Back-Check shall include design of the Upgrade Night Fire Range and the Automatic Fire Range as follows:

(1) The 50 percent design submittal shall be complete with building designs, site surveys, site design including utilities, site grading, drainage slopes, maintenance trails, firing positions, range layouts, signage, target emplacements, roadways, parking, etc. The 50% shall be completed within 60 calendar days after the Notice to Proceed and include a design analysis with calculations, drawings, and specifications referenced in ER 1110-345-700, Design Analysis, Drawings, and Specifications. The Contractor shall acquire a copy of the ER from the following Army based Web Site: <http://www.usace.army.mil/inet/usace-docs/eng-regs/er1110-345-700/toc.htm>.

(2) The 100 percent design submittal shall incorporate all review comments from the 50 percent design review and complete the design within 30 calendar days after the Contractor receives the letter of approval of the 50 percent design from the Fort Leonard Wood Area Engineer.

(3) The 100 percent back check design submittal shall be complete within 15 calendar days after the Contractor receives the letter of approval of the 100 percent design from the Fort Leonard Wood Area Engineer.

d. Additional back check reviews may be required until the Government is assured that all review comments have been incorporated. The Government review does not constitute approval or acceptance of any variations from the RFP or from the Contractor's proposal unless such variations have been specifically pointed out by the Contractor in writing and authorized by the Government. The responsibility for a total design in accordance with the Contract shall remain with the Contractor and any

interim notice to proceed with construction by the Contracting Officer after the approval of the 50% design submittal will in no way mitigate that responsibility.

e. The Government review period for the 50 percent and 100 percent submittals shall be 15 calendar days each. The Government review period for the back check submittal shall be 10 calendar days. The time stated for completion of design for review is incorporated into the overall completion time for the project stated in Section 00800.

f. Each design submittal shall be appropriately stamped, i.e., "For Review Only". Each sheet of the drawings shall be stamped. The back check design submittal after the Government review of the 100% completed design shall be stamped "For Back check Review Only – 100%", accordingly; each sheet of the drawings shall be stamped.

2. Submission of Construction Drawings, Specifications and Design Analyses

a. For the final project drawings, the Contractor shall incorporate Government format title blocks on his own sheets.

b. Design documents shall include construction drawings, specifications and design analyses for categories such as, but not limited to, architectural, structural, mechanical, electrical, grading, drainage, paving, and outside utility services in accordance with ER 1110-345-700. Specifications shall be in sufficient detail to fully describe and demonstrate the quality of materials, the installation and performance of equipment, and the quality of workmanship. Detailing and installation of all equipment and materials shall comply with the manufacturers' recommendations. The design analysis shall be for each discipline of work and shall include all features with the necessary design calculations, tables, methods and sources used in determining equipment and material sizes and capacities, and shall provide sufficient information to support the design.

c. All review meetings will be held at the U.S. Army Corps of Engineers Area Engineer Office, Fort , Leonard Wood, Missouri.

d. The Contractor shall certify that all items submitted in the design documents comply with the RFP. The criteria specified in the RFP are binding contract criteria and in case of any conflict after award between the RFP criteria and Contractor's submittals, the RFP criteria will govern unless there is a written and a signed agreement between the Contracting Officer and the Contractor waiving a specific requirement. This certification shall be included on each sheet of working drawings.

e. The Contractor shall verify all field conditions which are significant to design including field inspections, topographic surveys, utility information, researching and obtaining all necessary as-built drawings and reproducing them for his own use as necessary, and discussing status with knowledgeable personnel. The information shall be reflected in the design documents.

f. Topographic surveys and any additional geo-technical subsurface and soils testing information, asbestos abatement surveys, permits, etc required by the Contractor for design after award of the contract shall be procured and paid for by the Contractor.

3. Material Required for 50 Percent Design Submittal

a. Material submitted for the 50 Percent Design Submittal shall comply with ER 1110-345-700 including all range building designs for the Upgrade Night Fire Range (R3) and Automatic Fire Range (R9), vicinity maps and site layouts for each firing range showing both the building designs and site designs and range layouts, building demolition, and utility drawings required for 100 percent submittal, but developed to approximately 50 percent completion.

b. All draft specifications for the building and site work, including index and trade sections.

c. Color boards of interior and exterior finish material are not required.

d. Design calculations developed to the extent as required to support the design of that portion of site grading, site drainage, pavement design, utility connections, structural, electrical, and mechanical systems included in this submittal.

4. Material Required for 100 Percent Design Submittal

a. General Requirements (see ER 1110-345-700).

b. All drawings, including building design and site design, specifications, and design analysis calculations.

a. Preparation of grading plans and erosion control plans are critical for the range target emplacement locations, firing positions, and maintenance trails.

b. Specifications. Specifications for the building and site work, upgraded to 100 percent completion. Contractor shall provide final proposal of all materials and finishes.

c. Design Analysis. All design and calculations shall be performed by a licensed professional engineer and/or registered architect, and shall be stamped as such. The design analysis shall be a separate bound assembly, in one or more volumes, of all the functional and engineering criteria, design information and calculations applicable to the project design as noted in ER 1110-345-700. The analysis shall be organized in a format appropriate for review, approval and record purposes. The design calculations shall be presented in a clear and legible form, with all methods and references identified and all assumptions and conclusions explained. Calculations submitted shall include all of those required to support design of the RFP. The design analysis shall cover each discipline of work and shall include all features. The design analysis shall include complete site and pre-engineered metal building design calculations for framing, structural elements (including structural anchorage system, wind load analysis, reinforcing steel, concrete mixes, etc.), electrical and mechanical systems and roadway pavement and shoulder design. Design calculations shall include computations for sizing equipment, air duct design, energy analysis and U-factors for ceilings, roofs, exterior walls and floors. Electrical design calculations shall include lighting and load calculations, cathodic protection, lightning protection, secondary power and data distribution systems. Design calculations that are developed for standardized or repetitive features of the building shall be extended, as may be appropriate, to account for nonstandard siting features such as building orientation, and drainage characteristics.

d. Equipment Schedule. Based on the results of calculations, provide a complete list of the materials and equipment proposed for heating and cooling with the manufacturer's published catalogued product installation specifications and roughing-in data. The heating and cooling equipment data shall include the manufacturer's wiring diagrams, installation specifications, ARI certification, and the standard warranty for the equipment, propane tanks, and septic tanks. In addition, provide the manufacturer's published catalogued capacities for supply diffusers as evidence that the arrangement of supply air outlets in each room will provide the throw and spread characteristics required to completely cover all exterior wall surfaces with a blanket of warm and cool air at the proper design velocities.

e. Specific Design Requirements.

(1) Site Utilities: Information on existing lines shall be provided where existing utilities are involved with new construction. Additional detail drawings shall be provided where required. Specifications shall be provided for valves, pipes, etc. Materials and construction of all mains and appurtenances shall be indicated.

(2) General site grading, maintenance trails, firing positions, target emplacements, and drainage of each range site shall be indicated by contour lines with an interval of not more than .25-meter.

(3) Site grading plans and designs of entrance roads and parking including road profiles, pavement section profiles, ditches, drainage structures, etc.

(4) Site demolition plans of existing buildings to be demolished, utilities, and other site appurtenances.

(5) The foundation plan shall be coordinated with the pre-engineered metal building manufacturer.

5. Design Review Distribution

a. The Contractor shall transmit the 50 percent, 100 percent, and 100 percent back check submittals to the Government agencies and in the quantities indicated below. All documents shall contain an index of contents. The Contractor shall enclose a letter of transmittal with the contract number of each submittal package indicating the type of submittal (e.g., 50 percent design, 100 percent design, 100 percent back check, etc.), the project name and number and the date written comments are due at the Office of the Contracting Officer. Provide copies to the following distribution:

- Six (6) copies of all transmittals shall be sent to the U.S Army Corps of Engineers, Kansas City District, ATTN: CENWK-PM-MM (Michelle Riley), 601 E. 12th Street, 700 Federal Building, Kansas City, Missouri 64106-2896
- Three (3) copies to the U.S. Army Corps of Engineers, Fort Leonard Wood Area Engineer Office, ATTN: FMRI (Rex Ostrander), Fort Leonard Wood, Missouri, 65473
- Six (6) copies to Fort Leonard Wood Public Works, ATTN: Rex Ostrander, Fort Leonard Wood, Missouri 65473
- One (1) copy to Commander, USAESCH, ATTN: CEHNC-IS-SP (Mae Parker), 4820 University Square, Huntsville, AL 35816-1822
- One (1) copy to USAISEC-FDEO, ATTN: AMSEL-IE-DE-IN-CO (Tina Reed), 1435 Porter Street, Suite 208, Fort Detrick, Maryland 21702-5047

All submittals shall be transmitted by overnight express mail. One (1) copy of each submittal includes the following: one copy of the half-size set of drawings, one set of specifications, and one design analysis.

b. If for any reason the Government requires more time than stated for review of submittals, the Contractor will be granted an extension of time equal to the number of calendar days of delay.

c. Design Review Meetings at 50% and 100% design. Design review meetings shall be held at Fort Leonard Wood Area Engineer Office not later than 15 days after receipt of submittal after each non-back check submittal.

d. The Contractor and his representatives involved in the design shall attend. Government personnel will present review comments for discussion and resolution. Copies of comments, annotated with comment action agreed on, will be made available to all parties by the Contractor within 14 calendar days from the conference date. Unresolved problems will be resolved by immediate follow-up action at the end of meetings. In addition to the annotated review comments, the Contractor shall submit copies of a memorandum of the design review meetings, summarizing major decision points and issues, which require resolution and the action office. Valid comments will be incorporated. On receipt of final corrected designs, subsequent to completion of the back check reviews, the Kansas City District will provide formal Government approval necessary to initiate construction. The Government, however, reserves the right to disapprove design document submittals if comments are of too great a significance. In this case, every effort shall be made during follow-up action between the Contractor and the Kansas City District to resolve conflicts and problems such that documents can be fully approved. However, if the final submittal is incomplete or deficient, requiring correction by the Contractor and re-submittal for review

beyond; the first back check review, the cost of handling and re-reviewing will be deducted from payment due the Contractor at the rate of \$500 per submittal.

e. The Contractor shall submit complete design documents in the same quantity to the same office described in paragraph 5. For each back check (one or more) until the Government is satisfied that all review comments have been addressed and resolved. Following government approval of the last back check submittal, the Contractor shall submit 2 copies of the electronic CADD .dgn files within seven (7) calendar days, including three (3) complete sets of full size copies and six (6) half scale copies of the drawings and nine (9) copies of the specifications and one reproducible set of complete half size drawings to Fort Leonard Wood Area Engineer Office, three (3) complete sets of half size drawings and specifications to the Fort Leonard Wood Public Works, and five (5) complete sets of half size drawings and specifications to the Kansas City District Office. The contractor shall retain the mylar + originals until completion of as-built drawings.

f. Government review does not constitute approval or acceptance of any variations from the RFP or from the proposal, unless such variations have been specifically requested in writing by the proposers and approved in writing by the Contracting Officer.

6. Approvals Prior to Construction. Review and acceptance of the final plans and specifications must be obtained from the Contracting Officer before start of construction. However, the Army may accept a design submission for site development, and if found satisfactory, allow the contractor to proceed with earthwork and other elements of site development while final plans and specifications for total work being completed. The responsibility for a totally integrated design in accordance with the contract will remain with the contractor and this interim NOTICE TO PROCEED will in no way mitigate against that responsibility.

7. Submittal Registers. On receipt of approval to start construction, the Contractor shall submit copies of ENG Form 4288, Submittal Register, in accordance with Section 01330: Submittal Procedures, paragraph: Submittal Register.

8. As-Built Drawings: See Section 01100. Provide final as-built drawings in CADD using MicroStation format. Design criteria and referenced drawings furnished by the Government are intended to serve as minimum standard in the preparation of acceptable working drawings and specifications. Applicable details of these drawings shall be incorporated into the working drawings and specifications without reference to their source. Incorporation by reference only is not acceptable. Plan sheet size preferred is "D" size (24 by 36 inches)(full size). Sheet size "E" (28 by 40 inches) is acceptable. Construction drawings shall be provided in both original hard copy and on a CD-ROM compact disk and produced in a Bentley MicroStation 95 CADD format.

a. Cover Sheet. A cover sheet for the drawings shall be provided by the contractor and the cover sheet shall include, as a minimum, the project number and title, project location, installation map, contract number, and execution year.

b. Format. Drawings shall be produced in a Bentley MicroStation 95 CADD format and compatible without conversion with the CADD system hardware and software in use at Fort Leonard Wood PW.

c. CADD files must display as plotted and vice versa (WYSIWYG). Formatting and layering in CADD drawing design files shall be in accordance with the Tri-Service Architectural/Engineering/Construction Computer-Aided Design and Drafting (CADD) standards. Half-scale drawings shall be exact half-scale reproductions of the full-scale drawings.

d. CADD Design Files. Design files shall be fully compatible with Bentley MicroStation 95 version or earlier version. Plotted files shall provide final deliverable CADD files that display all design file features correctly when plotted on the current Public Works plotters. Currently Public Works plotters are HP 650c plotters. CADD reference files shall be merged when used to create drawings and cover sheets.

9. Conflicting Documents. In cases of conflicts between the RFP, contractor's proposal and contractor's design, the following will be the order of precedence: the RFP; contractor's proposal contractor's specifications; contractor's plans. Other conflicts that arise shall be referred to the Contracting Officer for determination.

10. Schedules After Award of Contract. The Contractor shall provide a detailed schedule, which shall include a phasing plan, utility disruptions, demolition/asbestos abatement plan, erosion control plan, UXO procedures and subsurface dedudding, and any other activities that would affect existing construction, on or off the project site.

11. Construction Requirements. After the Contractor has completed the applicable project design documents the Government will issue to the Contractor a notice to proceed with construction. Prior to commencement of construction a Pre-construction Conference will be held to acquaint the Contractor with the general plan of contract administration and requirements under which the construction operation is to proceed. This conference will also inform the Contractor of the obligations concerning equal opportunity and Federal wage rates reporting system.

12. Contract Closeout. Completion, acceptance, and contract settlement are accomplished when final punch list items (see Contract Clause Inspection of Construction) have been completed and approved, as-built drawings are complete, and warranty provisions and dates are established.

SECTION 01320

PROJECT SCHEDULE, CONTRACTOR PREPARED NETWORK ANALYSIS (NAS)

PART 1 GENERAL

1.1 SCOPE

This section covers requirements for Contractor Prepared Network Analysis System, complete.

1.2 GENERAL

The progress chart to be prepared by the Contractor pursuant to the CONTRACT CLAUSE titled "Schedule For Construction Contracts" shall consist of a network analysis system (NAS) as described below. The scheduling of construction is the responsibility of the Contractor and contractor management personnel shall actively participate in development of the network logic diagram so that intended sequences and procedures are clearly understood. The Contractor shall provide the NAS in either Arrow Diagram Method (ADM) or Precedence (PDM) format. The network diagram required for each submission of the NAS shall depict the order and interdependence of activities and the method by which the work is to be accomplished. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and provided the basis of all progress payments.

1.3 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 PROCEDURES:

SD-01 Data

Preliminary Network Diagram; G-RE.

Initial Detailed Network Diagram; G-RE.

Monthly Reports, Data and Diagrams; G-RE.

- a. Logic Report
- b. Criticality Report
- c. Cost of Earned Value Report
- d. Summary Network Diagram
- e. Narrative Report
- f. SDEF Data Dis

1.4 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor Progress. Lack of an approved schedule or scheduling personnel shall result in an inability of the Contracting officer to evaluate Contractor Progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below shall result in the disapproval of the entire project

Schedule submission and the inability of the Contracting officer to evaluate Contractor progress for payment purposes. In case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, then the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

PART 2 PRODUCTS

2.1 NETWORK ANALYSIS SYSTEM

2.1.1 Preliminary Network Diagram

The Contractor shall submit within 10 calendar days of the NOTICE-TO-PROCEED a preliminary NAS schedule covering the first 90 days of operation. The preliminary schedule shall be used for payment not to exceed 60 days after notice to proceed.

2.1.2 Initial Detailed NAS

The Initial Detailed Network Diagram shall be submitted within 40 calendar days after notice to proceed. It shall provide (1) a reasonable sequence of activities which represent work through the entire project and (2) a reasonable level of activity detail. Duration ranges for work activities shall generally be between three and twenty-two workdays. The schedule interval shall extend from notice to proceed through the contract duration specified in SPECIAL CLAUSE titled "Commencement, Prosecution, and Completion of Work" to contract completion date. Completion of the last activity in the schedule shall be constrained by the contract completion date such that if the projected finish of the last activity falls after the contract completion, then the float calculation shall reflect negative float. Interim milestone dates specified shall be so constrained also. Progress payments will be withheld until the Contractor submits an approvable schedule. Since it is understood that the contractor's logic and duration may change between the issuance of the Preliminary NAS and the Initial Detailed NAS, the Contracting Officer shall require a complete and comprehensive accounting of all modifications made to the Preliminary NAS to produce the Initial, Detailed NAS.

2.1.2.1 Format of the Initial Detailed NAS

The diagram shall show a continuous activity flow from left to right. The diagrams shall be 36x48, minimum size unless explicitly modified by the Contracting Officer. The diagrams shall be legible, shall have activities 'grouped' or 'banded' by Project area, building or feature, and shall contain the following information:

- a. Activity number
- b. Activity description
- c. Duration in workdays
- d. Total float in workdays
- e. Logic ties
- f. Clearly marked critical path (s)
- g. 'Banded' or 'grouping' identification on each sheet
- h. Composed and/or milestone dates
- i. Scale of sufficiently large scale to render a legible diagram

Dates shall be shown on the diagram for start of the project, any

milestones required by the contract, and contract completion. The critical path shall be clearly identified. Submittal, review, procurement, fabrication, delivery, installation, start-up, and testing of special or long lead-time materials and equipment shall be included in the NAS diagram. Government and other agency activities shall be shown. These include but are not limited to: notice to proceed, approvals, inspections, and utility tie in for phasing requirements. Procurement Activities: Task related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approval procurement, fabrications, and delivery.

- a. Activity Identifier: The field known as the activity number or activity ID shall consist of numeric or alpha/numeric entries. Each major building, area or feature of the work shall have blocks of numbers set aside to identify each such feature. These numbers shall generally be ascending with procurement having the lower number sets, with ascending sets of numeric identifiers being applied to activities in the schedule by area, feature or building. Skip numbering shall be used in minimum increments off tens. The smallest set of numeric activity identifiers shall be used, with no spaces, left zero fills or other symbols to be used. The purpose of this requirement is to provide for simple, ascending activity numbers which will facilitate the computerized review and on-going use of the NAS database. The use of CSI codes, special account codes, identifiers or other matrices which the contractor may wish to use, or which are otherwise required herein, shall be input using data code fields other than the activity number/activity ID field.
- b. Building, Area or Feature Codes: At least one alpha/numeric field in the scheduling software shall be used to provide a simple and clear identification of the building, area or feature which is represented by the activity.
- c. Artificial Schedule Constraints: The NAS shall contain no set dates other than those shown in the Contract. The contractor shall review with the Contracting Officer's Representative each proposed set date which the contractor proposes to include in the NAS and shall receive explicit approval for each closed date used in the NAS. The use of artificial float constraints such as 'Zero Free Float' or 'Zero Total Float' options are generally prohibited. The use of such features may be considered if fully justified by the contractor and explicitly approved by the Contracting Officer's Representative prior to its use in the NAS.
- d. Other Software Options: If the contractor utilizes a scheduling software system which provides updating options such as 'Retained Logic' and 'Progress Override' the contractor shall use the 'Retained Logic' option for all updates to the NAS.

If the contractor desires to modify the approved NAS logic to correct out-of-sequence work, the contractor shall make a request in writing to the Contracting Officer defining the desired modification(s). No unilateral modifications shall be made by the contractor to the approved NAS.

Actual Start and Finish Dates shall not be automatically updated by

default mechanisms that may be included in CPM software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from the Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish Dates on the Daily Quality Control Report for every in-progress or completed activity and insure that the data contained on the Daily Quality Control Reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's Schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes.

e. Resources: The contractor shall include in the NAS all major trades and equipment items required to construct the Project. The trades and major equipment items shall be identified by a unique code and the quantity of the resources shall be input into the scheduling software's 'resource' fields. Each Work activity shall have the planned resources identified as described above by specific trade type and/or equipment type. The resource file library and code listing shall be submitted by the contractor with the Initial, Detailed NAS, along with resource usage curves for each, individual resource code, shown by early and late usage as produced by the scheduling software database.

f. Negative Lags: Negative lags shall not be used in the contractor's NAS. If the contractor using PDM scheduling chooses to show-overlapping duration between related activities, start-to-start and finish-to-finish relationships shall be used, with appropriate and justifiable lags. If ADM is used by the contractor, dummies shall have duration of zero.

g. Dangles: The only 'dangling' activities in the network shall be the beginning activity such as 'notice of award' or 'notice to proceed' and the ending activity such as 'contract complete'. A start and/or end 'dangle' is defined as an activity whose start is restrained only by the start date of the project or subproject, and/or whose finish is restrained only by the end date of the overall project or subproject.

h. Anticipated Weather: The contractor's 'holiday' or 'non-work day' file in the scheduling database shall have the anticipated lost weather days as listed herein input as non work days for each month of the calendar. This anticipated weather impact calendar should only be applied to activities which are subject to weather related delays.

2.1.2.2 Monthly Reports, Data and Diagrams

The Contractor shall submit a reproducible and two copies of the network diagram at the initial and quarterly updates and three copies of the specified reports at the initial and every monthly update throughout the life of the project. The format of the reports shall contain: Activity Number(s), Activity description, Original Duration, Remaining Duration, Early Start date, Late Start date, Early Finish date, Late Finish date, and Total Float. The three report formats are listed below.

a. Logic Report: This report shall list all activities sorted according to activity number. Activities shall be printed in ascending order of activity number. Any standard report which lists all activities including restraints in this manner is acceptable. This report shall include the detail information related stated above and shall include and display the preceding and succeeding activities.

b. Criticality Report: This report shall list all activities sorted

in ascending order of total float. Activities which have equal values of total float shall be listed in ascending order of Early Starts.

c. Cost of Earned Value Report: Cost and/or Earned Value reports shall contain Estimated Earned Value, Percent Complete (based on cost), and Earnings to Date. This report shall compile Contractor's total earned value on the project from the Notice to Proceed until the most recent monthly progress meeting based on agreed progress between the Contractor and the Contracting Officer. Provided that the Contractor has submitted a complete schedule update, this report shall serve as the basis for determining Contractor payment. When the Bidding Schedule includes bid item(s), activities shall be grouped by bid item and then sorted by activity number(s). This report shall subtotal all activities in a bid item and provide a bid item percent complete and then total all bid items to provide a total project percent complete.

d. Summary Network Diagram: A Summary Bar Chart Network shall be submitted monthly. The summary bar chart shall be limited to 150 activities.

2.2 MONTHLY MEETINGS

A monthly meeting shall be conducted on site attended by the Contractor's project manager and appropriate Contracting Officer's representatives. During this meeting the Contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the NAS required to reflect the current status of the project. The Contracting Officer's representative shall approve activity progress, proposed revisions and adjustments, and the use of any optional calculations. The following shall be addressed:

2.2.1 Actual Start and Finish Dates

The actual start and actual finish dates for all activities in progress or completed as appropriate.

2.2.2 Estimated Remaining Duration

The estimated remaining duration for each activity in progress. Progress calculations must be based on remaining duration for each activity and be in an approved calculation mode. The Estimated Remaining Duration shall not be tie-to the Earned Value.

2.2.3 Earned Value

The earned value for each activity started but not completed. Payment shall be based on cost of completed activities plus cost to date of in-progress activities.

2.2.4 Logic Changes

All logic changes pertaining to change orders, on which a Notice to Proceed has been issued, Contractor proposed changes in activity sequence or duration, and corrections to schedule logic to avoid out of sequence progress. All logic changes shall be submitted for approval prior to their insertion into the approved NAS.

2.3 UPDATE OF NAS

Following the monthly progress meeting, a complete update of the NAS based on the approved progress, revisions, and adjustments agreed upon at the meeting shall be computed and submitted not later than 5 working days after the meeting. This update shall be subject to approval of the accurate entry of information agreed upon at the meeting. Actual starts and finishes, remaining duration, or percent complete shall not be automatically updated by default dates contained in many CPM scheduling software systems, except that early start for an activity which could start prior to the update. Activities which have posted progress without predecessor activities being completed shall be allowed only on a case by case approval of the Contracting Officer's representative who may require logic changes to correct all such out of sequence progress. No unilateral modifications shall be made to the approved NAS without the explicit approval of the Contracting Officer.

2.4 NARRATIVE REPORT

A narrative report shall be provided with each update of the NAS. This report shall include (1) a description of activities and progress along the four most critical paths, (2) a description of a current and anticipated problem areas or delaying factors and their impact, and (3) an explanation of the corrective actions taken. Only modifications that have been authorized and approved by the Contracting Officer shall be included in the schedule sub-mission. The narrative report shall specifically reference, on an activity by activity basis all changes made since the previous period and relate each change to documented, approved schedule changes. This report, along with the progress update above, shall provide the basis for the Contractor's progress payment request, and the Contractor shall be entitled to progress payments determined from the currently approved NAS update. If the Contractor fails or refuses to furnish the information and NAS data which, in the sole judgment of the Contracting officer, is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided a progress payment estimate and progress payment will not be made.

2.5 TIME IMPACT "FRAGNET" ANALYSIS

Within twenty calendar days from the notice to proceed of a change, or from the start of the impact of a mutually recognized changed condition, whichever event occurs first, the contractor shall submit a detailed Time Impact 'fragnet' analysis to the Contracting Officer. The Time Impact 'fragnet' will clearly demonstrate all activities associated with the changed condition, including estimated durations, costs, resources and proposed tie-in points of the 'fragnet' into the approved NAS. Should the contractor fail to submit the 'fragnet' analysis within the expired time period as specified above, it shall be mutually agreed between the contractor and the Contracting officer that the changed condition has no time impact. The foregoing shall not be construed to limit the Contracting Officer's authority to issue unilateral modifications to the Contract as provided for herein.

2.6 EXTENSION OF CONTRACT COMPLETION DATE

In the event the Contractor requests an extension of the contract completion date for any other contractual reason, he shall furnish such justification as the Contracting Officer may deem necessary for a determination of the Contractor's right to an extension of time under the provisions of the contract. In such event, the schedule revisions must clearly display that the Contractor has used in full all available float

time for the work involved with the request. Actual delays that are found to be caused by the Contractor's own actions or lack of action, and which result in the extension of the projected contract completion date, shall not be cause for extension of the contract completion date. The Contracting Officer may find cause to extend the contract completion date under the contract in the absence of a request by the Contractor when, in the Contracting Officer's judgment, it is equitable.

2.7 EXTENSIONS OF TIME

Total Float is defined as the difference in time between the early start date and the late start date, or the difference between the early finish date and the late finish date. Total Float available in the schedule at any time shall not be considered as for exclusive use by either the Contractor or the Government. Extensions of time for performance of work required under CONTRACT CLAUSES titled, "Changes", "Differing Site Conditions", "Default (Fixed Price Construction)" or "Suspension of Work" will be granted only to the extent that equitable time adjustments for affected activities exceed the total float along their paths.

2.8 DATA DISK

A data disc shall be provided as required by paragraph: Scheduling System Data Exchange Format. The automated scheduling system utilized by the Contractor shall be capable of providing all requirements of this specification. As many data disk(s) as required in paragraph: Scheduling System Data Exchange Format shall be provided with the Preliminary Schedule, Initial schedule, Monthly Updates, and all NAS revisions or requests for revision.

2.9 SCHEDULING SYSTEM DATA EXCHANGE FORMAT

2.9.1 Application of this Provision

The data exchange format provides a platform for exchanging scheduling and planning data between various software systems. The Data Exchange Format shall allow project management systems to share information with other programs e.g. Resident Management System (RMS). Scheduling information shall be transferred from the contractor's project management system to the Government as described in this section.

2.9.2 Electronic Data Exchange File Required for All Schedule Submissions

2.9.2.1 Schedule Data

The Contractor shall provide schedule data in the Data Exchange Format for each Preliminary, Initial, Monthly NAS Updates, and requests for time extensions or change proposals. The Contractor's failure to provide schedule data in the exact format described herein shall result in disapproval of the entire schedule submission.

2.9.2.2 Transfer of Schedule Data

The entire set of schedule data shall be transferred at every exchange of scheduling data. Thus, for updates to existing projects, the data exchange file shall contain all activities that have not started or are already complete as well as those activities in progress.

2.9.3 Data Transfer Responsibility

The Contractor shall be responsible for Electronic Data Exchange File data that may have been lost or destroyed during transit between the Contractor and the Contracting Officer. If Electronic Data Exchange File data is damaged during transit, then the Contractor shall provide the Contracting Officer with new Electronic Data Exchange File within two (2) working days of notification by the Contracting Officer.

2.9.4 Data Consistency Responsibility

The Contractor shall be responsible for the consistency between the Electronic Data Exchange File and printed reports which accompany schedule submissions. If Electronic Data Exchange File and printed reports which accompany schedule submission differs, in any way, from the printed schedule reports or standard activity coding, then the Contracting Officer shall disapprove the entire schedule submission.

The Contractor shall provide the Contracting Officer with a completely revised, and consistent, schedule submission within 24 hours of notification of inconsistency by the Contracting Officer.

2.9.5 Creating the Electronic Data Exchange File

The Contractor shall have the option of creating the electronic data exchange file by one of the three following methods.

2.9.5.1 Commercially Available Software

The Contractor shall be required to secure software that meets this requirement. Many commercially available scheduling systems support the standard data exchange format. Under this option the Contractor shall produce his own data translation software. This software shall take the information provided by the Contractor's scheduling system and reformat the data into the Data Exchange Format.

2.9.5.2 Interface Program

Under this option the Contractor shall produce his own data translation software. This software shall take the information provided by the Contractor's scheduling system and reformat the data into the Data Exchange Format.

2.9.5.3 Manual Methods

Under this option the Contractor shall manually reformat his scheduling system report files or create all necessary data by manually entering all data into the Data Exchange Format.

2.9.6 File Transfer Medium

All required data shall be submitted on 3 1/2" diskettes), formatted to hold 1.44 MB of data, under the MS-DOS version 5.0 (or higher) operating system. Higher data densities and other operating systems may be approved by the Contracting Officer if compatible with the Government's computing capability.

2.9.7 File Type and Format

The data file shall consist of a 132 character, fixed format, 'ASCII' file.

Text shall be left justified and numbers shall be right justified in each field. Data records must conform, exactly, to the sequence column position, maximum length, mandatory values, and field definitions described below to comply with this standard data exchange format. Unless specifically stated, all numbers shall be whole numbers. All data columns shall be separated by a single blank column.

2.9.8 Electronic Data Exchange File Name

The Contractor shall insure that each file has a name related to either the schedule data date, project name, or contract number. No two Electronic Data Exchange Files shall have the same name through out the life of this contract. The Contractor shall submit his file naming convention to the Contracting Officer for approval. In the event that the Contractor's naming convention is disapproved, the Contracting Officer shall direct the contract to provide files under a unique file naming convention.

2.9.9 Disk Label

The Contractor shall affix a permanent exterior label to each diskette submitted. The label shall contain the type of schedule (Preliminary Initial, Update, or Change), full project number, project name, project location, data date, name and telephone number of the Contractor's scheduler, and the MS-DOS version used to format the diskette.

2.9.10 Standard Activity Coding Dictionary

The Contractor shall submit, with the initial schedule submission, a consistent coding scheme that shall be used throughout the project for the Activity Codes shown in paragraph: Activity Records of this section. The coding scheme submitted shall demonstrate that each code shall only represent one type of information through the duration of the contract. Incomplete coding of activities or an incomplete coding scheme shall be sufficient for disapproval of the schedule.

2.10 DATA EXCHANGE FILE FORMAT ORGANIZATION

The Data Exchange File Format shall consist of the following records provided in the exact sequence shown below:

Paragraph Record Reference Description	Remarks
Volume Record	First Record on Every Data Disk
Project ID Record	Second Record
Calendar Record(s)	Minimum of One Record Required
Holiday Record(s)	Optional Record
Activity Record(s)	Mandatory Record
Precedence Records	Mandatory for Precedence Method
Unit Cost Record(s)	Optional for Unit Cost Projection.
Progress Record(s)	Mandatory for Updates
File End Record	Last Record of Data File

2.10.1 Record Descriptions

2.10.1.1 Volume Record

The Volume Record shall be used to control the transfer of data that may not fit on a single disk. The first record in every disk used to store the

data exchange file shall contain the Volume Record. The Volume Record shall sequentially identify the number of the data transfer disk(s). The Volume Record shall have the following format:

Description	Column Position	Max Len.	Required. Value	Type	Just
RECORD IDENTIFIER	1- 4	4	VOLM	Fixed	
DISK NUMBER	6- 7	2	Number		Right

a. The RECORD IDENTIFIER is the first four characters of this record. The required value for this field shall be "VOLM".

b. The DISK NUMBER field shall identify the number of the data disk used to store the data exchange information. If all data may be contained on a single disk, this field shall contain the value of "1". If more disks are required, then the second designated with a "3", and so on. Identification of the last date disk shall not be accomplished with the Volume Record. Identification of the last data disk is accomplished in the PROJECT END RECORD (see paragraph: File End Record).

2.10.1.2 Project ID Record

The Project ID Record is the second record of the file and shall contain project information in the following format:

Description	Column Position	Max. Len.	Required. Value	Type	Just
RECORD IDENTIFIER	1- 4	4	PROJ	Fixed	
DATA DATE	6- 12	7	-	ddmmmyy	See(2)
PROJECT IDENTIFIER	14- 17	4	-	Alpha	Left
PROJECT NAME	19- 66	48	-	Alpha	Left
CONTRACTOR NAME	68-103	36	-	Alpha	Left
ARROW OR PRECEDENCE	105	1	A,P		Fixed
CONTRACT NUMBER	107-112	6	-	Alpha	Left
PROJECT START	114-120	7	-	ddmmmyy	Filled
PROJECT END	122-128	7	-	ddmmmyy	Filled

a. The RECORD IDENTIFIER is the first four characters of this record. The required value for this field shall be "PROJ". This record shall contain the general project information and indicates which scheduling method shall be used.

b. The DATA DATE is the date of the schedule calculation. The abbreviation "ddmmmyy" refers to a date format that shall translate a date into two numbers for the day, three letters for the month, and two numbers for the year. For example, March 1, 1999 shall be translated into 01MAR99. This same convention for date formats shall be used throughout the entire data format. To insure that dates are translated consistently, the following abbreviations shall be used for the three character month code:

Abbreviation	Month
JAN	January
FEB	February
MAR	March

APR	April
MAY	May
JUN	June
JUL	July
AUG	August
SEP	September
OCT	October
NOV	November
DEC	December

c. The PROJECT IDENTIFIER is the maximum of four-character abbreviation for the schedule. These four characters shall be used to uniquely identify the project and specific update as agreed upon by the Contractor and Contracting Officer. When utilizing scheduling software these four characters shall be used to select the project. Software manufacturers' shall verify that data importing programs do not automatically overwrite other schedules with the same PROJECT IDENTIFIER.

d. The PROJECT NAME field shall contain the name and location of the project edited to fit the space provided. The data appearing here shall appear on scheduling software reports. The abbreviation "Alpha" used throughout paragraph six, RECORD DESCRIPTIONS, refers to an Alphanumeric" field value.

e. The CONTRACTOR NAME field shall contain the Construction Contractor's name edited to fit the space provided.

f. The ARROW OR PRECEDENCE field shall indicate which method shall be used for calculation of the schedule. The value "A" shall signify the Arrow Diagramming Technique. The value "P" shall signify the Precedence Diagramming Technique. The ACTIVITY IDENTIFICATION field of the Activity Record shall be interpreted differently depending on the value of this field (see paragraph 2.10.1.6 b). The Precedence Record shall be required if the value of this field is "P" (see paragraph 2.10.1.6).

g. THE CONTRACT NUMBER field shall directly identify the contract for the project. For example, a complete Government construction contract number, "DACA41-98-C-0001" shall be entered into this field as "980001".

h. The PROJECT START shall contain the date that the project will start or has started. On Government construction projects, this date is the date that the construction contractor acknowledges the Notice to Proceed.

i. The PROJECT END shall contain the data that the contract must complete on or prior to. On Government construction projects, this date is the PROJECT START plus the contract period, typically expressed in a specific number of calendar days.

2.10.1.3 Calendar Record

The Calendar Record(s) shall follow the Project Identifier Record in every data file. A minimum of one Calendar Record shall be required for all data exchange activity files. The format for the Calendar Record shall be as follows:

Description	Column Position	Max Len.	Required. Value	Type	Just.
RECORD IDENTIFIER	1-4	4	CLDR	Fixed	
CALENDAR CODE	6-6	1	-	Alpha.	Filled
WORKDAYS	8-14	7		SMTWTFS	See (3)
CALENDAR DESCRIPTION	16-45	30		Alpha.	Left

a. The RECORD IDENTIFIER shall always begin with "CLDR" to identify it as a Calendar Record. Each Calendar Record used shall have this identification in the first four columns.

b. The CALENDAR CODE shall be used in the activity records to signify that this calendar is associated with the activity.

c. The WORKDAYS field shall contain the work week pattern selected with "Y" for Yes, and "N" for No. The first character shall be Sunday and the last character Saturday. An example of a typical five-(5) day workweek would be NYYYYYN. A seven-(7) day workweek would be YYYYYYY.

d. The CALENDAR DESCRIPTION shall be used to briefly explain the calendar used. optional Holiday Record(s) shall follow the Calendar record(s). The Holiday Record shall be used to designate specific non-work days for a specific Calendar. More than one Holiday Record may be used for a particular calendar. If used, the following format shall be followed:

Description	Column Position	Max. Len.	Required. Value	Type	Just.
RECORD IDENTIFIER	1- 4	4	HOLI	Fixed	
CALENDAR CODE	6- 6	1	-	Alpha.	Filled
HOLIDAY DATE	8- 14	7	-	ddmmmyy	Filled
HOLIDAY DATE	16- 22	7	-	ddmmmyy	Filled
HOLIDAY DATE	24- 30	7	-	ddmmmyy	Filled
HOLIDAY DATE	32- 38	7	-	ddmmmyy	Filled
HOLIDAY DATE	40- 46	7	-	ddmmmyy	Filled
HOLIDAY DATE	48- 54	7	-	ddmmmyy	Filled
HOLIDAY DATE	56- 62	7	-	ddmmmyy	Filled
HOLIDAY DATE	64- 70	7	-	ddmmmyy	Filled
HOLIDAY DATE	72- 78	7	-	ddmmmyy	Filled
HOLIDAY DATE	80- 86	7	-	ddmmmyy	Filled
HOLIDAY DATE	88- 94	7	-	ddmmmyy	Filled
HOLIDAY DATE	96- 102	7	-	ddmmmyy	Filled
HOLIDAY DATE	104- 110	7	-	ddmmmyy	Filled
HOLIDAY DATE	112- 118	7	-	ddmmmyy	Filled
HOLIDAY DATE	120- 126	7	-	ddmmmyy	Filled

a. The RECORD IDENTIFIER shall always begin with "HOLI" and shall signify an Optional Holiday Calendar is to be used.

b. The CALENDAR CODE indicates which work week calendar the holidays shall be applied to. More than one HOLI record may be used for a given CALENDAR CODE.

c. The HOLIDAY DATE is to be used for each date to be designated as a non-work day.

2.10.1.4 Activity Records

Activity Records shall follow any Holiday Record(s). If there are no Holiday Record(s), then the Activity Records shall follow the Calendar Record(s). There shall be one Activity Record for every activity in the network. Each activity shall have one record in the following format:

Description	Column Posit	Max. Len.	Required. Value	Type	Just.
RECORD IDENTIFIER	1- 4	4	ACTV	Fixed	
ACTIVITY IDENTIFICATION	6- 15	10			See(2)
ACTIVITY DESCRIPTION	17- 46	30		Alpha.	Left
ACTIVITY DURATION	48- 50	3		Integer	Right
CONSTRAINT DATE	52- 58	7		ddmmmyy	Filled
CONSTRAINT TYPE	60- 61	2			See(7)
CALENDAR CODE	63- 63	1		Alpha.	Filled
HAMMOCK CODE	65- 65	1	Y.	blank	Fixed
WORKERS PER DAY	67- 69	3		Integer	Right
RESPONSIBILITY CODE	71- 74	4		Alpha.	Left
WORK AREA CODE	76- 79	4		Alpha.	Left
MOD OR CLAIM NUMBER	81- 86	6		Alpha.	Left
BID ITEM	88- 93	6		Alpha.	Left
PHASE OF WORK	95- 96	2		Alpha.	Left
CATEGORY OF WORK	98- 98	1		Alpha.	Filled
FEATURE OF WORK	100-129	30		Alpha.	Left

a. The RECORD IDENTIFIER for each activity description record must begin with the four-character "ACTV" code. This field shall be used for both the Arrow Diagram Method (ADM) and Precedence Diagram Method (PDM) (see paragraph: Activity Records).

b. The ACTIVITY IDENTIFICATION consists of coding that differs, depending on whether the ADM or PDM method was selected in the Project Record (see paragraph: Project ID Record). If the ADM method was selected, then the field shall be interpreted as two right justified fields of five (5) integers each. If the PDM method was selected, the field shall be interpreted as one (1) right-justified field of ten (10) integers or alpha/numeric characters. The maximum activity number allowed under this arrangement is 99999 for ADM and 9999999999 for the PDM method.

c. The ACTIVITY DESCRIPTION shall be a maximum of 30 characters. Descriptions must be limited to the space provided.

d. The ACTIVITY DURATION contains the estimated duration for the activity on the schedule. The duration shall be based upon the workweek designated by the activity's related calendar. Reasonable durations are required to allow progress of activities to be accurately determined between payment periods. A rule of thumb, that the Contractor should use is less than 2 percent of all non-procurement activities Original Durations shall be greater than 22 workdays.

e. The CONSTRAINT DATE field shall be used to identify a date that the scheduling system may use to modify float calculations. If there is a date in this field, then there must be a valid entry in the CONSTRAINT TYPE field. The CONSTRAINT DATE shall be the same as, or later than, the PROJECT START DATE. The CONSTRAINT

DATE shall be the same as, or earlier than, the PROJECT END DATE.

f. The CONSTRAINT TYPE field shall be used to identify the way that the scheduling system shall use the CONSTRAINT DATE to modify schedule float calculations. If there is a value in this field, then there must be a valid entry in the CONSTRAINT DATE TYPE. Other types may be available from specific software manufacturers.

Code Definition

ES The CONSTRAINT DATE shall replace an activity's early start date, if the early start date is prior to the CONSTRAINT DATE.

LF The CONSTRAINT DATE shall replace an activity's late finish date, if the late finish date is after the CONSTRAINT DATE.

g. The CALENDAR CODE, as previously explained, relates this activity to an appropriate workweek calendar. The ACTIVITY DURATION must be based on the valid workweek referenced by this CALENDAR CODE field.

h. The HAMMOCK CODE indicates that a particular activity does not have its own independent duration, but takes its start dates from the start date of the preceding activity (or node) and takes its finish dates from the finish dates of its succeeding activity (or node). If the value of the HAMMOCK ACTIVITY field is "Y", then the activity is a HAMMOCK ACTIVITY.

i. The WORKERS PER DAY. This field may contain the average number of workers expected to work on the activity each day the activity is in progress. The total duration times the average number of workers per day shall equal the contractor's estimate of the total man days of work required to perform the activity.

j. The RESPONSIBILITY CODE shall identify the Subcontractor or major trade involved with completing the work for the activity.

k. The WORK AREA CODE shall identify the location of the activity within the project.

l. The MOD OR CLAIM NUMBER CODE shall be used to uniquely identify activities that are changed on a construction contract modification, or activities that justify any claimed time extensions.

m. The BID ITEM field shall designate the bid item number associated with the activity. The values of all the various activities shall sum to the amount stated in the Contract Bid Item Schedule.

n. The PHASE OF CONSTRUCTION shall designate the phase to which an activity is connected. This field shall be used for submittals, procurement, fabrication, site work or building or areas within a building, etc.

o. The CATEGORY OF WORK shall be from the following list:

CODE	DESCRIPTION
------	-------------

- A Architectural
- C Civil
- E Electrical
- F Fire Extinguish
- H Hazardous/Toxic
- M Mechanical
- P Plumbing
- R Roofing
- S Structural
- T Safety
- X Administrative

p. The FEATURE OF WORK shall match those in the Resident Management System that is to be used on this project. See the attached RMS data sheets listing some examples of the features of work at the end of this Section.

2.10.1.5 Precedent Record

The Precedence Record(s) shall follow the Activity Records if a Precedence Type Schedule (PDM) is identified in the ARROW OR PRECEDENCE field of the Project Record (see paragraph: Project ID Record). The Precedence Record has the following format:

Description	Column Position	Max. Len.	Required. Value	Type	Just.
RECORD IDENTIFIER	1- 4	4	PRED		Fixed
ACTIVITY IDENTIFICATION	6- 15	10	-	Integer	See (2)
PRECEDING ACTIVITY	17- 26	10	-	Integer	
PREDECESSOR TYPE	28- 28	1	S,F,C		Filled
LAG DURATION	30- 33	4	-	Integer	Right

a. The RECORD IDENTIFIER shall begin with the four characters "PRED" in the first four columns of the record.

b. The ACTIVITY IDENTIFICATION identifies the activity whose predecessor shall be specified in this record. Refer to the Activity Record for further explanation on this field (see paragraph 2.10.1.4b).

c. The PREDECESSOR ACTIVITY number is the number of an activity that precedes the activity noted in the ACTIVITY IDENTIFICATION field.

d. The PREDECESSOR TYPE field indicates the type of relationship that exists between the chosen pair of activities. The PREDECESSOR TYPE field must, as minimum, contain one of the codes listed below. Other types of activity relations may be supported from specific software vendors.

Code Definition

- S Start-to-Start relationship
- F Finish-to-Finish relationship
- C Finish-to-Start relationship

e. The LAG DURATION field contains the number of days delay

between the preceding and current activity.

2.10.1.6 Unit Cost Record

The Unit Cost Record shall follow all Precedence Records. If the schedule utilizes the Arrow Diagram Method, then the Unit Cost Record shall follow any Activity Records. The fields for this record shall take the following format:

Description	Column Position	Max. Len.	Required. Value	Type	Just.
RECORD IDENTIFIER	1-4	4	UNIT		Fixed
ACTIVITY IDENTIFICATION	6-15	10	-	Integer	See (2)
TOTAL QTY	17-29	13	-	8.4	Right
COST PER UNIT	31-43	13	-	8.4	Right
QTY TO DATE	45-57	13	-	8.4	Right
UNIT OF MEASURE	59-61	3	-	Alpha.	Left

a. The RECORD IDENTIFIER shall be identified with the four characters "UNIT" placed in the first four columns of the record.

b. The ACTIVITY IDENTIFICATION for each activity shall match the format described in the activity record (see paragraph 2.10.4b.).

c. The TOTAL QTY is the total amount of this type of material to be used in this activity. This number consists of eight digits, one decimal point, and four more digits. An example of a number in this format is "11111111.1111". If decimal places are not needed, this field shall still contain a ".0000" in columns 25, 26, 27, 28, and 29.

d. The COST PER UNIT is the cost, in dollars and cents, for each unit to be used in this activity. This number consists of eight digits, one decimal point, and four more digits. An example of a number in this format is "1111111.1111". If decimal places are not needed, this field shall still contain an ".0000" in columns 38, 39, 40, 41, and 42.

e. The QTY TO DATE is the quantity of material installed in this activity up to the data date. This number consists of eight digits, one decimal point, and four more digits. An example of a number in this format is "1111111.1111". If decimal places are not needed, this field shall still contain a ".0000" in columns 53, 54, 55, 56, and 57.

f. The UNIT OF MEASURE is an abbreviation that may be used to describe the units being measured for this activity.

2.10.1.7 Progress Record

Progress Record(s) shall follow all Unit Cost Record(s). If there are no Unit Cost Record(s), then the Progress Record(s) shall follow all Precedence Records. If the schedule utilizes the Arrow Diagram Method, then the Progress Record shall follow any Activity Records. One Record shall exist for each activity in-progress or completed. The fields for this Record shall take the following format:

Column	Max.	Required.
--------	------	-----------

Description	Position	Len.	Value	Type	Just.
RECORD IDENTIFIER	1- 4	4	PROG		Fixed
ACTIVITY IDENTIFICATION	6- 15	10	-	Integer	See(2)
ACTUAL START DATE	17- 23	7	-	ddmmyy	Full
ACTUAL FINISH DATE	25- 31	7	-	ddmmyy	Full
REMAINING DURATION	33- 35	3	-	Integer	Right
ACTIVITY COST	37- 48	12	-	9.2	Right
COST TO DATE	50- 61	12	-	9.2	Right
STORED MATERIAL	63- 74	12	-	9.2	Right
EARLY START DATE	75- 82	7	-	ddmmyy	
EARLY FINISH DATE	84- 90	7	-	ddmmyy	
LATE START DATE	92- 98	7	-	ddmmyy	
LATE FINISH DATE	100-106	7	-	ddmmyy	
FLOAT SIGN	108-108	1	+,-		Fixed
TOTAL FLOAT	110-112	3	-	Integer	Right

- a. The RECORD IDENTIFIER shall begin with the four characters "PROG" in the first four columns of the record.
- b. The ACTIVITY IDENTIFICATION for each activity for which progress has been posted, shall match the format described in the Activity Record (see paragraph 2.10.4b.).
- c. The ACTUAL START DATE is required for all in-progress activities. The ACTUAL START DATE shall be the same as, or later than, the PROJECT START DATE contained in the Project Record (see paragraph 2.10.2h.). The ACTUAL START DATE shall also be the same as, or prior to, the DATA DATE contained in the Project Record.
- d. An ACTUAL FINISH DATE is required for all completed activities. If the REMAINING DURATION of an activity is zero, then there must be an ACTUAL FINISH DATE. The ACTUAL FINISH DATE must be the same as, or later than the PROJECT START date contained in the Project Record. (See paragraph 2.10.2h.). The ACTUAL FINISH DATE must also be the same as, or prior to the DATA DATE contained in the Project Record.
- e. REMAINING DURATION is required for all in-progress activities. Activities completed, based on time, shall have a zero (0) REMAINING DURATION.
- f. Cost Progress is contained in the field COST TO DATE. If there is an ACTUAL START DATE, then there must also be some value for COST TO DATE. The COST TO DATE shall not be tied to REMAINING DURATION. For example, if the REMAINING DURATION IS "0", the COST TO DATE may only be 95% of the ACTIVITY COST. This difference may be used to reflect 5% retainage for punch list items.

2.10.1.8 File End Record

The File End Record shall be used to identify that the data file is completed. This record shall be the last record of the entire data file. The File End Record shall have the following format:

Description	Column Position	Max Len.	Required. Value	Type	Just.
RECORD IDENTIFIER	1- 33		END		Fixed

- a. The RECORD IDENTIFIER for the File End Record shall be "End". No data contained in the data exchange file that occurs after this record is found shall be used.

PART 3 EXECUTION

3.1 TRANSFER OF SCHEDULE DATA INTO RESIDENT MANAGEMENT SYSTEM

The Contractor shall also be responsible for the downloading and uploading of the schedule data into the Resident Management System (RMS) that will be used onto the subject Contract prior to the RMS databases being transferred to the Government as part of the monthly and final payment requests.

3.2 FEATURES OF WORK LISTINGS FOR RMS

The following Features of Work are to be typed as shown into the schedule as it applies to the project. The Feature of Work may have to be broken down as required in the software package selected to be used for obtaining the one 30 character field for the SDEF data exchange.

A/C SYSTEM, UNITARY TYPE
ACCESS FLOORING SYSTEM
ACOUSTICAL TREATMENT, CEILINGS
ADMINISTRATION & MOBILIZATION
ARCH FURNISHINGS, INT/EXT
ASBESTOS ABATEMENT
ASPHALT PAVING
BUILDER'S HARDWARE
BUILDING INSULATION-RIGID/BATT
CAISSONS & PILING
CARPENTRY - FINISH
CARPENTRY - ROUGH
CASEWORK
CAULKING & SEALANTS
CENTRAL REFRIGERATION SYSTEM
ACOUSTICAL TREATMENT, WALLS
COMMUNICATION SYSTEM, PREWIRE
CONCRETE CURBS, GUTTERS, S/W
CONCRETE, CAST-IN-PLACE
CONTAMINATED DEBRIS REMOVAL
CONTRACT MODIFICATIONS, ADMIN
DAMPROOFING / WATERPROOFING
DEMOLITION
DEMOUNTABLE PARTITIONS
DIESEL GENERATORS
DOORS - ACCORDIAN & PARTITION
DOORS - HOLLOW METAL & FRAMES
DOORS - REVOLVING
DOORS - SLIDING ALUMINUM
DOORS - VAULT, SECURITY
DOORS - WOOD & FRAMES
DRYWALL
EARTHWORK - AGG BASE COURSE
EARTHWORK - BORROW AND FILL
EARTHWORK - EXCAVATION
EARTHWORK - GRADING
EARTHWORK - RIPRAP

ELECTRICAL, A.T.S. & BP/ISO SW
ELECTRICAL, AERIAL
ELECTRICAL, HAZARDOUS AREAS
ELECTRICAL, INT PNLBDS & SWGR
ELECTRICAL, INTERIOR - FINISH
ELECTRICAL, INTERIOR - LT FIXT
ELECTRICAL, INTERIOR - ROUGH
ELECTRICAL, LIGHTNING PROTECTN
ELECTRICAL, PRIMRY SWGR & DIST
ELECTRICAL, UNDERGROUND
ELEVATOR SYSTEM
ENERGY MONITORING CNTRL SYSTEM
ENVIRONMENTAL PROTECTION
EVAPORATIVE COOLING SYSTEM
EXTERIOR CEMENT BOARD SYSTEM
FENCING & GATES
FINAL INSPECTION
FIRE DETECTION & ALARM SYSTEMS
FIRE SPRINKLER SYS, UNDERGRND
FIRE SPRINKLER SYS, INTERIOR
FIREPROOFING
FLOOR COVERING, CARPET
FLOOR COVERING, RESILIENT
FOOD SERVICE EQUIPMENT
FORMWORK, STRUCTURAL CONCRETE
FUEL OIL SYSTEMS
GAS PIPING SYSTEM, INTERIOR
GLASS & GLAZING
HEATING SYSTEM, HOT AIR & STM
HOT WATER HEATING SYSTEM
HTW LIQUID DISPOSAL
HTW LIQUID REMOVAL
HTW LIQUID TRANSPORTATION
HTW LIQUID TREATMENT
HTW SOIL DISPOSAL
HTW SOIL TRANSPORTATION
HTW SOIL TREATMENT
HTW SOIL REMOVAL
HVAC CONTROL SYSTEMS
HVAC DUCTWORK SYSTEM
HVAC SYSTEMS
INSTRUMENTATION
IRRIGATION SYSTEM
LABORATORY EQUIPMENT
LANDSCAPING
LATH AND PLASTERING
LATH AND STUCCO
MASONRY
METAL DECKING
METAL FRAMING
METAL STUDS
MISC METALS-CANPS, SCUT, EXP JTS
OIL/WATER SEPARATOR
PAINTING, SEALERS AND STAINS
PAVING, RIGID
PLUMBING, INTERIOR - ROUGH
PLUMBING, INTERIOR - TRIM
POL/WASTE OIL TANK
PRECAST ARCHITECTURAL CONCRETE

RADIO & PUBLIC ADDRESS SYSTEM
ROLLUP/COILING, SHTRS/DRS/GRLS
ROOFING, BUILT-UP
ROOFING, METAL
SALVAGE
SEISMIC PROT FOR MECH & ELECT
SHEETMETAL WORK, ARCHITECTURAL
SIGNAGE, EXTERIOR
SIGNAGE, INTERIOR
SOIL REMEDIATION
SOIL TREATMENT
STEEL JOISTS
STRUCTURAL STEEL
SYSTEMS FURNITURE
TANK REMOVAL, ABOVE-GROUND
TANK REMOVAL, UNDERGROUND
TELEPHONE SYSTEM, EXTERIOR
TELEPHONE SYSTEM, INTERIOR
TEST AND BALANCE, AIR & WATER
THERMAL INSULATION, MECH SYS
THERMAL INSULATION, PIPING SYS
TILE, CERAMIC
TILE, QUARRY
TILE, TERRAZZO
TOILET PARTITIONS/ACCESSORIES
U.G. SITE - GAS
U.G. SITE - SEWER
U.G. SITE - STORM
U.G. SITE - WATER
WALL COVERINGS
WATER TREATMENT EQUIP & SYSTEM
WELLS, EXTRACTION
WELLS, MONITORING
WELLS, WATER
WINDOW WALLS AND DOORS
WINDOWS
WINDOW COVERINGS
X-RAY SHIELDING
FIRESTOPPING
EARTHWORK - CLEARING & GRUBBNG
HOISTS AND CRANES
U.G. SITE - MECHANICAL
LEAD ABATEMENT
PLAYGROUND SAFETY SURFACING
PLAYGROUND EQUIPMENT
FOUNDATION PREPARATION
EXCAVATION (UTILITIES)
EARTHWORK-EXCAVATION TRENCHING
EXT/INT STEEL STUDS & DRYWALL

-- End of Section --

SECTION 01330

SUBMITTAL PROCEDURES – DESIGN-BUILD

PART 1 GENERAL

1.1 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.1.1 Designer of Record Approved

Designer of Record approval is required for extensions of design, critical materials, any deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings." The Contractor shall provide the Government the number of copies designated hereinafter of all Designer of Record approved submittals. The Government may review any or all Designer of Record approved submittals for conformance to the Solicitation and Accepted Proposal. The Government will review all submittals designated as deviating from the Solicitation or Accepted Proposal, as described below.

1.1.2 Government Approved Construction Submittals

Administrative Contracting Officer approval is required for any deviations from the Solicitation or Accepted Proposal and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.1.3 Government Reviewed Extension of Design

Governmental review is required for extension of design construction submittals, used to define contract conformity, and for deviation from the completed design. Review will be only for conformance with contract requirements. Included are only those construction submittals for which the Designer of Record design documents do not include enough detail to ascertain contract compliance. Government review is not required for extensions of design such as structural steel or reinforcement shop drawings.

1.1.4 Information Only

All submittals not requiring Designer of Record or 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 GOVERNMENT REVIEW OR "APPROVED" SUBMITTALS

The Contracting Officer's Representative conformance review or approval of submittals shall not be construed as a complete check, but will indicate only that the design, general method of construction, materials, detailing and other information appear to meet the Solicitation and Accepted Proposal. Government review or approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Design and CQC requirements of this contract is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of all work. After submittals have been reviewed for conformance or approved, as applicable, by the Contracting Officer's Representative, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a

substitution is necessary.

1.3 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer's Representative, obtain the Designer of Record's approval, when applicable, and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. Any "information only" submittal found to contain errors or unapproved deviations from the Solicitation or Accepted Proposal shall be resubmitted as one requiring "approval" action, requiring both Designer of Record and Government approval. If the Contractor considers any correction indicated by the Government on the submittals to constitute a change to the contract, it shall promptly provide a notice in accordance with the Contract Clause "Changes" to the Contracting Officer's Representative. **CAUTION:** The Contractor is cautioned that for each Contractor's resubmittal required beyond the initial submittal and one resubmittal for corrections required by the Contracting Officer, the Contracting Officer will assess Administrative Deduction in the amount of \$500.00 from the progress payments due the Contractor.

1.4 WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made if all required Designer of Record or required Government approvals have not been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.5 DEFINITIONS OF SUBMITTALS

SD-01 Data

Submittals which provide calculations, descriptions, or documentation regarding the work.

SD-04 Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

SD-06 Instructions

Preprinted material describing installation of a product, system or material, including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions. Operation and maintenance manuals are considered deliverables under the contract and not submittals; however, when necessary to review information to be included in the final manuals such information should be called for under this submittal description.

SD-07 Schedules

Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

SD-08 Statements

A document, required of the Contractor, or through the Contractor, from a supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

SD-09 Reports

Reports of inspections or tests, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used shall be identified and test results shall be recorded.

SD-13 Certificates

Statement signed by an official authorized to certify on behalf of the manufacturer of a product, system or material, attesting that the product, system or material meets specified requirements. The statement must be dated after the award of the contract, must state the Contractor's name and address, must name the project and location, and must list the specific requirements which are being certified.

SD-14 Samples

Samples, including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.

SD-18 Records

Documentation to record compliance with technical or administrative requirements.

SD-19 Operation and Maintenance Manuals

Data which forms a part of an operation and maintenance manual..

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

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

3.1.1 Design Submittals

Not used.

3.2 SUBMITTAL REGISTER (ENG FORM 4288)

The Contractor's Designer(s) of Record shall develop a complete list of submittals during design. The Designer of Record shall identify required submittals in the specifications. Use the list to prepare ENG

Form 4288 Submittal Register or a computerized equivalent. The list may not be all inclusive and additional submittals may be required by other parts of the contract. The Contractor is required to complete ENG Form 4288 (including columns "a" through "r") and submit to the contracting Officer for approval within thirty (30) calendar days after Notice to Proceed. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the life of the contract. The submit dates and need dates used in the submittal register shall be coordinated with dates in the Contractor prepared progress schedule. Updates to the submittal register showing the Contractor action codes and actual dates with Government action codes and actual dates shall be submitted monthly or until all submittals have been satisfactorily completed. When the progress schedule is revised, the submittal register shall also be revised and both submitted for approval.

3.3 SCHEDULING

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

3.4 TRANSMITTAL FORM (ENG Form 4025)

The transmittal form (ENG Form 4025) shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. This form will be furnished to the Contractor. ENG Form 4025 shall identify each item submitted by completing Section I. Special care will be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

3.5.1 Procedures

The Contractor shall submit for approval five (5) copies of all submittals. The mailing address for these submittals shall be obtained at the preconstruction conference. Items not to be submitted in quintuplicate, such as samples and test cylinders, shall be submitted accompanied by five (5) copies of ENG Form 4025.

3.5.2 Deviations

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

3.6 CONTROL OF SUBMITTALS

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

3.7 GOVERNMENT CONFORMANCE REVIEW AND APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Four (4) copies of the submittal will be retained

by the Contracting Officer and one (1) copy of the submittal will be returned to the Contractor. If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be so identified and returned, as described above.

3.8 INFORMATION ONLY SUBMITTALS

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

3.9 STAMPS

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

<p>CONTRACTOR (Firm Name)</p> <p>_____ Approved _____ Approved with corrections as noted on the submittal data and/or attached sheets.</p> <p>SIGNATURE: _____</p> <p>TITLE: <u>(DESIGNER OF RECORD)</u> _____</p> <p>DATE: _____</p>

(End of Section)

<p>CONTRACTOR (Firm Name)</p> <p>_____ Approved _____ Approved with corrections as noted on submittal data and/or attached sheet(s).</p> <p>SIGNATURE: _____</p> <p>TITLE: _____</p> <p>DATE: _____</p>
--

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

- | | |
|---|---|
| A -- Approved as submitted. | E -- Disapproved (See attached). |
| B -- Approved, except as noted on drawings. | F -- Receipt acknowledged. |
| C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required. | FX -- Receipt acknowledged, does not comply
as noted with contract requirements. |
| D -- Will be returned by separate correspondence. | G -- Other (<i>Specify</i>) |
10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

**ROUTING OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES
OF COMPLIANCE FOR APPROVAL**

(Used to route ENG Form 4025 with items attached. Not to become a part of the Contractor's record.)

1	TO:	FROM:	DATE
The attached items listed on ENG Form 4025 are forwarded for approval action.			
CONTRACT NUMBER		CONTRACTOR	
TRANSMITTAL NUMBER		PROJECT TITLE AND LOCATION	
COMMENTS <i>(Attach additional sheet, if necessary.)</i>			
NO. OF ENCL.	TYPED NAME AND TITLE	SIGNATURE	
2	TO:	FROM:	DATE
COMMENTS <i>(Attach additional sheet, if necessary.)</i>			
NO. OF ENCL.	TYPED NAME AND TITLE	SIGNATURE	
3	TO:	FROM:	DATE
COMMENTS <i>(Attach additional sheet, if necessary.)</i>			
NO. OF ENCL.	TYPED NAME AND TITLE	SIGNATURE	
4	TO:	FROM:	DATE
The following action codes are given to items listed on ENG Form 4025.			
ACTIONS CODES A - APPROVED AS SUBMITTED. B - APPROVED, EXCEPT AS NOTED ON DRAWINGS. RESUBMISSION NOT REQUIRED. C - APPROVED, EXCEPT AS NOTED ON DRAWINGS.		D - WILL BE RETURNED BY SEPARATE CORRESPONDENCE. E - DISAPPROVED <i>(SEE ATTACHED)</i> F - RECEIPT ACKNOWLEDGED G - OTHER <i>(specify)</i>	
ACTION CODES TO BE INSERTED IN COLUMN G, SECTION I, ENG FORM 4025 <i>(Attach sheets, when required.)</i>			
ITEM NO. <i>(Taken from ENG Form 4025)</i>			
CODE GIVEN			
REMARKS			
NO. OF ENCL.	TYPED NAME AND TITLE	SIGNATURE	

SECTION 01356A

STORM WATER POLLUTION PREVENTION MEASURES
08/96

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 4439	(1997) Standard Terminology for Geosynthetics
ASTM D 4491	(1996) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996)) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1995) Determining Apparent Opening Size of a Geotextile
ASTM D 4873	(1995) Identification, Storage, and Handling of Geosynthetic Rolls

1.2 GENERAL

The Contractor shall implement the storm water pollution prevention measures specified in this section in a manner which will meet the requirements of Section 01410 ENVIRONMENTAL PROTECTION, and the requirements of the National Pollution Discharge Elimination System (NPDES) permit attached to that Section.

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-07 Certificates

Mill Certificate or Affidavit; G-RE

Certificate attesting that the Contractor has met all specified requirements.

1.4 EROSION AND SEDIMENT CONTROLS

The controls and measures required by the Contractor are described below.

1.4.1 Stabilization Practices

The stabilization practices to be implemented shall include temporary seeding,. On his daily CQC Report, the Contractor shall record the dates when the major grading activities occur, (e.g., clearing and grubbing, excavation, embankment, and grading); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. Except as provided in paragraphs UNSUITABLE CONDITIONS and NO ACTIVITY FOR LESS THAN 21 DAYS, stabilization practices shall be initiated as soon as practicable, but no more than 14 days, in any portion of the site where construction activities have permanently ceased.

1.4.1.1 Unsuitable Conditions

Where the initiation of stabilization measures by the fourteenth day after construction activity permanently ceases is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable after conditions become suitable.

1.4.1.2 No Activity for Less Than 21 Days

Where construction activity will resume on a portion of the site within 21 days from when activities ceased (e.g., the total time period that construction activity is temporarily ceased is less than 21 days), then stabilization practices do not have to be initiated on that portion of the site by the fourteenth day after construction activity temporarily ceased.

1.4.2 Structural Practices

Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Structural practices shall include the following devices.

1.4.2.1 Silt Fences

The Contractor shall provide silt fences as a temporary structural practice to minimize erosion and sediment runoff. Silt fences shall be properly installed to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g. clearing and grubbing, excavation, embankment, and grading). Silt fences shall be installed in the locations indicated on the drawings. Final removal of silt fence barriers shall be upon approval by the Contracting Officer.

1.4.2.2 Straw Bales

The Contractor shall provide bales of straw as a temporary structural practice to minimize erosion and sediment runoff. Bales shall be properly placed to effectively retain sediment immediately after completing each phase of work (e.g., clearing and grubbing, excavation, embankment, and grading) in each independent runoff area (e.g., after clearing and grubbing in a area between a ridge and drain, bales shall be placed as work

progresses, bales shall be removed/replaced/relocated as needed for work to progress in the drainage area). Areas where straw bales are to be used are shown on the drawings. Final removal of straw bale barriers shall be upon approval by the Contracting Officer. Rows of bales of straw shall be provided as follows:

- a. Along the downhill perimeter edge of all areas disturbed.
- b. Along the top of the slope or top bank of drainage ditches, channels, swales, etc. that traverse disturbed areas.
- c. Along the toe of all cut slopes and fill slopes of the construction areas.
- d. Perpendicular to the flow in the bottom of existing drainage ditches, channels, swales, etc. that traverse disturbed areas or carry runoff from disturbed areas. Rows shall be spaced as shown on the drawings.
- e. Perpendicular to the flow in the bottom of new drainage ditches, channels, and swales. Rows shall be spaced as shown on the drawings.
- f. At the entrance to culverts that receive runoff from disturbed areas.

PART 2 PRODUCTS

2.1 COMPONENTS FOR SILT FENCES

2.1.1 Filter Fabric

The geotextile shall comply with the requirements of ASTM D 4439, and shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. The filament shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of ester, propylene, or amide, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistance to deterioration due to ultraviolet and heat exposure. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 to 120 degrees F. The filter fabric shall meet the following requirements:

FILTER FABRIC FOR SILT SCREEN FENCE

PHYSICAL PROPERTY	TEST PROCEDURE	STRENGTH REQUIREMENT
Grab Tensile	ASTM D 4632	100 lbs. min.
Elongation (%)		30 % max.
Trapezoid Tear	ASTM D 4533	55 lbs. min.
Permittivity	ASTM D 4491	0.2 sec-1
AOS (U.S. Std Sieve)	ASTM D 4751	20-100

2.1.2 Silt Fence Stakes and Posts

The Contractor may use either wooden stakes or steel posts for fence

construction. Wooden stakes utilized for silt fence construction, shall have a minimum cross section of 2 inches by 2 inches when oak is used and 4 inches by 4 inches when pine is used, and shall have a minimum length of 5 feet. Steel posts (standard "U" or "T" section) utilized for silt fence construction, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 5 feet.

2.1.3 Mill Certificate or Affidavit

A mill certificate or affidavit shall be provided attesting that the fabric and factory seams meet chemical, physical, and manufacturing requirements specified above. The mill certificate or affidavit shall specify the actual Minimum Average Roll Values and shall identify the fabric supplied by roll identification numbers. The Contractor shall submit a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the filter fabric.

2.1.4 Identification Storage and Handling

Filter fabric shall be identified, stored and handled in accordance with ASTM D 4873.

2.2 COMPONENTS FOR STRAW BALES

The straw in the bales shall be stalks from oats, wheat, rye, barley, rice, or from grasses such as byhalia, bermuda, etc., furnished in air dry condition. The bales shall have a standard cross section of 14 inches by 18 inches. All bales shall be either wire-bound or string-tied. The Contractor may use either wooden stakes or steel posts to secure the straw bales to the ground. Wooden stakes utilized for this purpose, shall have a minimum dimensions of 2 inches x 2 inches in cross section and shall have a minimum length of 3 feet. Steel posts (standard "U" or "T" section) utilized for securing straw bales, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 3 feet.

PART 3 EXECUTION

3.1 INSTALLATION OF SILT FENCES

Silt fences shall extend a minimum of 16 inches above the ground surface and shall not exceed 34 inches above the ground surface. Filter fabric shall be from a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter fabric shall be spliced together at a support post, with a minimum 6 inch overlap, and securely sealed. A trench shall be excavated approximately 4 inches wide and 4 inches deep on the upslope side of the location of the silt fence. The 4-inch by 4-inch trench shall be backfilled and the soil compacted over the filter fabric. Silt fences shall be removed upon approval by the Contracting Officer.

3.2 INSTALLATION OF STRAW BALES

Straw bales shall be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another. Straw bales shall be installed so that bindings are oriented around the sides rather than along the tops and bottoms of the bales in order to prevent deterioration of the bindings. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After the bales

are staked and chinked (gaps filled by wedging with straw), the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill side and shall be built up to 4 inches against the uphill side of the barrier. Loose straw shall be scattered over the area immediately uphill from a straw bale barrier to increase barrier efficiency. Each bale shall be securely anchored by at least two stakes driven through the bale. The first stake or steel post in each bale shall be driven toward the previously laid bale to force the bales together. Stakes or steel pickets shall be driven a minimum 18 inches deep into the ground to securely anchor the bales.

3.3 MAINTENANCE

The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. The following procedures shall be followed to maintain the protective measures.

3.3.1 Silt Fence Maintenance

Silt fences shall be inspected in accordance with paragraph INSPECTIONS. Any required repairs shall be made promptly. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. When a silt fence is no longer required, it shall be removed. The immediate area occupied by the fence and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in accordance with Section TURF.

3.3.2 Straw Bale Maintenance

Straw bale barriers shall be inspected in accordance with paragraph INSPECTIONS. Close attention shall be paid to the repair of damaged bales, end runs and undercutting beneath bales. Necessary repairs to barriers or replacement of bales shall be accomplished promptly. Sediment deposits shall be removed when deposits reach one-half of the height of the barrier. Bale rows used to retain sediment shall be turned uphill at each end of each row. When a straw bale barrier is no longer required, it shall be removed. The immediate area occupied by the bales and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in accordance with Section TURF.

3.3.3 Diversion Dike Maintenance

Diversion dikes shall be inspected in accordance with paragraph INSPECTIONS. Close attention shall be paid to the repair of damaged diversion dikes and necessary repairs shall be accomplished promptly. When diversion dikes are no longer required, they shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in accordance with Section TURF.

3.4 INSPECTIONS

3.4.1 General

The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every month.

3.4.2 Inspections Details

Disturbed areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Storm Water Pollution Prevention Plan shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.

3.4.3 Inspection Reports

For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan, maintenance performed, and actions taken. The report shall be furnished to the Contracting Officer within 24 hours of the inspection as a part of the Contractor's daily CQC REPORT. A copy of the inspection report shall be maintained on the job site.

-- End of Section --

SECTION 01410

ENVIRONMENT PROTECTION
02/97

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

The Contractor shall perform the work minimizing environmental pollution and damage as the result of construction operations. 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 utility of the environment for aesthetic, cultural and/or historical purposes. The control of environmental pollution and damage requires consideration of land, water, and air, and includes management of visual aesthetics, noise, and solid waste, as well as other pollutants. 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.

1.1.1 Subcontractors

The Contractor shall ensure compliance with this section by subcontractors.

1.1.2 Environmental Protection Plan

The Contractor shall submit an environmental protection plan within 20 days after receipt of the notice to proceed. Approval of the Contractor's plan will not relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures. The environmental protection plan shall include, but shall not be limited to, the following:

- a. A list of Federal, State, and local laws, regulations, and permits concerning environmental protection, pollution control and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those laws, regulations, and permits.
- b. Methods for protection of features to be preserved within authorized work areas like trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archaeological, and cultural resources.
- c. Procedures to be implemented to provide the required environmental protection, to comply with the applicable laws and regulations, and to correct pollution due to accident, natural causes, or failure to follow the procedures of the environmental protection plan.
- d. Permit or license and location of the solid waste disposal area.
- e. Drawings showing locations of any proposed temporary excavations

or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.

- f. Environmental monitoring plans for the job site, including land, water, air, and noise monitoring.
- g. Traffic control plan including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather, and the amount of mud transported onto paved public roads by vehicles or runoff.
- h. Methods of protecting surface and ground water during construction activities.
- i. Plan showing the proposed activity in each portion of the work area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas.
- j. Drawing of borrow area location. Protection measures required at the work site shall apply to the borrow areas including final restoration for subsequent beneficial use of the land.
- k. A recycling and waste prevention plan with a list of measures to reduce consumption of energy and natural resources; for example: the possibility to shred fallen trees and use them as mulch shall be considered as an alternative to burning or burial.
- l. A settling pond removal plan 120 days prior to removal work. The plan shall include the method of removing and testing of the collected sediment.
- m. Training for Contractor's personnel during the construction period.

1.1.3 Permits

The Contractor shall obtain all needed permits or licenses. The Government will not obtain any permits for this project; see Contract Clause PERMITS AND RESPONSIBILITIES.

1.1.4 Preconstruction Survey

Prior to starting any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey after which the Contractor shall prepare a brief report indicating on a layout plan the condition of trees, shrubs and grassed areas immediately adjacent to work sites and adjacent to the assigned storage area and access routes as applicable. This report will be signed by both the Contracting Officer and the Contractor upon mutual agreement as to its accuracy and completeness.

1.1.5 Meetings

The Contractor shall meet with representatives of the Contracting Officer to alter the environmental protection plan as needed for compliance with the environmental pollution control program.

1.1.6 Notification

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.

1.1.7 Litigation

If work is suspended, delayed, or interrupted due to a court order of competent jurisdiction, the Contracting Officer will determine whether the order is due in any part to the acts or omissions of the Contractor, or subcontractors at any tier, not required by the terms of the contract. If it is determined that the order is not due to Contractor's failing, such suspension, delay, or interruption shall be considered as ordered by the Contracting Officer in the administration of the contract under the contract clause SUSPENSION OF WORK.

1.1.8 Previously Used Equipment

The Contractor shall thoroughly clean all construction equipment previously used at other sites before it is brought into the work areas, ensuring that soil residuals are removed and that egg deposits from plant pests are not present; the Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

1.1.9 Payment

No separate payment will be made for work covered under this section; all costs associated with this section shall be included in the contract unit and/or lump sum prices in the Bidding Schedule.

1.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify the land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without permission. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, earth or other material displaced into uncleared areas shall be removed.

1.2.1 Work Area Limits

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

particular objects.

1.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques.

1.2.3 Unprotected Erodible Soils

Earthwork brought to final grade shall be finished as indicated. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in cases where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the developed areas as approved by the Contracting Officer.

1.2.4 Disturbed Areas

The Contractor shall effectively prevent erosion and control sedimentation through approved methods including, but not limited to, the following:

- a. Retardation and control of runoff. Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, berms, and by any measures required by area wide plans under the Clean Water Act.
- b. Erosion and sedimentation control devices. The Contractor shall construct or install temporary and permanent erosion and sedimentation control features as indicated on the drawings. Berms, dikes, drains, sedimentation basins, grassing, and mulching shall be maintained until permanent drainage and erosion control facilities are completed and operative.
- c. Sediment basins. Sediment from construction areas shall be trapped in temporary or permanent sediment basins in accordance with the drawings. The basins shall accommodate the runoff of a local 5 year storm. After each storm, the basins shall be pumped dry and accumulated sediment shall be removed to maintain basin effectiveness. Overflow shall be controlled by paved weirs or by vertical overflow pipes. The collected topsoil sediment shall be reused for fill on the construction site, and/or stockpiled for use at another site. The Contractor shall institute effluent quality monitoring programs as required by State and local environmental agencies.

1.2.5 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Borrow areas shall be managed to minimize erosion and to prevent sediment from entering nearby waters. Spoil areas shall be managed and controlled to limit spoil intrusion into areas designated on the drawings and to prevent erosion of soil or sediment from

entering nearby waters. Spoil areas shall be developed in accordance with the grading plan indicated on the drawings. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas from despoilment.

1.3 WATER RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation when such application may cause contamination of the fresh water reserve. Monitoring of water areas affected by construction shall be the Contractor's responsibility. All water areas affected by construction activities shall be monitored by the Contractor.

1.3.1 Washing and Curing Water

Waste waters directly derived from construction activities shall not be allowed to enter water areas. Waste waters shall be collected and placed in retention ponds where suspended material can be settled out or the water evaporates to separate pollutants from the water. Analysis shall be performed and results reviewed and approved before water in retention ponds is discharged.

1.3.2 Cofferdam and Diversion Operations

Construction operations for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure shall be controlled at all times to limit the impact of water turbidity on the habitat for wildlife and on water quality for downstream use.

1.3.3 Stream Crossings

Stream crossings shall allow movement of materials or equipment without violating water pollution control standards of the Federal, State or local government.

1.3.4 Fish and Wildlife

The Contractor shall minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed by the Contractor prior to beginning of construction operations.

1.4 AIR RESOURCES

Equipment operation and activities or processes performed by the Contractor in accomplishing the specified construction shall be in accordance with Kansas Department of Health and Environment (KDHE) rules and all Federal emission and performance laws and standards. Ambient Air Quality Standards set by the Environmental Protection Agency shall be maintained. Monitoring of air quality shall be the Contractor's responsibility. All air areas affected by the construction activities shall be monitored by the Contractor. Monitoring results will be periodically reviewed by the Government to ensure compliance.

1.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction

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

1.4.2 Hydrocarbons and Carbon Monoxide

Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.

1.4.3 Odors

Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

1.4.4 Sound Intrusions

The Contractor shall use methods and devices to control noise emitted by equipment.

1.5 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area will be so designated by the Contracting Officer if any has been identified. The Contractor shall take precautions to preserve all such resources as they existed at the time they were first pointed out.

The Contractor shall provide and install protection for these resources and be responsible for their preservation during the life of the contract. If during excavation or other construction activities any previously unidentified or unanticipated resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rocks or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer. While waiting for instructions the Contractor shall record, report, and preserve the finds.

1.6 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction.

1.7 RESTORATION OF LANDSCAPE DAMAGE

The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work areas.

1.8 MAINTENANCE OF POLLUTION FACILITIES

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

1.9 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental pollution control.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

SECTION 01415

METRIC MEASUREMENTS
09/01

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 E 380	(1993) Practice for Use of the International System of Units (SI)
ASTM E 621	(1994; R 1999e1) Practice for Use of Metric (SI) Units in Building Design and Construction

1.2 GENERAL

This project includes metric units of measurements. The metric units used are the International System of Units (SI) developed and maintained by the General Conference on Weights and Measures (CGPM); the name International System of Units and the international abbreviation SI were adopted by the 11th CGPM in 1960. A number of circumstances require that both metric SI units and English inch-pound (I-P) units be included in a section of the specifications. When both metric and I-P measurements are included, the section may contain measurements for products that are manufactured to I-P dimensions and then expressed in mathematically converted metric value (soft metric) or, it may contain measurements for products that are manufactured to an industry recognized rounded metric (hard metric) dimensions but are allowed to be substituted by I-P products to comply with the law. Dual measurements are also included to indicate industry and/or Government standards, test values or other controlling factors, such as the code requirements where I-P values are needed for clarity or to trace back to the referenced standards, test values or codes.

1.3 USE OF MEASUREMENTS

Measurements shall be either in SI or I-P units as indicated, except for soft metric measurements or as otherwise authorized. When only SI or I-P measurements are specified for a product, the product shall be procured in the specified units (SI or I-P) unless otherwise authorized by the Contracting Officer. The Contractor shall be responsible for all associated labor and materials when authorized to substitute one system of units for another and for the final assembly and performance of the specified work and/or products.

1.3.1 Hard Metric

A hard metric measurement is indicated by an SI value with no expressed correlation to an I-P value. Hard metric measurements are often used for field data such as distance from one point to another or distance above the floor. Products are considered to be hard metric when they are manufactured to metric dimensions or have an industry recognized metric

designation.

1.3.2 Soft Metric

- a. A soft metric measurement is indicated by an SI value which is a mathematical conversion of the I-P value shown in parentheses (e.g. 38.1 mm (1-1/2 inches)). Soft metric measurements are used for measurements pertaining to products, test values, and other situations where the I-P units are the standard for manufacture, verification, or other controlling factor. The I-P value shall govern while the metric measurement is provided for information.
- b. A soft metric measurement is also indicated for products that are manufactured in industry designated metric dimensions but are required by law to allow substitute I-P products. These measurements are indicated by a manufacturing hard metric product dimension followed by the substitute I-P equivalent value in parentheses (e.g., 190 x 190 x 390 mm (7-5/8 x 7-5/8 x 15-5/8 inches)).

1.3.3 Neutral

A neutral measurement is indicated by an identifier which has no expressed relation to either an SI or an I-P value (e.g., American Wire Gage (AWG) which indicates thickness but in itself is neither SI nor I-P).

1.4 COORDINATION

Discrepancies, such as mismatches or product unavailability, arising from use of both metric and non-metric measurements and discrepancies between the measurements in the specifications and the measurements in the drawings shall be brought to the attention of the Contracting Officer for resolution.

1.5 RELATIONSHIP TO SUBMITTALS

Submittals for Government approval or for information only shall cover the SI or I-P products actually being furnished for the project. The Contractor shall submit the required drawings and calculations in the same units used in the contract documents describing the product or requirement unless otherwise instructed or approved. The Contractor shall use ASTM E 380 and ASTM E 621 as the basis for establishing metric measurements required to be used in submittals.

-- End of Section --

SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS
12/01

PART 1 GENERAL

1.1 REFERENCES

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

1.2 ORDERING INFORMATION

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

ACI INTERNATIONAL (ACI)
P.O. Box 9094
Farmington Hills, MI 48333-9094
Ph: 248-848-3700
Fax: 248-848-3701
Internet: <http://www.aci-int.org>
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LOK 2/01

AIR CONDITIONING AND REFRIGERATION INSTITUTE (ARI)
4301 North Fairfax Dr., Suite 425
ATTN: Pubs Dept.
Arlington, VA 22203
Ph: 703-524-8800
Fax: 703-528-3816
E-mail: ari@ari.org
Internet: <http://www.ari.org>
AOK 5/01
LOK 2/01

AIR CONDITIONING CONTRACTORS OF AMERICA (ACCA)
2800 Shirlington Road, Suite 300
Arlington, VA 22206
Ph: 703-575-4477
FAX: 703-575-4449
Internet: <http://www.acca.org>
AOK 5/01
LOK 6/00

AIR DIFFUSION COUNCIL (ADC)
104 So. Michigan Ave., No. 1500
Chicago, IL 60603
Ph: 312-201-0101
Fax: 312-201-0214
Internet: <http://www.flexibleduct.org>
AOK 5/01
LOK 6/00

AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA)
30 W. University Dr.
Arlington Heights, IL 60004-1893
Ph: 847-394-0150
Fax: 847-253-0088
Internet: <http://www.amca.org>
AOK 5/01
LOK 2/01

ALUMINUM ASSOCIATION (AA)

900 19th Street N.W.
Washington, DC 20006
Ph: 202-862-5100
Fax: 202-862-5164
Internet: <http://www.aluminum.org>
AOK 5/01
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AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
1827 Walden Ofc. Sq.
Suite 104
Schaumburg, IL 60173-4268
Ph: 847-303-5664
Fax: 847-303-5774
Internet: <http://www.aamanet.org>
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LOK 2/01

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)
444 N. Capital St., NW, Suite 249
Washington, DC 20001
Ph: 800-231-3475 202-624-5800
Fax: 800-525-5562 202-624-5806
Internet: <http://www.transportation.org>
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AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)
P.O. Box 12215
Research Triangle Park, NC 27709-2215
Ph: 919-549-8141
Fax: 919-549-8933
Internet: <http://www.aatcc.org>
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AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)
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Washington, DC 20036
Ph: 202-429-5155
Fax: 202-828-6042
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AMERICAN BOILER MANUFACTURERS ASSOCIATION (ABMA)
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Fax: 703-522-2665
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AMERICAN CONCRETE PIPE ASSOCIATION (ACPA)
222 West Las Colinas Blvd., Suite 641
Irving, TX 75039-5423
Ph: 972-506-7216
Fax: 972-506-7682
Internet: <http://www.concrete-pipe.org>
e-mail: info@concrete-pipe.org
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AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)
1330 Kemper Meadow Dr.
Suite 600
Cincinnati, OH 45240
Ph: 513-742-2020
Fax: 513-742-3355
Internet: <http://www.acgih.org>
E-mail: pubs@acgih.org
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AMERICAN FOREST & PAPER ASSOCIATION (AF&PA)
American Wood Council
ATTN: Publications Dept.
1111 Nineteenth St. NW, Suite 800
Washington, DC 20036
Ph: 800-294-2372 or 202-463-2700
Fax: 202-463-2471
Internet: <http://www.forestprod.org/awc/>
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Fax: 202-824-7115
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Alexandria, VA 22314-2730
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Fax: 703-684-0242
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AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
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Publications: 800-644-2400
Fax: 312-670-5403
Internet: <http://www.aisc.org>
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AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC)
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Englewood, CO 80112
Ph: 303-792-9559
Fax: 303-792-0669
Internet: <http://www.aitc-glulam.org>
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AMERICAN IRON AND STEEL INSTITUTE (AISI)
1101 17th St., NW Suite 1300
Washington, DC 20036
Ph: 202-452-7100
Internet: <http://www.steel.org>
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AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
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Washington, DC 20036
Ph: 202-293-8020
Fax: 202-293-9287
Internet: <http://www.ansi.org/>

Note: Documents beginning with the letter "S" can be ordered from:

Acoustical Society of America
Standards and Publications Fulfillment Center
P. O. Box 1020
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Ph: 412-741-1979
Fax: 412-741-0609
Internet: <http://asa.aip.or>

General e-mail: asa@aip.org
Publications e-mail: asapubs@abdintl.com
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AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA)
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AMERICAN PETROLEUM INSTITUTE (API)
1220 L St., NW
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Fax: 202-682-8223
Internet: <http://www.api.org>
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AMERICAN PUBLIC HEALTH ASSOCIATION (APHA)
800 I Street, NW
Washington, DC 20001
PH: 202-777-2742
FAX: 202-777-2534
Internet: <http://www.apha.org>
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AMERICAN RAILWAY ENGINEERING & MAINTENANCE-OF-WAY ASSOCIATION
(AREMA)
8201 Corporate Dr., Suite 1125
Landover, MD 20785-2230
Ph: 301-459-3200
Fax: 301-459-8077
Internet: <http://www.arena.org>
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AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)
1711 Arlingate Lane
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Columbus, OH 43228-0518
Ph: 800-222-2768
Fax: 614-274-6899
Internet: <http://www.asnt.org>
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AMERICAN SOCIETY FOR QUALITY (ASQ)
600 North Plankinton Avenue
Milwaukee, WI 53202-3005
Ph: 800-248-1946
Fax: 414-272-1734
Internet: <http://www.asq.org>
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AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
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West Conshohocken, PA 19428-2959
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Fax: 610-832-9555
Internet: <http://www.astm.org>
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AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
1801 Alexander Bell Drive
Reston, VA 20191-4400
Ph: 703-295-6300 - 800-548-2723
Fax: 703-295-6222
Internet: <http://www.asce.org>
e-mail: marketing@asce.org
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AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS (ASHRAE)
1791 Tullie Circle, NE
Atlanta, GA 30329
Ph: 800-527-4723 or 404-636-8400
Fax: 404-321-5478
Internet: <http://www.ashrae.org>
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AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)
901 Canterbury, Suite A
Westlake, OH 44145
Ph: 440-835-3040
Fax: 440-835-3488
E-mail: asse@ix.netcom.com
Internet: <http://www.asse-plumbing.org>
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AMERICAN WATER WORKS ASSOCIATION(AWWA)
6666 West Quincy
Denver, CO 80235
Ph: 800-926-7337 - 303-794-7711
Fax: 303-794-7310
Internet: <http://www.awwa.org>
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AMERICAN WELDING SOCIETY (AWS)
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Miami, FL 33126
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Fax: 305-443-7559
Internet: <http://www.amweld.org>
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AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)
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Grandbury, TX 76049-0690
Ph: 817-326-6300
Fax: 817-326-6306
Internet: <http://www.awpa.com>
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APA - THE ENGINEERED WOOD ASSOCIATION (APA)
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Tacoma, WA 98411-0700
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Internet: <http://www.apawood.org>
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Washington, DC 20004-1111
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FAX: 202-272-5447
Internet: <http://www.access-board.gov>
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ARCHITECTURAL WOODWORK INSTITUTE (AWI)
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Reston, VA 20190
Ph: 703-733-0600
Fax: 703-733-0584
Internet: <http://www.awinet.org>
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ASBESTOS CEMENT PIPE PRODUCERS ASSOCIATION (ACPPA)
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Arlington, VA 22202
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Fax: 514-861-1152
Internet: None
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Novelty, OH 44072-9901
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Ph: 212-591-7722
Fax: 212-591-7674
Internet: <http://www.asme.org>
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ASPHALT INSTITUTE (AI)
Research Park Dr.
P.O. Box 14052
Lexington, KY 40512-4052
Ph: 859-288-4960
Fax: 859-288-4999
Internet: <http://www.asphaltinstitute.org>
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ASSOCIATED AIR BALANCE COUNCIL (AABC)
1518 K St., NW, Suite 503
Washington, DC 20005
Ph: 202-737-0202
Fax: 202-638-4833
Internet: <http://www.aabchq.com>
E-mail: aabchq@aol.com
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ASSOCIATION FOR THE ADVANCEMENT OF MEDICAL INSTRUMENTATION (AAMI)
1110 N. Glebe Rd., Suite 220
Arlington, VA 22201-5762
Ph: 703-525-4890
Fax: 703-276-0793
Internet: <http://www.aami.org>
AOK 5/01
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ASSOCIATION OF EDISON ILLUMINATING COMPANIES (AEIC)
600 No. 18th St.
P.O. Box 2641
Birmingham, AL 35291
Ph: 205-257-2530
Fax: 205-257-2540
Internet: <http://www.aeic.org>
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ASSOCIATION OF HOME APPLIANCE MANUFACTURERS (AHAM)
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Washington, DC 20036
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Fax: 202-872-9354
Internet: <http://www.aham.org>
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ASSOCIATION OF IRON AND STEEL ENGINEERS (AISE)
Three Gateway Center, Suite 1900
Pittsburgh, PA 15222-1004
Ph: 412-281-6323
Fax: 412-281-4657
Internet: <http://www.aise.org>
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BIFMA INTERNATIONAL (BIFMA)
2680 Horizon Drive SE, Suite A-1
Grand Rapids, MI 49546-7500
Ph: 616-285-3963
Fax: 616-285-3765
Internet: <http://www.bifma.com>
E-mail: email@bifma.com
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BIOCYCLE, JOURNAL OF COMPOSTING AND RECYCLING (BIOCYCLE)
The JG Press Inc.
419 State Avenue
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Ph: 610-967-4135
Internet: <http://www.biocycle.net>
E-mail: jgpress@jgpress.com
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BRICK INDUSTRY ASSOCIATION (BIA)
11490 Commerce Park Dr., Suite 308
Reston, VA 22091-1525
Ph: 703-620-0010
Fax: 703-620-3928
Internet: <http://www.brickinfo.org>
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BRITISH STANDARDS INSTITUTE (BSI)
389 Chiswick High Road
London W4 4AL
United Kingdom
Phone: +44 (0)20 8996 9000
Fax: +44 (0)20 8996 7400
Email: Info@bsi-global.com
Website: <http://www.bsi-global.com>
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BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)
355 Lexington Ave.
17th floor
New York, NY 10017-6603
Ph: 212-297-2122
Fax: 212-370-9047
Internet: <http://www.buildershardware.com>
AOK 5/01
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BUILDING OFFICIALS & CODE ADMINISTRATORS INTERNATIONAL (BOCA)
4051 W. Flossmoor Rd.
Country Club Hills, IL 60478
Ph: 708-799-2300
Fax: 708-799-4981
Internet: <http://www.bocai.org>
AOK 5/01
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CARPET AND RUG INSTITUTE (CRI)
310 Holiday Ave.
Dalton, GA 30720
P.O. Box 2048
Dalton, GA 30722-2048
Ph: 706-278-0232
Fax: 706-278-8835
Internet: <http://www.carpet-rug.com>
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CAST IRON SOIL PIPE INSTITUTE (CISPI)
5959 Shallowford Rd., Suite 419
Chattanooga, TN 37421
Ph: 423-892-0137
Fax: 423-892-0817
Internet: <http://www.cispi.org>
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CEILINGS & INTERIOR SYSTEMS CONSTRUCTION ASSOCIATION (CISCA)
1500 Lincoln Highway, Suite 202
St. Charles, IL 60174
Ph: 630-584-1919
Fax: 630-584-2003
Internet: <http://www.cisca.org>
AOK 5/01
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CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

1600 Clifton Road
Atlanta, GA 30333
PH: 404-639-3534
FAX:
Internet: <http://www.cdc.gov>
AOK 6/01
LOK 0/00

CHEMICAL FABRICS & FILM ASSOCIATION (CFFA)

1300 Sumner Ave.
Cleveland OH 44115-2851
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-- End of Section --

SECTION 01451

CONTRACTOR QUALITY CONTROL
04/97

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	(1999b) 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	(1998a) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

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

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

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

3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 20 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

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

3.2.2 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

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. 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 and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor

shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 2 years construction experience on construction similar to this contract, or a construction person with a minimum of 8 years in related work. 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 no other duties. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: mechanical, electrical and supplemental. These individuals shall be directly employed by the prime Contractor and may not be employed by a supplier or sub-contractor on this project; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; and have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals shall have no other duties other than quality control.

Experience Matrix

<u>Are</u>	<u>Qualifications</u>
a. Mechanical	Person with 10 years minimum experience in installation, start up, and commissioning of mechanical systems in projects of similar complexity.
b. Electrical	Person with 10 years minimum experience in installation of building and site electrical systems in projects of similar complexity.
c. Supplemental General	Person with 10 years experience in Government contracts of similar complexity, with a knowledge of general construction experience. Person shall assist and perform

Experience Matrix

initial and follow-up inspections under the direction of the CQC System Manager. This person can act for the CQC System Manager for no longer than 2 weeks at a time.

3.4.4 Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". If the Contractor needs this training, it will be provided by Government personnel after award of a contract.

3.4.5 Organizational Changes

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

3.5 SUBMITTALS

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals 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 each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

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

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated

for future reference and comparison with follow-up phases.

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

3.6.3 Follow-up Phase

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

3.6.4 Additional Preparatory and Initial Phases

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

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or

commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

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

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$3,500 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

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

3.7.4 Furnishing or Transportation of Samples for Testing

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

For delivery by mail:

USACE Research and Development Center
ATTN: Joe Tom, CEERD-SC-E
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

For other deliveries: Same as above.

Coordination for each specific test, exact delivery location, and dates will be made through the Area Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Special Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and

included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected.

Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

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

3.8.3 Final Acceptance Inspection

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

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and

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

- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

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

3.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

SECTION 01500A

TEMPORARY CONSTRUCTION FACILITIES
02/97

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Site Plan

The Contractor shall prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

1.1.2 Identification of Employees

The Contractor shall be responsible for furnishing to each employee, and for requiring each employee engaged on the work to display, identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

1.1.3 Employee Parking

Contractor employees shall park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Contractor employee parking shall not interfere with existing and established parking requirements of the military installation.

1.2 AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1 Payment for Utility Services

The Government will make all reasonably required 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.

1.2.2 Meters and Temporary Connections

The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall provide and maintain necessary temporary

connections, distribution lines, and meter bases (Government will provide meters) required to measure the amount of each utility used for the purpose of determining charges. The Contractor shall notify the Contracting Officer, in writing, 5 working days before final electrical connection is desired so that a utilities contract can be established. The Government will provide a meter and make the final hot connection after inspection and approval of the Contractor's temporary wiring installation. The Contractor shall not make the final electrical connection.

1.2.3 Advance Deposit

An advance deposit for utilities consisting of an estimated month's usage or a minimum of \$50.00 will be required. The last monthly bills for the fiscal year will normally be offset by the deposit and adjustments will be billed or returned as appropriate. Services to be rendered for the next fiscal year, beginning 1 October, will require a new deposit. Notification of the due date for this deposit will be mailed to the Contractor prior to the end of the current fiscal year.

1.2.4 Final Meter Reading

Before completion of the work and final acceptance of the work by the Government, the Contractor shall notify the Contracting Officer, in writing, 5 working days before termination is desired. The Government will take a final meter reading, disconnect service, and remove the meters. The Contractor shall then remove all the temporary distribution lines, meter bases, and associated paraphernalia. The Contractor shall pay all outstanding utility bills before final acceptance of the work by the Government.

1.2.5 Sanitation

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.2.6 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

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work the bulletin board shall be removed by and remain the property of the Contractor.

1.3.2 Project and Safety Signs

The requirements for the signs, their content, and location shall be as shown on the drawings. The signs shall be erected within 15 days after receipt of the notice to proceed. The data required by the safety sign shall be corrected daily, with light colored metallic or non-metallic numerals. Upon completion of the project, the signs shall be removed from the site.

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 flagmen, 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.

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, although optional, 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.

1.5 CONTRACTOR'S TEMPORARY FACILITIES

1.5.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.5.2 Appearance of Trailers

Trailers utilized by the Contractor for administrative purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the military property.

1.5.3 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 INSPECTOR'S TEMPORARY OFFICE FACILITY

1.6.1 Inspector's Temporary Office

The Contractor shall furnish a temporary office facility approximately 12 feet by 40 feet with a minimum of 480 square feet of floor space. It shall be located where directed and shall be reserved for Government personnel only. The site will include four parking spaces. Cooled bottled drinking water facilities, adequate lighting, local commercial telephone service, air-conditioning, heating equipment, and a toilet room with water closet and lavatory with sewage facilities shall be furnished and maintained by the Contractor. All windows shall have operable blinds and the office shall include at least four coat hooks to be installed where directed. The office facility shall be divided to include one office area and a common area. The office area will have a door. The office shall have a dedicated phone line and computer connection. The common area can share a phone line. The office shall include a chair, ten feet of shelving located where directed, and one legal size filing cabinet with four. A counter will be provided on the wall behind the computer work station as a work area for ½ size drawings. The common area will include a telephone, a plain paper fax machine, a plan table large enough to accommodate a full size set of drawings with seat, a white marker board, a copier capable of automatic feed and sorting, one plan rack, and three chairs. A fold up table (3'X8') with 4 metal folding chairs will be furnished for use in job site meetings. Used furniture, in good condition, will be acceptable. Entrance doors shall be equipped with a substantial lock. The two computer lines shall be 573-596-XXXX numbers that are routed through the Government phone system.

1.6.2 Janitorial Service

The Contractor shall provide janitor service (the office shall be cleaned weekly), fuel for the heating facilities, electricity, telephone and water, all at no cost to the Government, except the Contractor will not be liable for Government long distance calls. Utilities shall be connected and disconnected in accordance with local codes and to the satisfaction of the Contracting Officer. The entire facility, including furniture, will remain the property of the Contractor and shall be removed from the site after

completion of the work

1.6.3 Anchorage

The Temporary Office shall be securely anchored to the ground at all four corners to guard against movement during high winds

1.7 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.8 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work site. The safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, constructed at the approved location. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.9 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

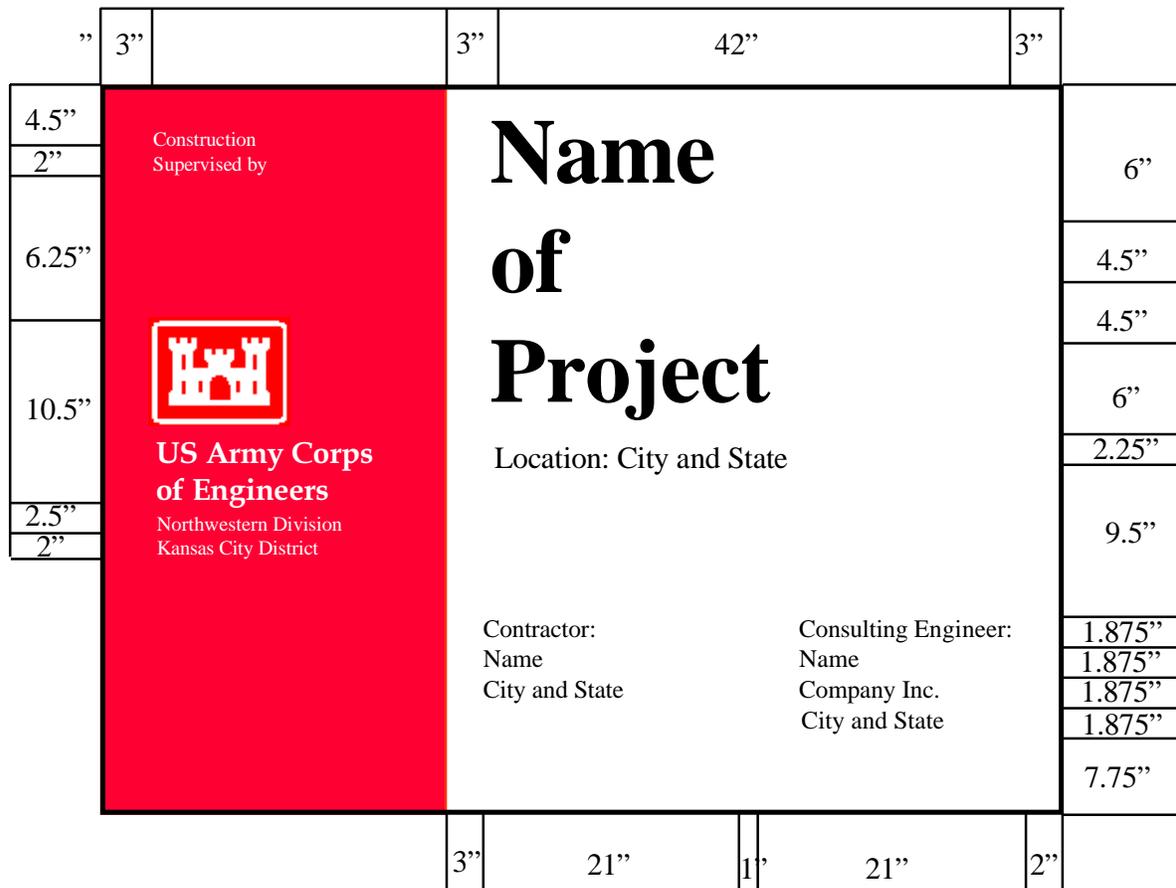
PART 2 MATERIALS (Not Used)

PART 3 EXECUTION (Not Used)

-- End of Section --

The graphic format for this 4'x 6' sign panel follows the legend guidelines and layout as specified below. The large 4'x 4' section of panel on the right is to be white with black legend. The 2'x 4' section of the sign on the left with the full Corps signature (reverse version) is to be screen printed Communications Red on the White background.

This sign is to be placed with the Safety Performance Sign (See Fig. 2).



Legend Group 1: One to two-line description of Corps relationship to project
Color: White
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 2: Division\ District Name Placed below 10.5" Reverse Signature (6" Castle).
Color: White
Typeface: 1.25" Helvetica Regular

Legend Group 3: 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"

Legend Group 4: One- to two-line identification of project or facility (civil works) or name of sponsoring department (military).
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Cross-align the first line of Legend Group 4 with the first line of the Corps Signature (US Army Corps) as shown.

Legend Groups 5a-b: One- to five-line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state. Use of Legend Group 5 is optional.
Color: Black
Typeface: 1.25" Helvetica Regular
Maximum line length: 21"

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

Sign Type	Legend Size	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-01	Various	4' x 6'	4' x 4'	HDO-3	48"	WH-RD/BK

CONSTRUCTION SIGN (CORPS OF ENGINEERS DESIGN)
(Use with Fig 2)

Fig. 1

SAFETY PERFORMANCE SIGN

Each contractor's safety record is to be posted on Corps managed or supervised construction projects and mounted with the construction project identification sign.

The graphic format, color, size and typefaces used on the sign are to be reproduced exactly as specified below. The title with First Aid logo in the top section of the sign and the performance record captions are standard for all signs of the type. Legend Groups 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown.

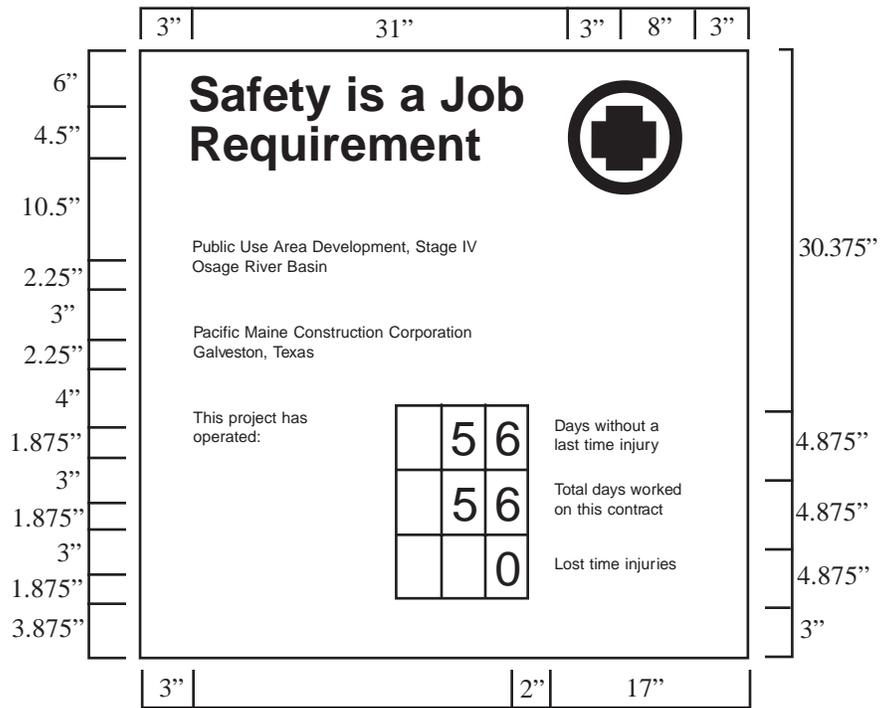
Safety record numbers are mounted on individual metal plates and are screw mounted to the background to allow for daily revisions to posted safety performance record.

Legend Group 1: Standard two-line title "Safety is a Job requirement" with (8 od.) Safety Green First Aid logo.
Color: to match PMS 347
Typeface: 3" Helvetica 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.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

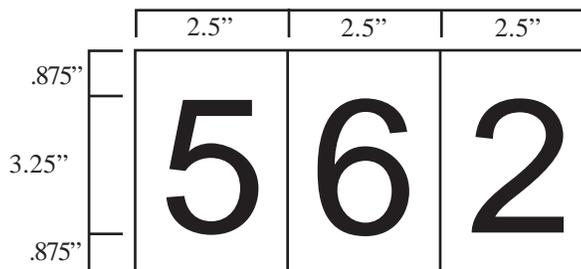
Legend Group 3: One to two-line identification; name of prime contractor and city, state address.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 4: Standard safety record captions as shown.
Color: Black
Typeface: 12.5" Helvetica Regular



Sign Type	Legend Size	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-02	Various	4' X 4'	4" X 4"	HDO-3	48"	WH/BK - GR

Replaceable numbers are to be mounted on white .060 aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5" X 5"



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.

Fig. 2

SECTION 01780A

CLOSEOUT SUBMITTALS

11/99

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-02 Shop Drawings

As-Built Drawings; G-RE.

Drawings showing final as-built conditions of the project. The final CADD as-built drawings shall consist of one set of electronic CADD drawing files in the specified format, one set of mylar drawings, and two sets of the approved red-line as-built drawings.

As-Built Record of Equipment and Materials; G-RE.

Two copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

Warranty Management Plan; G-RE.

One set of the warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. The Contractor shall furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.

Warranty Tags; G-RE.

Two record copies of the warranty tags showing the layout and design.

Final Cleaning; G-RE.

Two copies of the listing of completed final clean-up items.

1.2 PROJECT RECORD DOCUMENTS

1.2.1 As-Built Drawings

This paragraph covers as-built drawings complete, as a requirement of the contract. The terms "drawings," "contract drawings," "drawing files,"

"working as-built drawings" and "final as-built drawings" refer to contract drawings which are revised to be used for final as-built drawings.

1.2.1.1 Government Furnished Materials

One set of electronic CADD files in the specified software and format revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for projects requiring CADD file as-built drawings.

1.2.1.2 Monthly As-Built Review Meeting

A monthly as-built review meeting will be conducted during the construction project. Each member of the construction team will attend the meeting and provide information or documentation as required. The meeting will be conducted in a mutually agreed upon location. To minimize difficulty in coordinating schedules, efforts will be made for a standing meeting in the same location, at the same time, and on the same day of the week each month.

- a. The Government will chair the meeting and serve as the information conduit.
- b. The Government will provide an agenda for the meeting.
- c. The Contractor shall bring two updated CDs (or diskettes) to the meeting.
- d. The Contractor shall bring current redline drawings to the meeting.
- e. The Contractor shall display updated CADD as-built files on screen, demonstrating that CADD files match features on redline drawings, and making changes if necessary.
- f. The Contractor shall leave one CD (or diskette) with the Government. The Contractor shall have updated this copy to include any changes made during the meeting.
- g. The Contractor shall ensure that all design/construction and environmental drawings in the Bentley Microstation DGN file format, compatible with Ft. Leonard Wood's CADD system, follow the Release 1.8 of the Tri-Service CADD Standard, that an electronic copy of the above mentioned standard is furnished, and that all submittals are delivered on CD-ROM or 1.44 MB diskette.
- h. For features exterior to primary facilities, the Government will ensure the design file, working units and Cartesian coordinates allow for graphics to be geographically located in the Universal Traverse Macerator (UTM) zone 15 datum.

1.2.1.3 Exterior Utility Systems

At intervals of 30 days from the time work is begun on new utility systems or on revising existing systems, as-built CADD files shall be submitted showing the condition of new and altered utility systems. The as-built exterior utility drawings shall show locations and elevations of all underground new and existing utilities encountered, including dimensions form permanent structures and/or/or survey locations.

1.2.1.4 Working As-Built and Final As-Built Drawings

The Contractor shall revise three (3) sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. These working as-built marked drawings shall be kept current on a daily basis and at least one stet shall be available on the jobsite at all times. Changes form the contract plans which are made in the work or additional information which might be uncovered in the course of

construction shall be accurately and neatly recorded as they occur by means of details and notes. Final as-built drawings shall be prepared after the completion of each definable feature or work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final as-built drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. The working and final as-built drawings shall show, but shall not be limited to, the following information:

a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.

b. The location and dimensions of any changes within the building structure.

c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

d. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

f. Changes or modifications which result from the final inspection.

g. Where contract drawings or specifications present options, only the option selected for construction shall be shown on the final as-built prints.

h. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.

i. Modifications (change order price shall include the Contractor's cost to change working and final as-built drawings to reflect modifications) and compliance with the following procedures.

(1) Directions in the modification for posting descriptive changes shall be followed.

(2) A Modification Circle shall be placed at the location of each deletion.

(3) For new details or sections which are added to a drawing, a Modification Circle shall be placed by the detail or section title.

(4) For minor changes, a Modification Circle shall be placed by the area changed on the drawing (each location).

(5) For major changes to a drawing, a Modification Circle shall be placed by the title of the affected plan, section, or detail at each location.

(6) For changes to schedules or drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.

(7) The Modification Circle size shall be 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.2.1.5 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

1.2.1.6 Computer Aided Design and Drafting (CADD) Drawings

Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same graphic standards specified for original drawings. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD files. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings. The Contracting Officer will review final as-built drawings for accuracy and the Contractor shall make required corrections, changes, additions, and deletions.

a. CADD colors shall be the "base" colors of red, green, and blue. Color code for changes shall be as follows:

(1) Deletions (red) - Deleted graphic items (lines) shall be colored red with red lettering in notes and leaders.

(2) Additions (Green) - Added items shall be drawn in green with green lettering in notes and leaders.

(3) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes shall be in blue.

b. The Contract Drawing files shall be renamed in a manner related to the contract number (i.e., 98-C-10.DGN). Marked-up changes shall be made only to those renamed files. All changes shall be made on the layer/level as the original item. There shall be no deletions of existing lines; existing lines shall be over struck in red. Additions shall be in green with line weights the same as the drawing. Special notes shall be in blue on layer #63.

c. When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 3/16 inch high. All other contract drawings shall be marked either "AS-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. Original contract drawings shall be dated in the revision block.

d. Within 20 days after Government approval of all of the working as-built drawings for a phase of work, the Contractor shall prepare the final CADD as-built drawings for that phase of work and submit two sets of blue-lined prints of these drawings for Government review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 10 days the Contractor shall revise the CADD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 20 days of substantial completion of all phases of work, the Contractor shall submit the final as-built drawing package for the entire project. The submittal shall consist of one set of electronic files on compact disc, read-only memory (CD-ROM), one set of 24-inch by 36-inch mylars, a sheet index showing sufficient planimetric data to indicate the geographical location of the project, and two sets of the approved red-line as-built drawings. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

e. Within 60 days after turning over the facility, the Contractor shall provide to the DPW as-built CADD files containing all of the red-line mark-ups incorporated and reflecting the compelled as-built conditions of the project, including buildings, exterior utility systems, and all other features.

1.2.1.7 Payment

No separate payment will be made for as-built drawings required under this contract, and all costs accrued in connection with such drawings shall be considered a subsidiary obligation of the Contractor.

1.2.2 As-Built Record of Equipment and Materials

The Contractor shall furnish one copy of preliminary record of equipment and materials used on the project 15 days prior to final inspection. This preliminary submittal will be reviewed and returned 2 days after final inspection with Government comments. Two sets of final record of equipment and materials shall be submitted 10 days after final inspection. The designations shall be keyed to the related area depicted on the contract drawings. The record shall list the following data:

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA

Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size	Where Used
-------------	--------------------------	---	-------------------------	---------------

1.2.3 Final Approved Shop Drawings

The Contractor shall furnish final approved project shop drawings 30 days after transfer of the completed facility.

1.2.4 Construction Contract Specifications

The Contractor shall furnish final as-built construction contract specifications, including modifications thereto, 30 days after transfer of the completed facility.

1.2.5 Real Property Equipment

The Contractor shall furnish a list of installed equipment furnished under this contract. The list shall include all information usually listed on manufacturer's name plate. The "EQUIPMENT-IN-PLACE LIST" shall include, as applicable, the following for each piece of equipment installed: description of item, location (by room number), model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. A draft list shall be furnished at time of transfer. The final list shall be furnished 30 days after transfer of the completed facility.

1.3 WARRANTY MANAGEMENT

1.3.1 Warranty Management Plan

The Contractor shall develop a warranty management plan which shall contain information relevant to the clause Warranty of Construction. At least 30 days before the planned pre-warranty conference, the Contractor shall submit the warranty management plan for Government approval. The warranty management plan shall include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished. Warranty information made available during the construction phase shall be submitted to the Contracting Officer for approval prior to each monthly pay estimate. Approved information shall be assembled in a binder and shall be turned over to the Government upon acceptance of the work. The construction

warranty period shall begin on the date of project acceptance and shall continue for the full product warranty period. A joint 4 month and 9 month warranty inspection shall be conducted, measured from time of acceptance, by the Contractor, Contracting Officer and the Customer Representative. Information contained in the warranty management plan shall include, but shall not be limited to, the following:

a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.

b. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.

c. A list for each warranted equipment, item, feature of construction or system indicating:

1. Name of item.
2. Model and serial numbers.
3. Location where installed.
4. Name and phone numbers of manufacturers or suppliers.
5. Names, addresses and telephone numbers of sources of spare parts.
6. Warranties and terms of warranty. This shall include one-year overall warranty of construction. Items which have extended warranties shall be indicated with separate warranty expiration dates.
7. Cross-reference to warranty certificates as applicable.
8. Starting point and duration of warranty period.
9. Summary of maintenance procedures required to continue the warranty in force.
10. Cross-reference to specific pertinent Operation and Maintenance manuals.
11. Organization, names and phone numbers of persons to call for warranty service.
12. Typical response time and repair time expected for various warranted equipment.

d. The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

e. Procedure and status of tagging of all equipment covered by extended warranties.

f. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

1.3.2 Performance Bond

The Contractor's Performance Bond shall remain effective throughout the construction period.

a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred

by the Government while performing the work, including, but not limited to administrative expenses.

b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.

c. Following oral or written notification of required construction warranty repair work, the Contractor shall respond in a timely manner. Written verification will follow oral instructions. Failure of the Contractor to respond will be cause for the Contracting Officer to proceed against the Contractor.

1.3.3 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor shall furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, shall be continuously available, and shall be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.3.4 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, the Contractor shall respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. The Contractor shall submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframes specified, the Government will perform the work and backcharge the construction warranty payment item established.

a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.

d. The "Construction Warranty Service Priority List" is as follows:

Code 1-Air Conditioning Systems

- (1) Recreational support.
- (2) Air conditioning leak in part of building, if causing damage.
- (3) Air conditioning system not cooling properly.

Code 1-Doors

- (1) Overhead doors not operational, causing a security, fire, or safety problem.
- (2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors

- (1) Overhead doors not operational.
- (2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical

- (1) Power failure (entire area or any building operational after 1600 hours).
- (2) Security lights
- (3) Smoke detectors

Code 2-Electrical

- (1) Power failure (no power to a room or part of building).
- (2) Receptacle and lights (in a room or part of building).

Code 3-Electrical

Street lights.

Code 1-Gas

- (1) Leaks and breaks.
- (2) No gas to family housing unit or cantonment area.

Code 1-Heat

- (1). Area power failure affecting heat.
- (2). Heater in unit not working.

Code 2-Kitchen Equipment

- (1) Dishwasher not operating properly.
- (2) All other equipment hampering preparation of a meal.

Code 1-Plumbing

- (1) Hot water heater failure.
- (2) Leaking water supply pipes.

Code 2-Plumbing

- (1) Flush valves not operating properly.
- (2) Fixture drain, supply line to commode, or any water pipe leaking.
- (3) Commode leaking at base.

Code 3 -Plumbing

Leaky faucets.

Code 3-Interior

- (1) Floors damaged.
- (2) Paint chipping or peeling.
- (3) Casework.

Code 1-Roof Leaks

Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks

Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)

No water to facility.

Code 2-Water (Hot)

No hot water in portion of building listed.

Code 3-All other work not listed above.

1.3.5 Warranty Tags

At the time of installation, each warranted item shall be tagged with a durable, oil and water resistant tag approved by the Contracting Officer. Each tag shall be attached with a copper wire and shall be sprayed with a silicone waterproof coating. The date of acceptance and the QC signature shall remain blank until project is accepted for beneficial occupancy. The tag shall show the following information.

- a. Type of product/material_____.
- b. Model number_____.
- c. Serial number_____.
- d. Contract number_____.
- e. Warranty period_____ from_____ to_____.
- f. Inspector's signature_____.
- g. Construction Contractor_____.
- Address_____.
- Telephone number_____.
- h. Warranty contact_____.
- Address_____.
- Telephone number_____.
- i. Warranty response time priority code_____.
- j. WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

1.4 MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

Prior to final inspection and transfer of the completed facility; all reports, statements, certificates, and completed checklists for testing,

adjusting, balancing, and commissioning of mechanical systems shall be submitted to and approved by the Contracting Officer as specified in applicable technical specification sections.

1.5 OPERATION AND MAINTENANCE MANUALS

Operation manuals and maintenance manuals shall be submitted as specified. Operation manuals and maintenance manuals provided in a common volume shall be clearly differentiated and shall be separately indexed.

1.6 FINAL CLEANING

The premises shall be left broom clean. Stains, foreign substances, and temporary labels shall be removed from surfaces. Carpet and soft surfaces shall be vacuumed. Equipment and fixtures shall be cleaned to a sanitary condition. Filters of operating equipment shall be cleaned. Debris shall be removed from roofs, drainage systems, gutters, and downspouts. Paved areas shall be swept and landscaped areas shall be raked clean. The site shall have waste, surplus materials, and rubbish removed. The project area shall have temporary structures, barricades, project signs, and construction facilities removed. A list of completed clean-up items shall be submitted on the day of final inspection.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

SECTION B
GENERAL DESIGN REQUIREMENTS

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PART 3 – CIVIL
PART 4 – ARCHITECTURAL
PART 5 – STRUCTURAL
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PART 1 - GENERAL

1.1 Overall Project Description

Fort Leonard Wood is located near St. Roberts, Missouri, approximately 80 kilometers (50 miles) south of Jefferson City, Missouri. Range 3 is located south of the main cantonment area on FLW Roadway 30. Range 9 is also located south of the main cantonment area on FLW Highway 1. See drawing G101 for a location map.

1.1.1 Project Description - Range 3

This contract includes all design and construction necessary to provide a complete and operational Modified Record Fire Range at the site of existing Range 3 at Ft. Leonard Wood, Missouri. The Modified Record Fire Range consists of sixteen lanes, each 20 meters in width and 300 meters in length with one walk-in, one-person foxhole, and nine stationary pop-up targets at 50 (two targets), 75, 100, 150, 175, 200, 250, and 300 meters from the firing line. The design/build contractor will be responsible for the foxholes, and the grading for the emplacements for the stationary pop-up targets. The target emplacements, target mechanisms, conduit for pneumatic lines, pneumatic tubing, and control wiring for targetry, and electrical terminations will be done by others.

The design/build contractor will also be responsible for the design and construction of new support facilities at this range. These facilities include a three-story control tower, a 251 square meter classroom/storage/latrine building, a 100-person covered mess facility, a 300-person bleacher enclosure, an ammunition breakdown building, grading for a concrete slab/foundation for a compressor/controls building, (slab and building by others) water service (consisting of a new water main connecting to the existing Base water system), sanitary service (consisting of a lift station and force main connecting to the existing Base sewer system), access and maintenance roads, all necessary earthwork, seeding, and erosion control measures, improvements to overhead electrical service, telephone service, night lighting, HVAC systems, anti-terrorism/force protection measures, and other ancillary improvements. Building furniture, control tower equipment, and bleachers will be provided by others.

In addition, the design/build contractor will be responsible for the demolition and removal of four existing structures. One structure, the existing bleacher enclosure, will be removed by others. The contractor will be responsible for the removal of the bleacher enclosure foundation.

Verification of existing site conditions, additional site surveys, additional geotechnical investigations, and all other information prerequisite for design and construction of a complete and usable facility, and not contained in this Request for Proposal (RFP) are the expressed responsibility of the Contractor.



Photo 1 - Range 3: Existing Firing Line Area



Photo 2 - Range 3: Existing Downrange Area

1.1.2 Project Description - Range 9

This contract includes design and construction of alterations, improvements and additions to the existing Range 9 at Ft. Leonard Wood, Missouri. The existing Modified Record Fire Range at Range 9 consists of fifteen lanes, each with a walk-in, one-person foxhole, and nine stationary pop-up targets.

The design/build contractor will be responsible for the design and construction of new support facilities at this range. These facilities include a multi-story control tower, a 251 square meter classroom/storage/latrine building, a 100-person covered mess facility, a 300-person bleacher enclosure, an ammunition breakdown building, water service (consisting of a new water main connecting to the existing Base water system), sanitary service (consisting of a combination of a gravity sewer and a lift station and force main connecting to the existing Base sewer system), access and maintenance roads, all necessary earthwork, seeding, and erosion control measures, electrical service, telephone service, night lighting, HVAC systems, anti-terrorism/force protection measures, and other ancillary improvements. The design/build contractor will also modify the existing walk-in foxholes to add wing walls at the foxhole entrances. Building furniture, control tower equipment, and bleachers will be provided by others.

In addition, the design/build contractor will be responsible for the demolition and removal of five existing structures. Two structures, the existing bleacher enclosure and a wood shed, will be removed by others. The contractor will be responsible for the removal of the bleacher enclosure foundation.

Verification of existing site conditions, additional site surveys, additional geotechnical investigations, and all other information prerequisite for design and construction of a complete and usable facility, and not contained in this Request for Proposal (RFP) are the expressed responsibility of the Contractor.



Photo 3 - Range 9: Existing Firing Line Area

1.2 General Design Criteria

The project shall be designed and constructed in accordance with the applicable codes, standards, design parameters and regulations as noted in this section or other sections of this RFP. In case of conflict between these requirements the most stringent requirement shall apply.

Reference to standard specifications of any technical society, organization, or association, or to codes, manuals, or regulations of Federal, State, or local authorities shall mean the latest standard, code, manual, regulation, specification, or tentative specification adopted and published at least 90 days prior to submittal of proposal, unless specifically stated otherwise. When any code or standard listed below references the authority having “Jurisdiction” or “governmental authority” this reference shall be interpreted as referring to the Contracting Officer (CO).

Construction shall be in accordance with the following codes, standards, and regulations. The most stringent shall govern when discrepancies occur.

- Building Code: International Building Code (IBC), latest Edition and Supplements.
- Mechanical Code: International Mechanical Code (IMC), latest Edition and Supplements.
- Plumbing Code: International Plumbing Code (IPC), Latest Edition and Supplements.
- Electrical Codes: ICC Electrical Code, Latest Edition and Supplements.

- Fire Protection and Life Safety: International Fire Code (IFC), Latest Edition and Supplements
- Lightning Protection Code, NFPA 780 and DoD 6055.9-STD, Chapter 7.
- AFI 32-1065, Grounding Systems. Available on the internet at the following web address: <http://afpubs.hq.af.mil> .
- MIL-HDBK-1008C, Fire Protection for Facilities. Requirements of this handbook shall govern over other standards for fire protection and life safety.
- CEHNC 1110-1-23, U.S. Army Corps of Engineers Design Manual for Remoted Target System (RETS) Ranges – March 1998
- Physical Security – FM 3-19.30 *Physical Security* Department of the Army January 2001.

1.3 Project Special Conditions

The following special conditions for this project are in addition to the special conditions presented in Part A of this RFP.

- Potential Indiana bat roost trees at the downrange area of Range 3 may be cut down between November 15 and March 31 only.
- Although two Infantry Hostile Fire Simulators (IHFS) per lane (at the 50 meter target line) are described and shown in the *Design Manual for Remoted Target System (RETS) Ranges* for Modified Record Fire Ranges, these devices are not necessary according to the Army Training Support Center at Ft. Eustis, VA. Any reference to IHFS in the *Design Manual for Remoted Target System (RETS) Ranges* shall be ignored.
- Range 3 is not currently in operation but all design and construction activities on the site shall be coordinated with Ft. Leonard Wood Range Division.
- Range 9 will remain operational during construction. The design/build contractor shall coordinate his activities with Ft. Leonard Wood – Range Division.
- The design/build contractor shall coordinate the completion of the control tower at Range 9 with Ft. Leonard Wood – Range Division. It is anticipated that transitioning service from the existing control tower to the new control tower shall take place during late December – early January.
- The bleacher enclosures at Range 3 and Range 9 will be removed by Ft. Leonard Wood – Range Division. The design/build contractor is responsible for removing the bleacher enclosure foundations. A wood shed at Range 9 will be removed by Ft. Leonard Wood – Range Division.
- The troop trail located just to the east of and parallel to FLW Highway 1 shall remain open at all times. At no time shall more than half the width of the trail be closed due to construction activities. Adequate

precautions shall be taken by the design/build contractor to protect troops using the trail. All construction activities on the trail shall be coordinated with Ft. Leonard Wood – Range Division.

- Certain construction actions at Ft. Leonard Wood trigger an environmental compliance review or requires a permit or other document. The following table which was provided by Ft. Leonard Wood, which is not all inclusive, lists several of these actions. Several of these actions may not apply to this project. The Ft. Leonard Wood – Environmental Branch should be contacted for further information.

Action	Document, Permit, or Notification	Est. Cost (Typ Project)	Estimated Time	Env POC
New/Changes to Drinking Water systems to include distribution system	Permit to Construct	\$50 - \$3K	6 months from date DNR <u>receives</u> application, with plans/specs. PE stamp required	Carl Stenger (573)596-3723
New/Changes to Wastewater Systems to include collection system	Permit to Construct	\$50 - \$3K	6 months from date DNR <u>receives</u> application, with plans/specs. PE stamp required	Jim Carter (573)596-0882
New/changes to Underground Storage Tanks	Notification Required	\$100	Minimum 30-day notification prior to work start	Carl Stenger
Coatings/Paint Disturbance (Lead Paint)	10 day Notification Required	\$25	Minimum 10-day notification prior to work start	Jim Carter
New/Changes to Aboveground Storage Tanks	Permit to “Construct”	\$150	Approx. 60-days from date DNR request for permit determination	Tim Neal (573)596-0005
New/Changes to large facility HVAC Systems	Permit to “Construct”	\$150 - \$10K	9 months after DNR <u>receives</u> permit application	Tim Neal
New Construction / land disturbing actions	Env. Document (REC or EA)	\$0 - \$100K	3 weeks for REC and average 12 months for EA	Emily Brown (573)596-0882
Land Disturbance (5 Acres or greater)	Stormwater Runoff Permit	\$300	2-3 months from date MDNR <u>receives</u> permit application	Carl Stenger
Replace Boiler or Install New Boilers	Permit to Construct	\$150 - \$10K	9 months from date DNR <u>receives</u> application with plans/specs	Tim Neal
Asbestos Containing Materials	20 Day Notification to State	\$20	20 day notification prior to start	Jim Carter
Install New / Replace Emergency Generators	Permit to Construct	\$150 - \$10K	9 months from date DNR <u>receives</u> application with plans/specs	Tim Neal
Install New Fuel Storage Tanks	Permit to Construct	\$150 - \$10K	9 months from date DNR <u>receives</u> application with plans/specs	Tim Neal

1.4 Survey Information

Topographic surveys for Range 3 were conducted in 1996 and for a portion of Range 9 in 2002. The Contractor will be responsible for field verifying information shown by the survey and resurveying any areas that have been modified since the surveys were performed. The Contractor will be responsible for locating all underground utilities that may be affected by the construction. (The Contractor will also be responsible for relocating utilities as necessary to complete the project.) The Contractor is also responsible for surveying any additional areas that need to be surveyed for the design and construction of the project. (It is anticipated that additional survey work will be required for the new water main to Ranges 3 and 9 and the sanitary sewer lines to Ranges 3 and 9.)

The Contractor shall follow the Sample Site Scope of Work presented in Appendix C of the *Design Manual for Remoted Target System (RETS) Ranges* for surveys. The following are the minimum survey requirements for the project:

- The survey shall be provided in metric units with 0.50-meter contour intervals.
- Spot elevations shall be provided at the corners of all buildings, at high and low points and abrupt changes in grade along drainage courses, at all equipment pads, all building stoops, and all other pertinent locations.
- All surface features and underground utilities within the area to be surveyed shall be shown and identified. These features and utilities include:
 - Power and communication lines, light poles, guy wires, above and below ground vaults, and transformers.
 - Sanitary sewer manholes and storm drainage structures (including pipe size and flow line elevations).
 - All other underground utilities including, but not limited to water and gas.
 - Roads, road signs, drives and walks.
 - Fences (location, type, and height).
 - All other visible surface features including tanks, monitoring wells, posts, etc.
- Identify trees greater than 100 mm diameter.

In general, all survey files shall become the property of the Kansas City District Corps of Engineers. The final product shall be in Bentley Microstation format and shall be done in accordance with the Tri-Service CAD Standards manuals.

1.5 Additional Sources of Information

The following is a list of potential sources of information for various aspects of this project.

Kansas City District Corps of Engineers

<http://www.nwk.usace.army.mil/>

Ft. Leonard Wood, Missouri

<http://www.wood.army.mil/>

Range and Training Land Program (Source of CEHNC 1110-1-23)

<http://www.hnd.usace.army.mil/rtlp/>

US Army Corps of Engineers “TechInfo” (Guide Specifications and Other Documents)

<http://www.hnd.usace.army.mil/techinfo/>

The CADD / GIS Technology Center (CADD Standards)

<http://tsc.wes.army.mil/>

Publications of the Headquarters, US Army Corps of Engineers

<http://www.usace.army.mil/inet/usace-docs/>

US Army STRICOM Target Management Office

<http://www.stricom.army.mil/STRICOM/PM-ITTS/TMO/>

Action Target Company

P.O. Box 636

Provo, Utah 84603

Phone: (801) 377-8033

<http://www.actiontarget.com>

PART 2 – GEOTECHNICAL

REPORT OF GEOTECHNICAL EXPLORATION FIRING RANGES-UPGRADE NIGHT FIRE RANGE AND AUTOMATED RECORD FIRE RANGE FORT LEONARD WOOD, MISSOURI

2.1 INTRODUCTION

This report presents the findings and subsequent recommendations concerning the geotechnical exploration and engineering analysis for the proposed Firing Range Upgrades at Fort Leonard Wood, Missouri. The proposed upgrades are located at firing ranges 3 and 9; the night fire range and the automated record fire range.

The purpose of this report is to describe the surface and subsurface conditions encountered at the site, including a presentation of laboratory test results, and through analysis and evaluation of this information, to present a summary of existing conditions, soil characteristics, and geotechnical design recommendations.

2.2 FIELD EXPLORATION PROCEDURES

A total of four test borings for the proposed Firing Range upgrades were completed on April 16, 2002. The test boring locations were selected by Custom Engineering, Inc. The test holes were field located by KTI using site drawings provided by the client. Ground surface elevations at the boring locations were also determined by KTI using finished floors of existing buildings as benchmarks. On firing range 3, an assumed elevation of 100 feet was assigned to the finished floor of the southeast corner of building 5161. On firing range 9, a finished floor elevation of 1129.8 feet (converted from the metric unit 344.36 meters) at the south end of building 5380 was used as a benchmark. The boring locations are shown in the Boring Location Drawings section of this report. The borings were drilled with a BK-51 HD rotary drill rig. Advancement of the test holes was accomplished using 4-inch O.D. continuous flight augers. Soil sampling was performed by driving 2" O.D. split-barrel samplers (Standard Penetration Test).

Site soils were visually and manually classified in general accordance with ASTM D 2488 by the drill crew chief as drilling progressed. All of the soil samples were delivered to the laboratory for applicable testing and verification of the field classifications. The boring logs were created as the borings were advanced, and the logs were supplemented with information from the laboratory tests to present data concerning the depth and classification of the various strata, water level, and other pertinent information. The boring logs are attached at the end of this section.

During advancement of the borings, free water was not encountered in any of the test holes. It should be noted that water level determinations made in relatively impervious

(clay) soils might not present a reliable indication of the actual water table. However, water level determinations made in relatively pervious (sand/silt) soils are considered quite an accurate indication of the water table at the time that those measurements are made. Fluctuations in the water table should be expected with changing seasons and annual differences.

2.3 LABORATORY TESTS

All soil samples were observed by a KTI geologist in order to verify the field classifications. Laboratory tests were performed on the recovered samples to determine the engineering characteristics and for additional verification of the field classifications in accordance with ASTM D 2487. The results of these tests including in-situ moisture content, and plasticity (Atterberg limits), are presented at the end of this section.

2.4 SITE CONDITIONS

Both ranges are located in relatively level areas with sparse vegetation. Existing buildings are present and are reached via gravel drives.

2.5 PROJECT DESCRIPTION

We understand that the project will construct two ranges: Upgrade Night Fire Range will upgrade existing range 9 to a Modified Record Fire Range including target emplacements, observation tower, covered mess facility, classroom building, bleachers, security fencing, parking, target cabling and control wiring, water well, maintenance roads, latrine with sewage treatment, anti-terrorism/force protection measures, and other ancillary improvements.

Automated Record Fire Range will convert an existing 25-meter range. Construction will include 16 foxholes, 112 target emplacements, observation tower, covered mess facility, classroom building, bleachers, security fencing, parking, target cabling and control wiring, water well, maintenance roads, latrine with sewage treatment, anti-terrorism/force protection measures, and other ancillary improvements.

2.6 GEOLOGY/SUBSURFACE CONDITIONS

The site soils consist of residual clays (weathered in place from parent bedrock materials), and fill materials overlying dolomitic limestone bedrock. Fill materials were identified from Boring 4 to a depth of six feet. The fill is composed of stiff, very fat (high plasticity) clay, classified as CH by the Unified Soil Classification System, containing rock fragments. The residual soils are also extremely fat clays that contain varying proportions of chert, dolomitic limestone fragments, and sand. The residual soils exhibit stiff to hard consistency.

Auger refusal on dolomitic limestone bedrock occurred in Borings 2 and 4 at a depth of 13 ½ feet, and in Boring 3 at a depth of 18 feet. Bedrock was not encountered in Boring 1

within the planned depth of 20 feet. At the time of drilling, free water was not present in any of the borings.

2.7 DESIGN CRITERIA AND RECOMMENDATIONS

Laboratory test results of the recovered samples showed the following characteristics that were used as criteria for determining the recommendations for bearing values and design data:

In-Situ Moisture.....	12.8 to 41.2%
Liquid Limit.....	94 to 124
Plasticity Index.....	66 to 95

Site Preparation

Areas to receive fill should be stripped of vegetation, root zones, topsoil and any deleterious materials present. Fill should be placed in uniform horizontal lifts with loose thicknesses not exceeding eight inches. The thickness must be appropriate for the method of compaction and the type of equipment used. Fill should not be placed on soft materials or frozen ground. Any isolated areas of soft or deleterious materials should be removed and backfilled with engineered fill. The depth of required overexcavation should be determined by a representative of the geotechnical engineer. Any additional materials proposed for fill should be submitted to and approved by the geotechnical engineer.

Lateral Earth Pressure

The following K values, based on the fat clay soils on site, may be used for the determination of lateral soil resistance for retaining structures. These values do not take into account surcharges caused by construction equipment or spoil piles placed adjacent to retaining structures.

Angle of internal friction (δ) = 12° (estimated)

$$K_a = 0.66$$

$$K_p = 1.53$$

$$K_0 = 0.79$$

Wet density of soil, estimated (γ) = 105.0 pcf

Retaining walls, basement walls, or footings (where $\delta = 0^\circ$)

Equivalent active fluid pressure: $P_a = (K_a\gamma) = 69.3$ pcf

Equivalent passive fluid pressure: $P_p = (K_p\gamma) = 160.7$ pcf

Equivalent at rest fluid pressure: $P_o = (K_o\gamma) = 83.0$ pcf

Coefficient of base friction: = 0.21

Shallow Foundations Bearing on Soil

All foundation elements can be supported by shallow spread footings on the existing undisturbed soils. Shallow foundations may be designed using net allowable bearing capacities of 2,000 psf for continuous footings and 2,500 psf for individual footings. These recommendations take into consideration a factor of safety of three against actual shear failure. Total settlement potential at these bearing capacities is anticipated to be less than ½inch. Soil excavations should be observed and approved by a representative of the geotechnical engineer to determine that no soft soils or areas of deleterious materials are present. If soft soils or deleterious materials are present, then it is recommended that the soil in the footing excavations be overexcavated and replaced with engineered fill as shown in the attached Figure 1. Engineered fill can consist of either lean clay fill (liquid limit at or below 45) placed at 94 to 98 percent of standard Proctor or recompacted site soils placed at 90 to 95 percent of standard Proctor. If site soils are used, moisture contents will have to be adjusted to be between optimum moisture and 4 percent above optimum. With present site conditions, this moisture requirement will require the addition of moisture.

Slab on Grade

Movement between slabs on grade and walls may occur. To minimize the effects of this movement, we recommend that slip joints be incorporated between all slabs and walls. All slabs should contain crack control and construction joints, which are formed on 15 to 25 foot centers, each way, or as designed by the project structural engineer. A capillary moisture barrier should be placed under the slabs. This barrier should be a minimum of a 6-inch thick layer of clean granular material extending to the limits of the foundation walls. Should additional moisture protection be desired, it should be a minimum of 6-mil polyethylene sheeting placed between the slab and the base course.

Surface Drainage

In order to reduce the problems related to water infiltration, it is recommended that the final grade around the perimeter of the building have a positive slope extending at least six feet away from the structure. Backfill of all soils around the foundation should be compacted at a minimum of 95 percent of maximum density at a moisture content between optimum moisture and four percent above optimum per standard Proctor (ASTM D 698). Downspouts should extend three to four feet away from the perimeter walls and well beyond the foundation backfill.

2.8 REMARKS

It is recommended that the geotechnical engineer be retained to review the plans and specifications for the project so that an evaluation and comments can be provided regarding the proper incorporation of information from this geotechnical report into the final construction documents. We further recommend that the geotechnical engineer be retained during construction phases for earthwork and foundations to provide observation and testing to aid in determining that design intent has been accomplished.

The findings in this report are based on data acquired to date and are assumed to be representative of conditions at locations between borings. Due to the fact that the area at the borings is very small relative to the overall site, and for other reasons, we make no statement warranting the conditions below our borings or at other locations throughout the site. In addition, we do not warrant that the general strata logged at the borings are necessarily typical of the remaining areas of the site.

Reports shall not be reproduced except in full, without written approval of KTI. Information in this report applies only to the referenced project in its present configuration and location and shall not be used for any other project or location.

TYPICAL FOOTING DETAIL

A = 1/2 footing width or two feet, whichever is greater

B = one footing width or three feet, whichever is greater

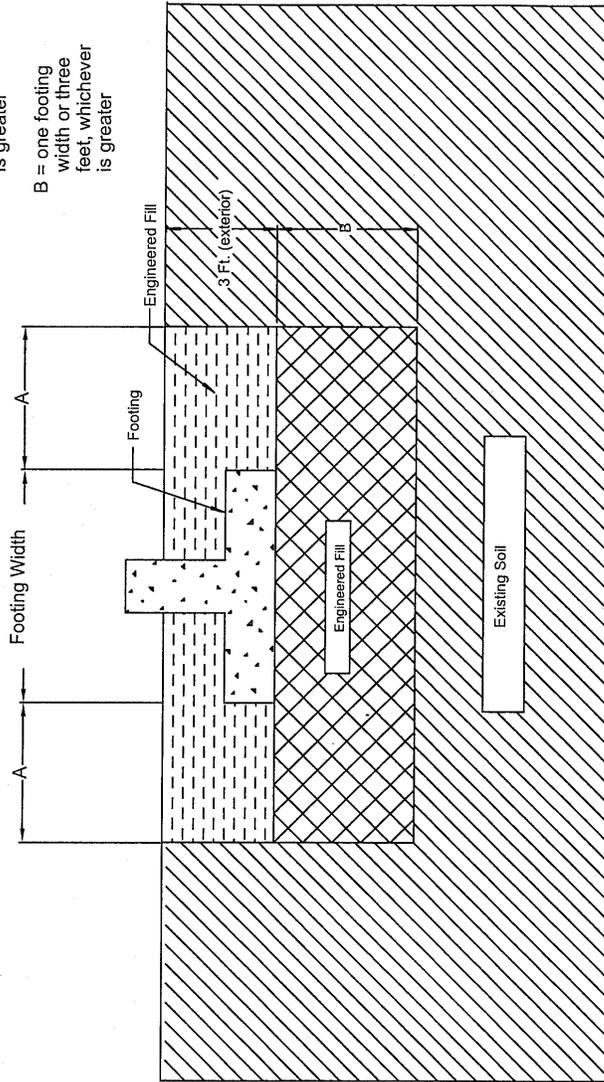


Figure 1



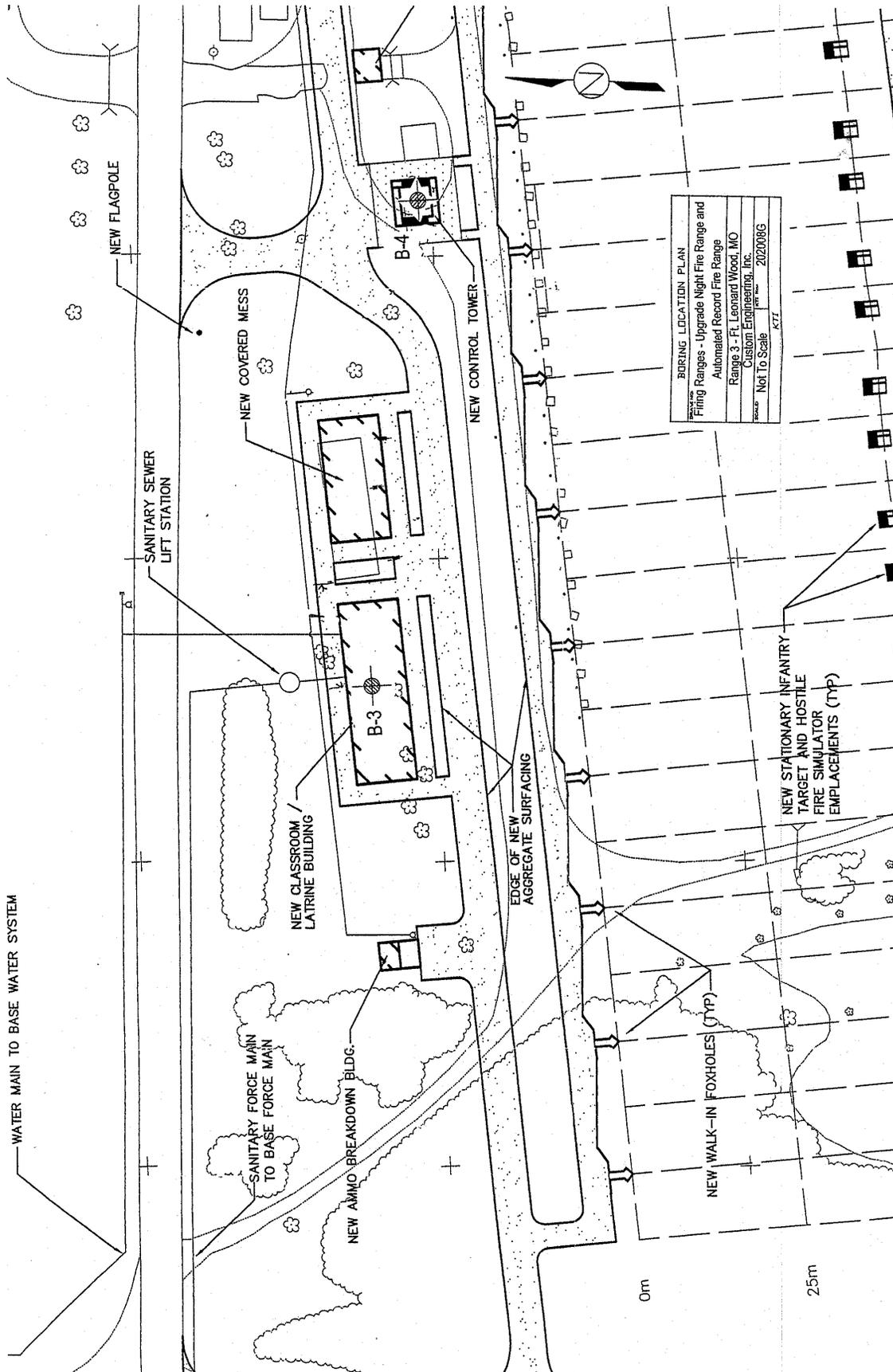


TABLE 1. Subsurface Summary

Boring No.	Range No.	Boring Depth (ft)	Refusal Depth (ft)	Refusal Material	<u>Remarks</u>
B-1	9	20.0			
B-2	9	13.5	13.5	Sandy Dolomitic Limestone	Weathered limestone drilled From 13.0 to 13.5 feet
B-3	3	18.0	18.0	Sandy Dolomitic Limestone	Weathered limestone drilled From 17.5 to 18.0 feet
B-4	3	13.5	13.5	Sandy Dolomitic Limestone	Weathered limestone drilled From 13.0 to 13.5 feet



LOG OF TEST BORING

BORING 1

PROJECT: Firing Ranges

CLIENT: Custom Engineering, Inc.

PROJECT NO.: 202008G

START DATE: 4-16-02

BORING LOCATION: See boring location drawing

METHOD OF DRILLING: 4 inch continuous flight auger

INITIAL WATER: None

DELAYED WATER TABLE:

DATE: 4/30/2002

ELEVATION: 1132.2'

FINISH DATE: 4-16-02

LOGGER: ALP

CAVING: No

DATE CHECKED:

Elevation/ Depth	Soil Symbols Sampler Symbols & Field Test Data	USCS	Description	Sample # & Type	Moist- ure, %	Density pcf	LL	PI	Qu, psf
0			Fat clay, brown, moist, medium						
1131		CH							
3			Fat clay, reddish brown with light brown mottling, with medium sand, dolomitic limestone and chert fragments, moist, very stiff	1, SS	30.1		109	84	
1128	7/8" 11/8" 14/8"	CH							
8			Fat clay, reddish brown, orangish brown, with medium sand, dolomitic limestone and sandy chert fragments, moist, very stiff	2, SS	39.3				
1125	5/8" 7/8" 14/8"	CH							
9			With Mn staining	3, SS	41.2				
1122	4/8" 5/8" 6/8"	CH							
12			Fat clay, light yellowish brown, olive, with silt, Mn nodules, weathered chert fragments, moist, stiff to very stiff	4, SS	41.2				
1119	9/8" 7/8" 8/8"	CH							
15			Drilling discontinued at 20.0'						
1116									
18									
1113									
21									
1110									

Notes:

Figure Number: 1



LOG OF TEST BORING

BORING 2

PROJECT: Firing Ranges

CLIENT: Custom Engineering, Inc.

PROJECT NO.: 202008G

START DATE: 4-16-02

DATE: 4/30/2002

ELEVATION: 1130.2'

FINISH DATE: 4-16-02

BORING LOCATION: See boring location drawing

METHOD OF DRILLING: 4 inch continuous flight auger

INITIAL WATER: None

DELAYED WATER TABLE:

LOGGER: ALP

CAVING: No

DATE CHECKED:

Elevation/ Depth	Soil Symbols Sampler Symbols & Field Test Data	USCS	Description	Sample # & Type	Moist- ure, %	Density pcf	LL	Pl	Qu, psf
0			Fat clay, light brown with reddish brown mottling, with chert fragments, moist, stiff						
1128		CH		1, SS	38.0		124	95	
3	4/8" 5/8" 7/8"								
1125			Fat clay, reddish brown, with coarse sand, abundant dolomitic limestone and chert fragments, Mn staining, moist, hard	2, SS	28.0				
6		CH							
1122	15/8" 18/8" 10/8"								
9			Sandy dolomitic limestone, highly weathered						
1119		Do/ Ls							
12			Auger refusal on sandy dolomitic limestone at 13.5'						
1116									
15									
1113									
18									
1110									
21									
1107									

Notes:

Figure Number: 2



LOG OF TEST BORING

BORING 3

PROJECT: Firing Ranges

CLIENT: Custom Engineering, Inc.

PROJECT NO.: 202008G

START DATE: 4-16-02

BORING LOCATION: See boring location drawing

METHOD OF DRILLING: 4 inch continuous flight auger

INITIAL WATER: None

DELAYED WATER TABLE:

DATE: 4/30/2002

ELEVATION: 92.2'

FINISH DATE: 4-16-02

LOGGER: ALP

CAVING: No

DATE CHECKED:

Elevation/ Depth	Soil Symbols Sampler Symbols & Field Test Data	USCS	Description	Sample # & Type	Moist- ure, %	Density pcf	LL	PI	Qu, psf
0			Fat clay, reddish brown, light brown, brown, trace silt, Fe and Mn nodules, with abundant chert fragments, moist, hard						
90		CH		1, SS	12.8				
87	13/6" 21/6" 26/6"								
84			Fat clay, brown with light yellowish brown mottling, Fe and Mn nodules, with dolomitic limestone and sandy weathered chert fragments, moist, hard	2, SS	36.5				
81	4/8" 80/4"								
78		CH	Becoming light brown, reddish brown	3, SS	33.5				
75	15/6" 15/6" 19/6"								
72		Do/ Ls	Sandy dolomitic limestone, highly weathered						
69			Auger refusal on sandy dolomitic limestone at 18.0'						
Notes:									

Figure Number: 3



LOG OF TEST BORING

BORING 4

PROJECT: Firing Ranges

CLIENT: Custom Engineering, Inc.

PROJECT NO.: 202008G

START DATE: 4-16-02

BORING LOCATION: See boring location drawing

METHOD OF DRILLING: 4 inch continuous flight auger

INITIAL WATER: None

DELAYED WATER TABLE:

DATE: 4/30/2002

ELEVATION: 106.7'

FINISH DATE: 4-16-02

LOGGER: ALP

CAVING: No

DATE CHECKED:

Elevation/ Depth	Soil Symbols Sampler Symbols & Field Test Data	USCS	Description	Sample # & Type	Moist- ure, %	Density pcf	LL	PI	Qu. psf
0		Fill	Fill, mostly fat clay, yellowish brown, with organics, trace rock fragments, moist, stiff	1, SS	36.2		118	91	
106									
3									
102		CH	Fat clay, light brown, reddish brown, Mn nodules, with abundant chert fragments, moist, very stiff	2, SS	33.8		94	66	
6									
96									
9									
96		Do/ Ls	Sandy dolomitic limestone, highly weathered Auger refusal on sandy dolomitic limestone at 13.5'						
12									
93									
15									
90									
18									
87									
21									
84									

Notes:

Figure Number: 4

KEY TO SYMBOLS

Symbol Description

strata symbols



High plasticity
clay



Dolomitic limestone, weathered



Fill

Misc. Symbols



Drill rejection

Soil Samplers



Split Spoon
1 3/8" I.D., 2" O.D.

Notes:

1. Exploratory borings were drilled on April 16, 2002, using 4 inch continuous flight augers.
2. Free water was not encountered in any of the borings at the time of drilling as noted on the logs.
3. Boring locations were selected by Custom Engineering, Inc. Elevations at the boring locations were determined using a benchmark established at the site.
4. The lines representing changes in stratification are approximate. Actual transitions may be gradational.
5. Test results on samples recovered are reported on the logs.
6. These logs are subject to the limitations, conclusions, and recommendations in this report.

SUMMARY OF LABORATORY RESULTS

Boring	Depth Feet	Sample No./Type	Natural Moisture %	Atterberg Limits		Soil Type
				Liquid Limit %	Plasticity Index %	
B-1	3.5 – 5.0	1, SS	30.1	109	84	CH
B-1	8.5 – 10.0	2, SS	39.3			
B-1	13.5 – 15.0	3, SS	41.2			
B-1	18.5 – 20.0	4, SS	41.2			
B-2	3.5 – 5.0	1, SS	38.0	124	95	CH
B-3	3.5 – 5.0	1, SS	12.8			
B-3	8.5 – 10.0	2, SS	36.5			
B-3	13.5 – 15.0	3, SS	33.5			
B-4	3.5 – 5.0	1, SS	36.2	118	91	CH
B-4	8.5 – 10.0	2, SS	33.8	94	66	CH

GLOSSARY OF GEOTECHNICAL TERMS

ALLUVIUM	Sediments deposited by streams, including riverbeds and floodplains
ARGILLACEOUS	Rocks composed of or having a notable portion of fine silt and/or clay in their composition
ATTERBERG LIMITS	Water contents, in percentage of dry weight of soil, that correspond to the boundaries between the states of consistency, i.e. the boundary between the liquid and plastic states (liquid limit) and the boundary between the plastic and solid states (plastic limit)
BEDROCK-IN-PLACE	Continuous rock mass which essentially has not moved from its original depositional position
CALCAREOUS	Containing calcium Carbonate determined by effervescence when tested with dilute hydrochloric acid
CHANNEL SANDSTONE	Sandstone that has been deposited in a streambed or other channel eroded into the underlying beds
COLLUVIAL	Rock debris of various sizes loose from in-place bedrock mass, often shifted down gradient in conjunction with soil
CROSS-BEDDING	Stratification which is inclined to the original horizontal surface upon which the sediment accumulated
FISSILE BEDDING	Term applied to bedding which consists of laminae less than 2 millimeters in thickness
FORMATION	A distinctive body of rock that serves as a convenient unit for study and mapping
FOSSIL DETRITUS	The accumulation of broken fragmented fossil debris
FOSSILIFEROUS	Containing organic remains
GLACIAL ERRATIC	A transported rock fragment different from the bedrock on which it lies, either free or as part of a sediment
GLACIAL TILL	Nonsorted, nonstratified sediment carried or deposited by a glacier
GLACIOFLUVIAL	Primarily deposited by streams from glaciers
GROUP	A lithostratigraphic unit consisting of two or more formations

JOINT	A fracture in a rock along which no appreciable displacement has occurred
LIMESTONE	A sedimentary rock composed mostly of calcium carbonate (CaCO_3)
LOESS	A homogenous, nonstratified, unindurated deposit consisting predominately of silt, with subordinate amounts of very fine sand and/or clay
MICA	A mineral group, consisting of phyllosilicates, with sheetlike structures
MEMBER	A specially developed part of a varied formation is called a member, if it has considerable geographic extent
NODULE	A small, irregular, knobby, or rounded rock that is generally harder than the surrounding rock
PERMEABILITY	The capacity of a material to transmit a fluid
PETROLIFEROUS	Containing or yielding petroleum
RECOVERY	The percentage of bedrock core recovered from a core run length
RELIEF	The difference in elevation between the high and low points of a land surface
RESIDUAL SOIL	Soil formed in place by the disintegration and decomposition of rocks and the consequent weathering of the mineral materials
ROCK QUALITY DESIGNATION (RQD)	Refers to percentage of core sample recovered in unbroken lengths of 4 inches or more
SANDSTONE	Sedimentary rock composed mostly of sand sized particles, usually cemented by calcite, silica, or iron oxide
SERIES	A time-stratigraphic unit ranked next below a system
SHALE	A fine-grained plastic sedimentary rock formed by consolidation of clay and mud
STRATIGRAPHY	Branch of geology that treats the formation, compositions, sequence, and correlation of the stratified rocks as parts of the earth's crust
STYLOLITE	A term applied to parts of certain limestones that have a columnlike development; the "columns" generally being at right angles or highly

inclined to the bedding planes; development is related to pressure-solution occurrences

SYSTEM Designates rocks formed during a fundamental chronological unit, a period

WEATHERING The physical and chemical disintegration and decomposition of rocks and minerals

General Notes

<u>Laboratory Test Symbols</u>	
Symbol	Definition
LL	Liquid Limit (ASTM D4318)
PL	Plastic Limit (ASTM D4318)
PI	Plasticity Index (LL minus PL)
Qu	Unconfined Compressive Strength, Pounds per Square Foot (psf)
Qp	Pocket Penetrometer Reading, Tons per Square Foot (TSF)
RQD	Rock Quality Designation % (Sum of rock core pieces >4 inches/length of core run)

Common Soil Classification Symbols

Clay	
Symbol	Soil Type
CL	Low plasticity clay
CL-ML	Low plasticity clay and silt
CL/CH	Medium plasticity clay
CH	High plasticity clay

Silt	
Symbol	Soil Type
ML	Low
MH	High

Sand	
Symbol	Soil Type
SW	Well graded sand
SP	Poorly graded sand
SM	Silty sand
SC	Clayey sand

Gravel	
Symbol	Soil Type
GW	Well graded gravel
GP	Poorly graded gravel
GM	Silty gravel
GC	Clayey gravel

Descriptive Terminology

Cohesionless Soils	
Relative Density Term	“N” Value
Very Loose	0-4
Loose	5-9
Medium Dense	10-29
Dense	30-49
Very Dense	50 or more

Cohesive Soils	
Relative Density Term	“N” Value
Very Soft	0-2
Soft	3-4
Medium	5-8
Stiff	9-15
Very Stiff	16-30
Hard	>30

Relative Proportions and Sizes

Term	Range
Trace	<5%
A Little	5-15%
Some	15-30%
With	30-50%

Material	Size
Boulder	>12”
Cobble	3” – 12”
Gravel	4.75 – 76.2 mm
Sand	0.075 – 4.75 mm
Silt and Clay	<0.075 mm

PART 3 – CIVIL

3.1 General

Range 3

Civil design and construction at Range 3 consists of, but is not limited to the following:

- Demolition and removal of existing structures.
- Site preparation including removal of miscellaneous pads, clearing, grubbing, and miscellaneous earthwork.
- Layout, design, and construction of a Modified Record Fire Range including grading for infantry target emplacements, and the construction of walk-in foxholes, and illuminated range limit markers.
- Layout of new buildings.
- Layout, design and construction of access roads and walkways.
- Layout, design, and construction of water, sanitary and gas utility systems.
- Grading and storm drainage.
- The design, layout, construction, and maintenance of erosion control measures.
- The layout, design and construction of miscellaneous items such as flagpoles and fencing.

Range 9

Civil design and construction at Range 9 consists of, but is not limited to the following:

- Demolition and removal of existing structures.
- Site preparation including removal of miscellaneous pads, clearing, grubbing, and miscellaneous earthwork.
- Layout, design, and construction of items to alter, add to, and complete the existing Modified Record Fire Range (includes illuminated range limit markers).
- Layout of new buildings.
- Layout, design and construction of access roads and walkways.
- Layout, design, and construction of water, sanitary and gas utility systems.
- Grading and storm drainage.
- The design, layout, construction, and maintenance of erosion control measures.

3.2 Applicable Codes and Standards

The design/build contractor shall follow all applicable codes and standards pertaining to the work to be performed. Specifically, the Contractor shall follow all applicable Corps of Engineers guides for the design of the work. If Corps of Engineering guides are not available, good engineering and construction practices shall be followed.

3.3 Technical Specifications

The design/build contractor shall use and edit standard Corps of Engineers Guide Specifications obtained from the US Army Corps of Engineers web site (<http://www.hnd.usace.army.mil/techinfo>) for all applicable civil items where a Guide Specification exists. If a Guide Specification does not exist for the item, then the design/build contractor will be required to create the technical specifications. All technical requirements contained in the final design shall be incorporated into the edited specifications and/or drawings.

The following is a list of specifications that shall, as a minimum, be used on this project. Other applicable sections as mentioned above, shall be added by the design/build contractor as necessary.

- Section 01356 – Storm Water Pollution Prevention Measures
- Section 02217 – Foundation Preparation
- Section 02220 – Demolition
- Section 02230 – Clearing and Grubbing
- Section 02300 – Earthwork
- Section 02315 – Excavation, Filling, and Backfilling for Buildings
- Section 02316 – Excavation, Trenching, and Backfilling for Utilities Systems
- Section 02510 – Water Distribution System
- Section 02531 – Sanitary Sewers
- Section 02532 – Force Mains and Inverted Siphons; Sewer
- Section 02630 – Storm Drainage System
- Section 02714 – Drainage Layer
- Section 02731 – Aggregate Surface Course
- Section 02821 – Fencing
- Section 02921 – Seeding
- Section 11310 – Pumps; Sewage and Sludge

3.4 General Design and Construction Requirements

3.4.1 Grading and Drainage

Grading and drainage shall be performed in accordance with the recommendations in the geotechnical investigation report performed by the Contractor. No area shall be graded steeper than 3 horizontal to 1 vertical. The designer shall evaluate the existing surface drainage pattern for both Range 3 and Range 9. The designer shall assume a 10-year storm event using the rational method. All ditches shall have as a minimum, a slope of 0.3 percent.

Roof drainage from downspouts shall be directed to splash blocks. All culverts shall be designed to withstand earth loads as well as MS18-44 highway live loads. Culvert location shall be based on design grading. Storm drainage pipe shall be industry standard reinforced concrete pipe or corrugated metal pipe. The designer shall provide calculations showing that the pipe sizes and slopes are adequate. Rip rap or some other type of erosion prevention shall be installed at the end of headwalls and flared end sections.

Positive drainage shall be provided for all areas disturbed during construction. Grade away from new buildings and structures shall be between 5 and 10 percent for the first 3 meters and a minimum of 2 percent in turfed areas thereafter. A drop in grade of 150 mm shall be provided at all doors.

Unsuitable material (mucky soil with cattails) removed from the existing pond area on Range 3 shall be taken to the vicinity of the borrow area to be spread at the completion of the project.

3.4.2 Seeding and Restoration

All disturbed areas not paved within the project boundaries shall be restored to their original condition. Seeding is required in all areas not covered by gravel or by structures. In addition, at Range 9, the entire area bounded by the firing line and the maintenance roads on either side of the range and behind the 300-meter targets shall be reseeded as well. The Ft. Leonard Wood – Environmental Division, shall approve the seeding mixture.

3.4.3 Borrow Material

Borrow material may be obtained from the area to the south of the new 300-meter target line on Range 3. (See drawing C307 for location). The Contracting Officer shall approve the actual location. The borrow source

shall be regraded as needed to match the surrounding area and to provide uniform drainage.

3.4.4 Erosion Control

The design/build contractor shall ensure that all erosion control measures are taken to minimize the erosion at the site. The Contractor will be required to prepare an erosion control plan and submit it to the State of Missouri and the Ft. Leonard Wood Environmental Office. The Contractor will also be required to properly maintain the erosion control measures on the site in accordance with the established control plan. The Contractor shall prepare the erosion control plan in accordance with the criteria, requirements, and procedures of all regulating local, state, and federal entities.

The Contractor shall construct a sedimentation basin in conjunction with the borrow area development on Range 3. Ft. Leonard Wood – Directorate of Public Works, Natural Resources Branch shall be contacted for coordination of the construction of the sedimentation basin.

3.4.5 Timber Disposal

The disposal of timber as a result of the construction at Range 3 shall be coordinated with the Ft. Leonard Wood – Directorate of Public Works, Natural Resources Branch (DPW-NRB). The method of disposal shall be as follows:

Contractor Cuts and Stockpiles Salvageable Timber for Later Disposal by Ft. Leonard Wood – Directorate of Public Works, Natural Resources Branch.

1. Salvageable timber includes all stems and limbs at least 125mm (5-inches) in diameter and 1200mm (4-feet) in length.
2. Once stumps and tops are removed, the stems will be carried via truck or bucket to designated locations as shown on drawing C307. Stems shall not be pushed or drug as this fills the stems with dirt and rock and makes them unsalvageable.
3. All salvageable timber shall be placed at the two locations designated on drawing C307 – on the west side of Range 3 next to the existing gravel road, and on the northeast side of Range 3, near the road. Piles shall not exceed 1200mm (4-feet) in height.
4. DPW-NRB will dispose of the material by contract or firewood permit.
5. The design/build contractor shall dispose of all remaining trees/stumps/woody debris in locations as designated on drawing C307, or burned on site (with the proper permits).

3.4.6 NPDES Permit Regulations

The design/build contractor shall include all appropriate measures, including best management practices, to control pollutants in storm water discharge during construction in accordance with applicable state or local erosion and sediment control requirements. These requirements shall be described in the contract specifications and noted on the contract drawings. For Range 3, the design/build contractor shall furnish drawings, narrative descriptions of the proposed construction measures, and technical information for processing the NPDES permit as follows:

- 8-1/2" x 11" drawings of the base map noting project location and name of nearest receiving water, project site plan indicating area site drainage, outfall of storm water discharges, and construction limits.
- The total area of the site and area of the site that is expected to undergo excavation during the life of the permit.
- Proposed measures, including best management practices to control pollutants in storm water discharges during construction, including a brief description of applicable state and local erosion and sediment control requirements.
- Proposed measures to control pollutants in storm water discharges that will occur after construction operations have been completed, including a brief description of applicable state and local erosion and sediment control requirements.
- An estimate of the runoff coefficient of the site and the increase in impervious area after the construction addressed in the permit application is completed and the nature of the fill material and existing data describing the soil or the quality of the discharge.
- The name of the receiving water and distance from the project site. Legal description of each outfall (section, tract, township, range, county) and receiving water of each outfall.

3.4.7 Staging Areas

3.4.7.1 Range 3

The area across FLW Roadway 30 from Range 3 is designated as a staging area during construction. The exact boundaries of the staging area shall be determined by the Contracting Officer. The design/build contractor may use the existing building located within the staging area during construction. The design/build contractor is responsible for properly maintaining the staging area during construction, and for returning the staging area and existing building to its original condition at the end of construction.

3.4.7.2 Range 9

The staging area for Range 9 is shown on the attached site layout plans. The exact boundaries of the staging area shall be determined by the Contracting Officer. The design/build contractor is responsible for properly maintaining the staging area during construction, and for returning the staging area to its original condition at the end of construction.

3.5 Specific Design and Construction Requirements

3.5.1 Demolition

All items to be demolished shall be properly disposed of off Government property. The design/build contractor shall follow all local, state, and federal regulations for the disposal of all items.

3.5.1.1 Range 3

Demolition activities at Range 3 include, but are not limited to the following:

- Demolition of the following four structures in their entirety, including foundations (per Ft. Leonard Wood, all buildings to be removed are lead and asbestos free):



Photo 4 - Range 3: Buildings 5320 & 5329

- Building 5320 – One-story masonry building with a wood roof.
Building area = 48.0 square meters.
- Building 5329 – One-story masonry building with a wood roof.
Building area = 26.9 square meters.



Photo 5 - Range 3: Building 5321

- Building 5321 – One-story pre-engineered metal building.
Building area = 13.0 square meters.



Photo 6 - Range 3: Building 5324 (Control Tower)

- Building 5324 – Two-story steel control tower. Building area = 28.4 square meters.



Photo 7 - Range 3: Building 5325 (Bleacher Enclosure)

- Building 5325, the bleacher enclosure, will be removed by others. The contractor will be responsible for the removal of the bleacher enclosure foundation.



Photo 8 - Range 3: Existing Foxhole

- Remove or fill in the existing foxholes along the firing line

- Removal of all items that will interfere with the new construction.
- Removal of all items that will interfere with the operation of the new facilities.
- Any pole mounted transformers removed as part of this project shall be turned over to the Ft. Leonard Wood Directorate of Public Works.

3.5.1.2 Range 9

Demolition activities at Range 9 include but are not limited to the following:

- Demolition of the following five structures in their entirety, including foundations (per Ft. Leonard Wood, all buildings to be removed are lead and asbestos free):



Photo 9 - Range 9: Building 5380 (Southeast Corner)



Photo 10 - Range 9: Building 5380 (Southwest Corner)

- Building 5380 – One story pre-engineered metal building on a concrete slab. Building area = 161 square meters.



Photo 11 - Range 9: Building 5381

- Building 5381 – One-story pre-engineered metal building. Building area = 14.6 square meters.



Photo 12 - Range 9: Building 5382 (Control Tower)

- Building 5382 – Two-story steel control tower. Building area = 29.6 square meters. The control tower and associated security fence shall be removed by the contractor after the new control tower is constructed, operational, and accepted by the Contracting Officer.



Photo 13 - Range 9: Building 5385

- Building 5385 – One-story masonry building with a wood roof. Building area = 18.6 square meters.



Photo 14 - Range 9: Building 5386

- Building 5386 – One-story masonry building. Building area = 28.2 square meters.
- A one-story wood shed, located to the north of Building 5381, will be removed by others.



Photo 15 - Range 9: Building 5383 (Bleacher Enclosure)

- Building 5383, the bleacher enclosure, will be removed by others. The contractor will be responsible for the removal of the bleacher enclosure foundation.
- Removal of all items that will interfere with the new construction.
- Removal of all items that will interfere with the operation of the new facilities.
- Any pole mounted transformers removed as part of this project shall be turned over to the Ft. Leonard Wood Directorate of Public Works.

3.5.2 Site Preparation (Range 3 and Range 9)

Besides the demolition requirements mentioned above, site preparation shall include the removal of existing floor slabs, foundations, vegetation, stumps, roots, pavements, base course materials, underground utilities, and other deleterious materials to at least five feet outside the limits of all new structures (including target emplacements which will be provided and installed by others). Trees shall be removed as necessary on Range 3 to allow adequate site lines to all target emplacements.

3.5.3 Range 3 – Modified Record Fire Range

The layout for the Modified Record Fire Range will consist of 16 lanes. Each lane is 20 meters wide. A walk-in type foxhole is to be located in the center of each lane at the firing line. Preparations for nine target emplacements are to be completed in each lane. Target emplacements are to be sited according to the layout shown in the standard layout drawing in the *Design Manual for Remoted Target System (RETS) Ranges*. Target emplacement locations shall conform as closely as possible to the prescribed distances, but may vary by up to 5 meters to avoid undesirable locations. The Design / Build Contractor shall grade the area for the target emplacements. The emplacements will be provided and installed by others. See drawing C1002 for suggested grading in the vicinity of the target emplacements. All grading for the target emplacements shall be coordinated with the targetry contractor. The design/build contractor shall provide illuminated range limit markers at the right and left firing limits.

Although an emplacement layout and grading plan is provided as part of this RFP on drawings C305 and C306, the design/build contractor may elect to present their own site target emplacement plan to the Government's representative. With this plan, the Contractor must perform a graphical and / or numerical line-of-site analysis for all targets and firing positions. Details on the criteria for the line-of-site analysis are presented in the *Design Manual for Remoted Target System (RETS) Ranges*. The design/build contractor is responsible for confirming (or altering as necessary) all elevations that are presented in the emplacement layout and grading plan on drawings C305 and C306.

3.5.3.1 Walk-In Foxholes

Reinforced concrete walk-in foxholes shall be located in the middle of each lane at the firing line (0 meters downrange). The floor of the walk-in foxhole shall be higher than the surrounding terrain to allow positive drainage out of the foxhole. For suggested design, see drawing C1002.

3.5.3.2 Infantry Target Emplacements

Infantry target emplacements shall be installed by others in the locations shown in the *Design Manual for Remoted Target System (RETS) Ranges* and as site adapted by the design/build contractor. The design/build contractor shall grade the area where the emplacements are to be placed. The berm size for the target emplacements shall be as shown on drawing C1002

The design/build contractor shall provide lane markers of permanent construction between lanes. Small lane markers shall be provided between each lane at the 50-meter target line and shall be 457 mm wide and 305 mm in height. Large lane markers shall be provided between each lane at the 150-meter and 300-meter target line. The large lane markers shall be diamond shaped with 1.219 meter per side. The lane markers shall be readily visible from the firing line and shall not obstruct line-of-sight to the target emplacements.



Photo 16 - Small Lane Marker Example



Photo 17 - Large Lane Marker Example

3.5.3.3 Illuminated Range Limit Markers

The illuminated range limit markers shall be constructed at the left and right firing limit point downrange of the 300-meter mark of Range 3. The illuminated range limit markers shall consist of painted plywood signs on metal or wood posts, and a small concrete emplacement for the floodlight used to illuminate the markers. For the suggested design, see drawing C1001.

3.5.4 Range 3 – Illuminated Flagpole

An illuminated flagpole, a minimum of 6.1 meters in height, shall be located near the entrance road to the range. For the suggested design, see drawing C1001.

3.5.5 Range 9 – Modified Record Fire Range

Range 9 is currently an operational Modified Record Fire Range. This Range consists of 15 lanes with 9 targets in each lane. Each lane also has a walk-in foxhole in the center of each lane at the firing line. In order to complete this Range, the design/build contractor shall design and construct illuminated range limit markers at the right and left firing limit points downrange of the 300-meter mark and modify the existing foxholes.

3.5.5.1 Illuminated Range Limit Markers

The illuminated range limit markers shall be constructed at the left and right firing limit point downrange of the 300-meter mark of Range 9. The illuminated range limit markers shall consist of painted plywood signs on metal or wood posts, and a small concrete emplacement for the floodlight used to illuminate the markers. For the suggested design, see drawing C1001.

3.5.5.2 Modification of Existing Walk-In Foxholes

The existing 15 walk-in foxholes on Range 9 shall be modified by adding 152 mm thick (minimum) wing-walls and ladder type steps at the entrance to each foxhole. A proposed design is shown in drawing C1002. The final design shall be coordinated with the Ft. Leonard Wood – Range Division.



Photo 18 - Range 9: Existing Walk-In Foxhole (Front View)



Photo 19 - Range 9: Existing Walk-In Foxhole (Top View)

3.5.6 Aggregate Surfaced Roads – Ranges 3 and 9

Aggregate surfaced roads and parking areas shall consist of a minimum of 203 mm of graded crushed aggregate surface course over 150 mm of compacted subgrade. Roadway widths shall be as shown on the range layout plans. The roadway locations shall be as shown on the range layout plans, or as modified by the Contracting Officer. See the Geotechnical section of this RFP for additional information.

The new maintenance roads at Range 9 constructed behind the target emplacements at the 75, 200 and 300-meter target lines shall be constructed above the existing grade in their entirety. No excavation for the maintenance roads in these locations is permitted due to the presence of existing below-grade cable and conduit for the existing range targetry.

Aggregate walks shall consist of a minimum of 100 mm of graded crushed aggregate surface course over 150 mm of compacted subgrade. All walkways shall be a minimum of 2 meters wide. See the Geotechnical section of this RFP for additional information.

3.5.7 Utility Requirements

3.5.7.1 Water Service

Due to the requirement for waterborne latrines at both Range 3 and Range 9, water service will be needed. Water service to both Range 3 and Range 9 is currently not available. The design/build contractor shall connect to the existing

Ft. Leonard Wood water system and construct a new water main to serve Ranges 3 and 9. Service lines shall be constructed from the new water main to the facilities at Ranges 3 and 9.

3.5.7.1.1 Water Main

The design/build contractor shall design and construct a new water main that connects to the existing Ft. Leonard Wood water system near the intersection of FLW 1 and FLW 28, and extends to Range 9. A proposed water main routing is shown on drawings C2001 through C2003. The new water main shall be 305 mm (12-inches) in diameter except for a portion of the new water main along FLW 30 that extends to Range 3, which shall be a minimum of 152 mm (6-inches) in diameter. At Ranges 3 and 9, the design/build contractor shall install shut off valves along the water main, along with a 6-inch connection with a valve to allow for water service connections that will be performed as part of this contract. In addition, at existing Ranges 4, 5, 6, 7, 8, and the entrance road to Range 31, the design/build contractor shall construct shut-off valves on the water main, along with 6-inch connections with a valve and cap to allow for future connections to the main line. At Ranges 3 and 9, the new water mains shall terminate in blow-off assemblies and a valve and cap to allow for future extensions of the water main.

The connection to the existing water system shall be coordinated with the Ft. Leonard Wood Directorate of Public Works. The new water main routing, pipe materials, and pipe sizes shall be approved by the Ft. Leonard Wood Directorate of Public Works. All new water lines shall be plastic pipe with tracer wire and warning tape. Thrust blocks are required. No cathodic protection of the water main is required. The design/build contractor shall install all valves (including backflow prevention) and other fittings necessary (such as blow-off assemblies) for the proper operation of the new water main. The design/build contractor shall also furnish and install all temporary blow-off assemblies and all fittings necessary for temporary connection for pressure testing, chlorination, dechlorination, and flushing of the new water main. Local and State regulations, and Corps of Engineer's guidelines shall be followed in the design and construction of the water main.

The water mains shall have a minimum cover of 900 mm (3-feet). When constructing the new water main in the vicinity of sanitary sewers, 3.05-meter (10-foot) horizontal clearance must be maintained.

3.5.7.1.2 Water Service Lines

Range 3

A fire hydrant shall be constructed across FLW Roadway 30 from Range 3. The design/build contractor shall size and construct the service line(s) from the new water main to the facilities at Range 3. The design/build contractor shall calculate the amount of water required for the classroom building by taking into account the anticipated rate of water flow from all fixtures, the average duration of flow when the fixture is used, and the frequency with which the fixtures are likely to be used. The design/build contractor shall design and construct all necessary systems to provide water service to the latrine and small bathroom.

In addition, yard hydrants shall be placed near the new covered mess, the new bleacher enclosure, and the new ammunition breakdown building at Range 3.

A proposed service line routing is shown on drawing C303. The new water service line routing, pipe materials, and pipe sizes shall be approved by the Ft. Leonard Wood Directorate of Public Works. All new water lines shall be plastic pipe with tracer wire and warning tape. Thrust blocks are required. No cathodic protection of the service lines are required. The Contractor shall install all valves (including backflow prevention and pressure reduction) and other fittings necessary for the proper operation of the new service lines.

The water service lines shall have a minimum cover of 900 mm (3-feet). When constructing the new water service lines in the vicinity of sanitary sewers, 3.05-meter (10-foot) horizontal clearance must be maintained.

Range 9

A fire hydrant shall be constructed on the east side of FLW 1 near the entrance to Range 9. The design/build contractor shall size and construct the service line(s) from the new water main to the facilities at Range 9. The design/build contractor shall calculate the amount of water required for the classroom building by taking into account the anticipated rate of water flow from all fixtures, the average duration of flow when the fixture is used, and the frequency with which the fixtures are likely to be used. The design/build contractor shall design and construct all necessary systems to provide water service to the latrine and small bathroom.

Yard hydrants shall be placed near the new covered mess, the new bleacher enclosure, and the new ammunition breakdown building at Range 9.

A proposed service line routing is shown on drawing C903. The new water service line routing, pipe materials, and pipe sizes shall be approved by the Ft. Leonard Wood Directorate of Public Works. All new water lines shall be plastic pipe with tracer wire and warning tape. Thrust blocks are required. No cathodic protection of the service lines are required. The Contractor shall install all valves (including backflow prevention and pressure reduction) and other fittings necessary for the proper operation of the new service lines.

The water service lines shall have a minimum cover of 900 mm (3-feet). When constructing the new water service lines in the vicinity of sanitary sewers, 3.05-meter (10-foot) horizontal clearance must be maintained.

3.5.7.2 Sanitary Sewer Service

Due to the requirement for waterborne latrines at both Range 3 and Range 9, sanitary sewer service will be needed. Sanitary sewer service to both Range 3 and Range 9 is currently not available. The design/build contractor shall connect to the existing Ft. Leonard Wood sanitary sewer system via separate lines from Range 3 and Range 9. It is anticipated that the system from Range 3 will consist of a lift station and force main, while the system from Range 9 will consist of a combination of gravity sewers, a lift station, and a force main.

3.5.7.2.1 Sanitary Sewer – Range 3

The design/build contractor shall design and construct a sanitary sewer system, including a lift station with redundant systems (dual pumps at a minimum), to handle the anticipated flows from Range 3. The design/build contractor shall calculate the amount of sanitary waste generated at Range 3 by taking into account the anticipated rate of water flow from all fixtures connected to the sewer system, the average duration of flow when the fixture is used, and the frequency with which the fixtures are likely to be used. The design/build contractor shall design and construct all necessary systems to provide sanitary sewer service to the latrine and small bathroom in the classroom building. The system shall be designed so as to prevent the waste in the force main from becoming septic. Local and State regulations, and Corps of Engineer's guidelines shall be followed in the design and construction of the sanitary sewer system.

The sanitary sewer force main from Range 3 to the existing Base system shall be a minimum of 102 mm (4-inches) in diameter. Plastic pipe with a tracer wire and warning tape shall be used for the force main. Cathodic protection is not required. A minimum distance of 3.05 meters (10-feet) shall be maintained between parallel water and sanitary sewer lines. At points where sanitary sewers cross water mains with less than 605 mm (2-

feet) of clearance, the sanitary sewer shall cross under the water main and shall be designed using ductile iron pipe or concrete pressure pipe, or encased in concrete for a minimum of 3.05 meters (10-feet) in each direction. A proposed routing of the sanitary sewer system from Range 3 is shown on drawing C2004.

3.5.7.2.2 Sanitary Service – Range 9

The design/build contractor shall design and construct a sanitary sewer system, including lift stations as necessary with redundant systems (dual pumps minimum), to handle the anticipated flows from Range 9. It is anticipated that the sanitary sewer system from Range 9 will be a combination of gravity sewers, lift stations, and force mains. Unlike Range 3, the sanitary sewer piping (both gravity and force main), along with wet well sizing for any lift stations shall be sized to accept not only the sanitary waste from Range 9, but from six potential sources downstream of Range 9 (Ranges 4, 5, 6, 7, 8, and 31), and nine potential upstream sources (Ranges 10, 11, 12, 13, 15, 16, 17, 18, and the Range Control Complex) as well. At a minimum, pump sizing for the lift stations shall be based on the sanitary flows generated at Range 9. The design/build contractor shall calculate the amount of sanitary waste generated at Range 9 by taking into account the anticipated rate of water flow from all fixtures connected to the sewer system, the average duration of flow when the fixture is used, and the frequency with which the fixtures are likely to be used. The design/build contractor shall assume that the flow generated by each potential upstream and downstream source is equal to that generated by Range 9 unless otherwise directed by the Contracting Officer. The system shall be designed so as to prevent the waste in the force main from becoming septic.

The design/build contractor shall design and construct all necessary systems to provide sanitary sewer service to the latrine and small bathroom in the classroom building at Range 9. Local and State regulations, and Corps of Engineer's guidelines shall be followed in the design and construction of the sanitary sewer system.

Gravity sewer line portions of the sanitary system shall be a minimum of 203 mm (8-inches) in diameter. Manholes shall be installed at the end of each line, changes in pipe size, and at changes in alignment. The distances between manholes shall not be greater than 120 meters (400 feet). The invert of the discharge pipe on the manhole farthest upstream on the gravity sewer portion of the system shall be a minimum of 2.44 meters (8-feet) below existing grade to allow for future connection of potential upstream sources. Force main portions of the system shall be a minimum of 102 mm (4-inches) in diameter. Plastic pipe with a tracer wire and warning tape shall be used for both the force main and gravity sewer

portions of the system. Cathodic protection is not required. A minimum distance of 3.05 meters (10-feet) shall be maintained between parallel water and sanitary sewer lines. At points where sanitary sewers cross water mains with less than 605 mm (2-feet) of clearance, the sanitary sewer shall cross under the water main and shall be designed using ductile iron pipe or concrete pressure pipe, or encased in concrete for a minimum of 3.05 meters (10-feet) in each direction. A proposed routing for the sanitary sewer system from Range 9 (and future line from Ranges 4, 5, 6, and 7) is shown on drawings C2004, C2005, and C2006.

3.5.7.3 Gas Service

Heating of several buildings will be provided by propane furnaces. The design/build contractor shall provide 1,900 liter (500-gallon) liquid propane tanks and buried polyethylene pipe with tracer wire and warning tape at each building requiring gas service. Annodeless risers shall be provided at the tank and at the building. A high-pressure regulator shall be provided at the tank, and a low-pressure regulator shall be provided at the building. The color of the tanks shall be as designated by the Ft. Leonard Wood – DPW Office. The design/build contractor shall coordinate the gas service requirements with the Ft. Leonard Wood Directorate of Public Works and the Base gas supplier.

3.5.8 Site Layouts

The design/build contractor shall use the site layout drawings as a guide in locating the buildings, roads, and other structures required for this project. The design/build contractor shall also utilize the *Design Manual for Remoted Target System (RETS) Ranges*, the Ft. Leonard Wood Design Guide, and Army Regulation 385-64, *Ammunition and Explosives Safety Standards* as guides. The site layouts shall be approved by the Ft. Leonard Wood Range Division. Specific building location requirements are listed below.

3.5.8.1 Control Tower

The control tower for each range shall be located between 15 and 50 meters behind and near the center of the firing line in an area offering an unobstructed view of the firing line and visibility of the entire downrange area.

3.5.8.2 Ammo Breakdown Building

The ammo breakdown building for each range shall meet Army Regulation 385-64 requirements, and be based on the classification of the ammunition items involved. For both Range 3 and Range 9, 5.56 mm non-explosive rounds will be used. AR 385-64 provides the intraline distance required. Once this quantity-distance is known, the ammo breakdown building must be sited as follows:

- Not less than the intraline distance from the range firing line, range support facilities, and other exposed sites associated with the range.
- Not less than the inhabited building distance from the exposed sites of the range, including the installation boundary.
- Not less than public traffic route distance from any public street, road, or highway (including FLW 1).
- Beyond the quantity-distance arcs from existing potential explosives sites on Ft. Leonard Wood.

3.5.8.3 Bleacher Enclosure

The bleacher enclosure for each range shall be located near the firing line, and shall face downrange.

3.5.8.4 Compressor / Controls Building (Range 3 Only)

The Compressor / Controls building at Range 3 shall be located within 25 meters of the new control tower. (The Compressor / Controls building and foundation will be designed and constructed by others.) The location shall be coordinated with the Contracting Officer. The area where the Compressor / Controls building is to be located shall be graded by the design/build contractor.

3.5.9 Fencing

A 1.83-meter high security fence topped with three strand of barbed wire shall be placed around the new control towers. The new fence shall be grounded. Access to the towers shall be through a lockable gate. A 1 meter wide, 150 mm deep gravel bed with weed control barrier shall be provided at the base of the fence.

PART 4 – ARCHITECTURAL

4.1 General

This project consists of designing and constructing several different buildings to support the training missions at Ranges 3 and 9. The buildings to be designed and constructed include the following:

Range 3

- Control Tower
- Classroom Building (with Restroom for Cadre and Latrine for Trainees)
- Ammunition Breakdown Building
- Covered Mess
- Bleacher Enclosure

Range 9

- Control Tower
- Classroom Building (with Restroom for Cadre and Latrine for Trainees)
- Ammunition Breakdown Building
- Covered Mess
- Bleacher Enclosure

The design for the buildings shall be in accordance with the U.S. Army Corps of Engineers Design Manual for Remoted Target System (RETS) Ranges except as noted below, and elsewhere in this RFP.

4.1.1 Exceptions to the *Design Manual for Remoted Target System (RETS) Ranges*

The following is a partial list of exceptions to the standard designs as shown in of the *Design Manual for Remoted Target System (RETS) Ranges*. Other exceptions are located in the design specific sections of this RFP.

- The classroom building shall be sized and shall have interior rooms as described elsewhere in the Architectural section.
- The latrine for trainees located in the classroom building shall be sized to accommodate three male toilets, three urinals, and four female toilets. The latrine shall be accessible from the outside of the classroom building only.
- The ammunition breakdown building shall not have an exterior slab-on-grade beneath the canopy. An aggregate surface shall be used.
- The covered mess shall be a custom design as described elsewhere in the Architectural and Structural sections of this RFP.
- The bleacher enclosure at each range shall be sized for 300 persons.

- The floor of the bleacher enclosure shall be an aggregate surface, not a slab-on-grade.

4.2 Applicable Codes and Standards

Except as specified otherwise in this RFP, the design and construction of the facilities shall conform to the latest editions (as of the date of the RFP) of the following. Major criteria references for building design are listed below; additional requirements are listed throughout the RFP.

- Building Code: International Building Code (IBC), latest Edition and Supplements.
- Fire Protection and Life Safety: International Fire Code (IFC), Latest Edition and Supplements
- CEHNC 1110-1-23, U.S. Army Corps of Engineers Design Manual for Remoted Target System (RETS) Ranges
- Department of Defense Antiterrorism / Force Protection Standards

4.3 Technical Specifications

The design/build contractor shall use and edit standard Corps of Engineers Guide Specifications obtained from the US Army Corps of Engineers web site (<http://www.hnd.usace.army.mil/techinfo>) for all applicable architectural items where a Guide Specification exists. If a Guide Specification does not exist for the item, then the design/build contractor will be required to create the technical specifications. All technical requirements contained in the final design shall be incorporated into the edited specifications and/or drawings. All specifications shall be submitted to the Contracting Officer's Representative for review and approval.

The following is a list of specifications that shall be used on this project. Other applicable sections as mentioned above, shall be added by the design/build Contractor as necessary.

- Section 05500 – Miscellaneous Metal
- Section 06100 – Rough Carpentry
- Section 06200 – Finish Carpentry
- Section 07413 – Metal Roof and Siding
- Section 07416 – Structural Standing Seam Metal Roof (SSSMR) System
- Section 07600 – Sheet Metalwork, General
- Section 07900 – Joint Sealing
- Section 08100 – Steel Doors and Frames
- Section 08520 – Aluminum and Environmental Control, Aluminum Windows
- Section 08700 – Builder's Hardware
- Section 09250 – Gypsum Wallboard

- Section 09900 – Painting, General
- Section 09915 – Color Schedule
- Section 10160 – Toilet Partitions
- Section 10800 – Toilet Accessories
- Section 13120 – Standard Metal Building Systems

4.4 General Design and Construction Requirements

4.4.1 Safety and Security

- Follow Ft. Leonard Wood and Department of Defense procedures for Anti-Terrorism / Force Protection measures.
- Maintain visibility at building openings from normally occupied areas.
- In addition to exterior door locks, provide function locks at classrooms, offices, mechanical rooms, restrooms, and storage rooms.
- Provide and locate fire extinguishers per OSHA and IFC requirements.

4.4.2 Building Envelope

4.4.2.1 Roofs

- It is a project requirement that roofs not leak. In order to ensure the maximum in quality control, only manufacturer certified installers shall be used on each roof system.
- Flashing locations shall be reviewed and roof perimeters and penetrations shall be carefully detailed.
- Provide rain and snow diverters or awnings at all building exits.
- Sloped roofs shall have a minimum slope of 2 on 12 on all buildings. Roofing systems shall have Underwriters Laboratory (UL) Class A rating for fire resistance and Factory Mutual (FM) 1-90 fire and wind resistance ratings.
- All gutters and downspouts shall be factory finished metal, and comply with SMACNA Architectural Sheet Metal Manual. A 20 year manufacturer's finish warranty shall be provided.

4.4.2.2 Exterior Walls

- Exterior walls shall be metal/foam sandwich panels. See the *Design Manual for Remoted Target System (RETS) Ranges*.

4.4.2.3 Doors and Windows

- Door frames shall match door material, finish, and construction grade.
- Insulated steel doors shall be provided for all exterior doors.
- All windows shall be operable unless noted otherwise.
- Coordinate lock system on all doors with the Contracting Officer.

4.4.3 Metal Buildings – General

The metal buildings for this project includes both pre-engineered and custom designed buildings. The pre-engineered buildings shall be the product of a recognized metal building systems manufacturer chiefly engaged in the practice of designing and fabricating metal building systems. Building dimensions shall be as standard with the manufacturer and not less than those indicated, but exceeding the indicated dimensions only by the amount of the closest standard size thereto.

4.4.4 Exterior Finish and Color Schedule

The following guidelines shall be used for all exterior finishes and colors. All finishes and colors shall be approved by the Contracting Officer.

EXTERIOR FINISH AND COLOR SCHEDULE		
ITEM	MATERIAL	COLOR
Exterior Wall Panels	Metal	Match Fed Spec Color 20400 (Tan)
Metal Roof Panels	Metal	Match Fed Spec Color 27780 (White)
Roof Vents	Metal or PVC	Match Fed Spec Color 27780 (White)
Rake and Eave Facia	Metal	Match Fed Spec Color 27780 (White)
Gutters and Downspouts	Metal	Match Fed Spec Color 20400 (Tan)
Ext Flashing at Roof & Eave	Metal	Match Fed Spec Color 27780 (White)
Ext Louvers	Steel or Alum	Match Fed Spec Color 20400 (Tan)
Ext Doors/Windows/Frames	Steel or Alum	Match Fed Spec Color 10080 (Dark Brown)
Ext Flashing at Doors/Windows	Steel or Alum	Match Fed Spec Color 10080 (Dark Brown)
Misc. Sealant		Match Darkest Adjacent Surface
Misc. Metals	Metal	Match Darkest Adjacent Surface
Outdoor Mechanical Equip.	Metal	Match Fed Spec Color 10080 (Dark Brown)
Outdoor Electrical Equip.	Metal	Dark Green – Per Contracting Officer
Propane Tank	Metal	Per Contracting Officer

4.5 IBC Classifications and General Code Issues

4.5.1 Control Tower

- Area: 23 square meters
- Occupancy Group: B

4.5.2 Classroom Building

- Area: 251 square meters (Including latrine for trainees)
- Occupancy Group: Mixed Occupancy (Classroom Area: Group A-3, Office Space: Group B, Storage Area: Group S-2)
- Number of Occupants: 200

4.5.3 Ammo Breakdown Building

- Area: 7.2 square meters
- Occupancy Group: H-1

4.5.4 Covered Mess

- Area: Approximately 167 square meters
- Occupancy Group: A-5

4.5.5 Bleacher Enclosure

- Area: Per Design / Build Contractor
- Occupancy Group: A-5

4.6 Specific Building Descriptions and Criteria

4.6.1 Control Tower

4.6.1.1 General Description

A new control tower shall be located at Range 3 and at Range 9. The control tower shall be designed as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook standard design. The control tower will house the RETS range control system. Each control tower shall be three-stories in height (8,300 mm from grade to top of roof) with an observation platform on the second story. The upper story of the control tower shall have a minimum of 23 square meters of interior space in order to accommodate functional requirements. The only tower furnishings to be supplied by the design/build contractor are tables which are detailed in the *Design Manual for Remoted Target System (RETS) Ranges* standard drawings. The building structure shall be painted steel.

The concrete floor slab shall be insulated with a minimum of R-30 rigid insulation applied to the exposed underside of the slab.

4.6.1.2 Exterior Design Criteria

- a. Exterior Walls - Exterior walls of the control room shall be insulated metal panels
- b. Roof – The roof shall be a standing seam metal roof system
- c. Windows and Doors – The exterior door shall be insulated, galvanized, hollow steel construction. A concrete pad shall be located at the bottom of the control tower stairs. Exterior windows will be aluminum-sliding type with insulated glass and steel guards installed on the exterior for intrusion resistance. Louvers will be either operable or fixed steel type, standard with the metal building manufacturer.

4.6.1.3 Interior Design Layout and Criteria

- a. Floors – Floors shall be as shown in the *Design Manual for Remoted Target System (RETS) Ranges* standard drawings. Interior concrete surfaces shall be sealed.
- b. Interior Finish

Interior wall finish shall be pre-finished metal liner panels. The color shall be approved by the owner.
- c. Ceilings – Ceilings shall be left unfinished, with the vinyl batt insulation facing exposed to view.
- d. Lighting – Lighting shall be as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook and as described in the electrical section of this RFP.
- e. Heating, Ventilation and Air Conditioning – HVAC systems shall be as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook and as described in the mechanical section of this RFP.
- f. Power and Communications – Power and communications systems shall be as shown in the *Design Manual for*

Remoted Target System (RETS) Ranges handbook and as described in the electrical section of this RFP.

4.6.2 Classroom Building

4.6.2.1 General Description

One new classroom building shall be located at each range. The classroom building shall be similar (except for size and interior layout) to the standard instruction building as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook. The classroom building shall be one-story with a minimum eave height of 4.27 meters and approximately 251 square meters in size (including the latrine for trainees). The interior of the building will consist of a classroom area, an office, an externally accessible storage area, a small bathroom area for cadre (internally accessible), an externally accessible latrine for trainees, and a mechanical room. The office area, which shall be directly accessible through the interior only, shall be sized to accommodate four personnel, two standard office-sized desks, and two file cabinets. The furniture will be supplied by others. The storage area shall be approximately 21 square meters in size and shall be accessible through both interior and exterior doors. The internally accessible bathroom shall be sized to accommodate one toilet and one sink. The externally accessible latrine shall be designed to accommodate three male toilets, three urinals, and four female toilets. Four sinks shall be located in the male latrine. Three sinks shall be located in the female latrine. The mechanical space shall be sized for the building mechanical equipment and for water well pump controls and chlorination equipment (see the civil section of this RFP for additional information). The remainder of the building space shall be used as a classroom area. The classroom area shall be sized for 200 persons sitting on bleachers. Each bleacher can seat 50 people and is approximately 3.05 meters by 6.10 meters by 1.52 meters high. Bleachers will be furnished by others under separate contract.

4.6.2.2 Exterior Design Criteria

- a. Exterior Walls - Exterior walls shall be insulated metal panels
- b. Roof – The roof shall be a standing seam metal roof system
- c. Windows and Doors – The exterior door shall be insulated, galvanized, hollow steel construction. A concrete pad shall be located in front of all exterior doors. Exterior windows will be aluminum-sliding type with insulated glass and steel guards installed on the exterior for intrusion resistance.

Louvers will be either operable or fixed steel type, standard with the metal building manufacturer.

4.6.2.3 Interior Design Layout and Criteria

- a. Floors – Floors shall be as shown in the *Design Manual for Remoted Target System (RETS) Ranges* standard drawings. Interior concrete surfaces shall be sealed.

- b. Interior Finish

Interior wall finish shall be a pre-finished metal liner panel. Pre-finished metal liner panels with sound deadening insulation shall be used on interior walls. Interior wall finish in the latrine for trainees shall be stainless steel wall liner panels. Hollow steel doors and frames shall be used throughout building interiors. All interior colors shall be approved by the Contracting Officer.

For the restroom and latrine areas, provide stainless steel toilet accessories: towel dispenser at the sink, powdered soap dispenser at sinks, toilet tissue dispenser, waste receptacle, mirrors, and napkin disposal.

- c. Ceilings – Ceilings shall be left unfinished, with the vinyl batt insulation facing exposed to view. The exception shall be in the office area and bathroom area. In these spaces, suspended acoustical lay-in panel ceilings shall be provided.
- d. Lighting – Lighting shall be as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook and as described in the electrical section of this RFP.
- e. Heating, Ventilation and Air Conditioning – HVAC systems shall be as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook and as described in the mechanical section of this RFP.
- f. Plumbing – Plumbing systems for the small bathroom shall be as described in the mechanical section of this RFP.
- g. Power and Communications – Power and communications systems shall be as shown in the *Design Manual for*

Remoted Target System (RETS) Ranges handbook and as described in the electrical section of this RFP.

4.6.3 Ammo Breakdown Building

4.6.3.1 General Description

One new ammo breakdown building shall be located at each range. The ammunition breakdown building shall be designed as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook standard design. The only exception is that there shall not be a concrete pad beneath the main canopy structure. The area beneath the main canopy shall be aggregate surfaced. Each ammunition breakdown building shall be one story, with a floor area of approximately 7.2 square meters. See the *Design Manual for Remoted Target System (RETS) Ranges* for additional information.

4.6.3.2 Exterior Design Criteria

- a. Exterior Walls - Exterior walls shall be insulated metal panels
- b. Roof – The roof shall be a standing seam metal roof system
- c. Doors – The exterior door shall be insulated, galvanized, hollow steel construction. Bi-fold metal doors shall be used at the ammunition issue point. A concrete pad shall be located in front of the door. Louvers will be either operable or fixed steel type, standard with the metal building manufacturer.

4.6.3.3 Interior Design Layout and Criteria

- a. Floors – Floors shall be as shown in the *Design Manual for Remoted Target System (RETS) Ranges* standard drawings. Interior concrete surfaces shall be sealed.
- b. Interior Finish

Interior wall finish shall be a pre-finished metal liner panel. Color shall be approved by the Contracting Officer.
- c. Ceilings – Ceilings, including the canopy area shall be pre-finished metal liner panels.

- d. Lighting – Lighting shall be as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook and as described in the electrical section of this RFP.
- e. Heating, Ventilation and Air Conditioning – HVAC systems shall be as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook and as described in the mechanical section of this RFP.
- f. Power and Communications – Power and communications systems shall be as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook and as described in the electrical section of this RFP.

4.6.4 Covered Mess

4.6.4.1 General Description

One new covered mess facility shall be constructed at each range. The covered mess facility is a custom design and is different from the standard shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook. The design shall be similar to the covered mess facility that is located at Range 20 at Ft. Leonard Wood. The covered mess will consist of a slab-on-grade with a metal frame (no walls) and a metal roof. The covered mess is approximately 167 square meters (9.14 meters by 18.29 meters with an eave height of 2.44 meters) and shall be sized by the design/build contractor to accommodate 16 picnic tables and circulation space. (The picnic tables will be supplied by others.)



Photo 20 - Covered Mess Exterior (From Range 20)



Photo 21 - Covered Mess Interior (From Range 20)

4.6.4.2 Exterior Design Criteria

- a. Exterior Walls – There are no exterior walls for this structure.
- b. Roof – The roof shall be an uninsulated standing seam metal roof system

- c. Doors – There are no doors for this structure.

4.6.4.3 Interior Design Layout and Criteria

- a. Floors – Floors shall be sealed concrete slab-on-grade.
- b. Interior Finish

There are no interior walls for this structure.
- c. Ceilings – There are no ceilings in this structure.
- d. Lighting – Lighting shall be as described in the electrical section of this RFP.
- e. Electrical – Electrical systems shall be as described in the electrical section of this RFP.

4.6.5 Bleacher Enclosure

4.6.5.1 General Description

Covered bleacher enclosures shall be constructed at both ranges. The bleacher enclosure at each range shall have a capacity of 300 persons. The bleacher enclosures shall be a pre-engineered metal building with a metal roof, one back wall and two sidewalls with openings similar to those shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook. Bleachers will be supplied by others.

4.6.5.2 Exterior Design Criteria

- a. Exterior Walls – Exterior walls will be uninsulated metal panels.
- b. Roof – The roof shall be an uninsulated standing seam metal roof system
- c. Doors – There are no doors for this structure.

4.6.5.3 Interior Design Layout and Criteria

- a. Floors – The area beneath the bleacher enclosure shall be aggregate surfaced..
- b. Interior Finish

There are no interior walls for this structure.

- c. Ceilings – There are no ceilings in these structures.

PART 5 – STRUCTURAL

5.1 General

The following structures at Range 3 are to be analyzed, designed, and detailed:

- Control Tower
- Classroom Building (with Restroom for Cadre and Latrine for Trainees)
- Ammunition Breakdown Building
- Covered Mess
- Bleacher Enclosure

The following structures at Range 9 are to be analyzed, designed, and detailed:

- Control Tower
- Classroom Building (with Restroom for Cadre and Latrine for Trainees)
- Ammunition Breakdown Building
- Covered Mess
- Bleacher Enclosure

5.2 Applicable Standards

The structural design for this project shall fully comply with the “Kansas City District Structural Design Controlling Criteria (SDCC)”, and with additional requirements and revisions contained herein. The SDCC shall control if discrepancies are found to exist between the SDCC and any other criteria.

In addition, the structural design shall comply with the requirements of the latest editions of the following codes, standards, and specifications:

- TI 809-04 Seismic Design for Buildings. Available on the internet at the following web address www.hnd.usace.army.mil/techinfo/ti.html
- American Concrete Institute (ACI), “ACI-318, Building Code Requirements for Reinforced Concrete.”
- American Institute of Steel Construction (AISC), “Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.”
- American Iron and Steel Institute (AISI), “Specifications for the Design of Cold-Formed Steel Structural Members.”
- American Society of Civil Engineers (ASCE), “Minimum Design Codes for Buildings and Other Structures” (Formerly ANSI A58.1).
- American Welding Society (AWS), “Structural Welding Code.”
- American Society for Testing and Materials (ASTM) as noted.
- Metal Building Manufacturers Association (MBMA), “Low Rise Building System Manual.”
- Steel Joist Institute (SJI), “Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders; Open Web Steel Joists,

Longspan and Deep Longspan Steel Joints,” and similar publications covering steel joists.

5.3 Technical Specifications

The design/build contractor shall use and edit standard Corps of Engineers Guide Specifications obtained from the US Army Corps of Engineers web site (<http://www.hnd.usace.army.mil/techinfo>) for all applicable structural items where a Guide Specification exists. If a Guide Specification does not exist for the item, then the design/build contractor will be required to create the technical specifications. All technical requirements contained in the final design shall be incorporated into the edited specifications and/or drawings.

The following is a list of specifications that shall be used on this project. Other applicable sections as mentioned above, shall be added by the design/build contractor as necessary.

- Section 03100 – Structural Concrete Formwork
- Section 03150 – Expansion Joints, Contraction Joints, and Waterstops
- Section 03200 – Concrete Reinforcement
- Section 03300 – Cast-In-Place Structural Concrete
- Section 05090 – Welding, Structural
- Section 05120 – Structural Steel
- Section 05500 – Miscellaneous Metal
- Section 07416 – Structural Standing Seam Metal Roof (SSSMR) System
- Section 13120 – Standard Metal Building Systems

5.4 Structural Loading Criteria

All structures shall be designed for the self-weight of all building / structure components plus allowance for miscellaneous suspended mechanical and electrical systems. The structures are to be designed for the following minimum live loads (other applicable dead and live loads per ASCE 7-98 shall also be included as necessary).

5.4.1 Floor Live Loads

- | | |
|------------------------------------|------------------------|
| • Offices / Classroom / Public Use | 4.79 kN/m ² |
| • Mechanical Rooms | 5.99 kN/m ² |
| • Control Tower | 4.79 kN/m ² |

5.4.2 Roof Live Load

- Minimum Roof Live Load for Construction and Maintenance
0.96 kN/m²

5.4.3 Snow Load

- Ground Snow Load 0.96 kN/m²
- Importance Factor (Ammo Breakdown Bldg) 1.1
- Importance Factor (All Other Structures) 1.0
- Sliding and Drifting Loads Shall be Calculated per ASCE 7-98.

5.4.4 Wind Load

- Basic Wind Speed 40 m/s
- Exposure Category C
- Building Classification (Ammo Breakdown Bldg) III
- Building Classification (All Other Structures) II

5.4.5 Seismic Load

- Seismic Use Group II
- Site Classification (Per Geotechnical Report)
- Spectral Response Coefficients (Per Geotechnical Report)

5.5 Serviceability Criteria

Deflections and crack widths should be limited to levels which will not adversely affect the operation, maintenance, performance, or appearance of individual structures. Deflections of structural members shall not be greater than that allowed by the applicable material standard (ACI, AISC, etc.)

5.6 Material Requirements

The following material requirements are listed to serve as minimum material requirements for the structural design, if applicable, and not necessarily defining the material properties to be used.

5.6.1 Concrete

- Minimum compressive design strength = 27.6 MPa (4000 psi)
- Concrete exposed to freeze-thaw cycle shall be air-entrained with an air content of 5% plus or minus 1%.
- Aggregates shall meet the quality requirements of ASTM C33, 5S.
- Minimum cement content is to be 3.28 kN/m³ (564 lbs/cy)

- Pozzolans may replace 13% of the minimum cement required above, provided sufficient strength is obtained. Fly ash shall meet the chemical and physical requirements of ASTM C618 for mineral admixture Class F, except loss on ignition shall not exceed 6%.
- No calcium chloride or admixture containing calcium chloride from other than incidental impurities shall be used.
- Water-cement ratio shall not exceed 0.45. This is based on all cementitious materials.
- Comply with the design requirements of the American Concrete Institute “Building Code Requirements for Structural Concrete (ACI 318-99) and Commentary (ACI 318R-99)

5.6.2 Structural Steel

- Structural Steel, Plates, and Bars: ASTM A36 (minimum)
- Structural Steel Shapes: ASTM A992M (minimum)
- Structural Tubing: ASTM A500, Grade B
- Steel Pipe: ASTM A53, Type S, Grade B
- High Strength Bolts: ASTM A325M
- Exposed Anchor Bolts: ASTM A307, Galvanized
- Welding is to be in accordance with AWS D1.1 Structural Welding Code.

5.6.3 Reinforcing Steel

- Reinforcing Steel: ASTM A615M, Grade 420 Steel
- Welded Wire Fabric: ASTM A185
- Splices in reinforcing steel are to be staggered.

5.7 Specific Building Descriptions and Criteria

5.7.1 Control Tower

5.7.1.1 General Description

One new control tower shall be located at each range. The control tower shall be designed as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook standard design. See the *Design Manual for Remoted Target System (RETS) Ranges* and the Architectural section of this RFP for additional information.

5.7.1.2 Structural System

The structural system for the control tower shall consist of structural steel columns and beams. X bracing shall be provided as shown in the standard drawings and where otherwise necessary. The flooring system for the control room floor shall be a 100 mm composite metal floor deck. The roofing system shall consist of tube steel and metal-faced sandwich roof panels. Exterior stairs and platforms shall be structural steel and galvanized steel grating. All exposed structural steel shall be galvanized or painted. Steel member sizes shall be based on actual design loads.

5.7.1.3 Foundation

The foundation system shall consist of four concrete pedestals supported by spread footings or drilled shafts (see geotechnical recommendations) located at each corner of the structure. A grade beam shall connect each pedestal. The footings shall meet the minimum frost penetration depth of 915 mm. Refer to the geotechnical section for additional soils information.

5.7.2 Classroom Building

5.7.2.1 General Description

See the architectural section of this RFP for information on this building.

5.7.2.2 Structural System

The classroom building shall be a pre-engineered type metal building with a self-framing or rigid frame steel structural system. The roof shall be a structural steel metal roof system.

5.7.2.3 Foundation

The foundation for the classroom building is to be constructed of reinforced, cast-in-place concrete. Isolated spread footings or drilled shafts and concrete pedestals of suitable size are required to resist the forces imparted on them from the metal building. The floor of the classroom building shall be designed as a slab-on-grade. The slab-on-grade shall be a reinforced slab with a minimum thickness of 100 mm, and include a vapor barrier and a minimum of 150 mm of compacted granular fill. The design of the slab-on-grade shall be based on calculated design loads. The foundations shall meet the 915 mm minimum frost depth requirements. Refer to the geotechnical section for additional soils information.

5.7.3 Ammo Breakdown Building

5.7.3.1 General Description

See the Architectural section of this RFP for a general description of the ammunition breakdown building.

5.7.3.2 Structural System

The structural system for the ammo breakdown building shall be a pre-engineered type metal building with a metal roof. The canopy over the exterior slab shall be constructed of structural steel columns and a metal roof.

5.7.3.3 Foundation

The foundation for the ammo breakdown building shall be a reinforced slab-on-grade. The slab-on-grade shall have a minimum design thickness of 100 mm with the actual thickness based on calculated design loads. The slab-on-grade shall be underlain by a 6-mil vapor barrier over 150 mm compacted granular fill. The foundation shall meet the 915 mm minimum frost depth requirements. Refer to the geotechnical section for additional soils information.

5.7.4 Covered Mess

5.7.4.1 General Description

See the Architectural section of this RFP for a general description of the covered mess facility.

5.7.4.2 Structural System

The structural system for the covered mess will consist of a rigid steel frame and an uninsulated metal roof.

5.7.4.3 Foundation

The foundation for the covered mess is to be constructed of reinforced, cast-in-place concrete. Isolated spread footings or drilled shafts and concrete pedestals of suitable size are required to resist the forces imparted on them from the steel frame and roof. The floor of the covered mess shall be designed as a slab-on-grade. The slab-on-grade shall be a reinforced slab with a minimum thickness of 100 mm, and a minimum of 150 mm of compacted granular fill. The design of the slab-on-grade shall be based on calculated design loads. The foundation shall meet the 915

mm minimum frost depth requirements. Refer to the geotechnical section for additional soils information.

5.7.5 Bleacher Enclosure

5.7.5.1 General Description

See the Architectural section of this RFP for a general description of the bleacher enclosures.

5.7.5.2 Structural System

The bleacher enclosure shall be a pre-engineered type metal building with a self-framing or rigid frame steel structural system. Uninsulated metal wall panels shall be located on three sides. The roof shall be a structural steel metal roof system.

5.7.5.3 Foundation System

The foundation system for the bleacher enclosures shall consist of concrete pedestals supported by spread footings or drilled shafts. A grade beam shall connect each pedestal. The footings shall meet the minimum frost penetration depth of 915 mm. Refer to the geotechnical section for additional soils information.

PART 6 – MECHANICAL

6.1 General

This project includes all design and construction necessary to provide a complete and operational Automated Record Fire Range at the site of existing Range 3 and to provide a complete and operational Modified Record Fire Range at the site of existing Range 9 at Ft. Leonard Wood, Missouri. The buildings requiring mechanical systems at each range includes control towers, classrooms, and ammo breakdown buildings.

6.2 Applicable Standards

The mechanical design shall comply with the requirements of the latest editions of the following codes, standards, and specifications:

- NFPA 70, National Electrical Code.
- TM 5-810-1, Mechanical Design: Heating, Ventilating, and Air-Conditioning
- ASHRAE Handbook, Fundamentals
- ASTM A53, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated Welded and Seamless
- MIL-HDBK-1008 C, Fire Protection for Facilities
- HQUSACE Architectural and Engineering Instructions – Design Criteria
- 13A Installation Information Infrastructure Implementation Guide, Version 2
- CEHNC 1110-1-23 *Design Manual for Remoted Target System (RETS) Ranges*
- Air Conditioning and Refrigeration Institute (ARI) Standards
- American National Standards Institute, Inc. (ANSI) Standards
- American Society of Mechanical Engineers (ASME) Codes
- Architectural and Engineering Instructions (AEI)
- Life Safety Code
- Manufacturers Standardization Society of the Valve and Fitting Industry, Inc. (MSS) Standards
- National Fire Protection Association
- TM 5-809-10, Chapter 13, Seismic Design for Buildings
- TM 5-810-4, Noise Control for Mechanical Equipment
- TM 5-810-6, Non-Industrial Gas Piping Systems
- Sheet Metal & Air-Conditioning Contractors National Association (SMACNA) Standards
- International Building Code, latest edition

The plumbing design shall comply with the requirements of the latest editions of the following codes, standards, and specifications:

- National Standard Plumbing Code, Latest edition
- TM 5-810-5, Plumbing

6.3 Technical Specifications

The design/build contractor shall use and edit standard Corps of Engineers Guide Specifications obtained from the US Army Corps of Engineers web site (<http://www.hnd.usace.army.mil/techinfo>) for all applicable mechanical and plumbing items where a Guide Specification exists. If a Guide Specification does not exist for the item, then the design/build contractor will be required to create the technical specifications. All technical requirements contained in the final design shall be incorporated into the edited specifications and/or drawings.

The following is a list of specifications that shall be used on this project. Other applicable sections as mentioned above, shall be added by the design/build contractor as necessary.

- Section 02510 - Water Distribution System
- Section 02521 - Water Wells
- Section 02530 - Sanitary Sewerage
- Section 10800 – Toilet Accessories
- Section 11310 – Pumps; Sewage and Sludge
- Section 11390 – Prefabricated Biochemical Wastewater Treatment Plant
- Section 15080 – Thermal Insulation for Mechanical Systems
- Section 15400 – Plumbing, General Purpose
- Section 15565 – Heating System, Gas-Fired Heaters
- Section 15566 – Warm Air Heating System
- Section 15700 – Unitary Heating and Cooling Equipment
- Section 15845 – Energy Recovery Systems
- Section 15895 – Air Supply, Distribution, Ventilation, and Exhaust System
- Section 15950 – Heating, Ventilating, and Air Conditioning (HVAC) Control Systems
- Section 15990 – Testing, Adjusting, and Balancing of HVAC Systems

6.4 Design Criteria – HVAC Systems

<u>Room</u>	<u>Outdoor Temp</u>		<u>Indoor Temp</u>	
	Winter	Summer	Winter	Summer
	<u>Degrees C</u>	<u>Degrees C</u>	<u>Degrees C</u>	<u>Degrees C</u>
Tower	-16	34 db, 25 wb	10	26
Classroom	-16	34 db, 25 wb	16	26
Ammo Bldg	-16	34 db, 25 wb	10	31
Latrine	-16	34 db, 25 wb	10	31

6.5 ASHRAE Standard 62 Ventilation Requirements

The 1999 edition of ASHRAE specifies 8 liters per second (lps) per occupant for occupancies similar to the control tower or classroom. An average occupancy of 129 people over a four-hour period will require 8 lps of outside air, or 1032 lps

The latrines are required to be ventilated at a rate of 25 lps per fixture. A ten-
fixture latrine (men’s and women’s inclusive) will require 250 lps.

The ammo breakdown building will ventilate at rate equivalent to six air changes per hour, pending further definition of the types of materials present. If industrial ventilation practices are found to be more stringent, they will supercede the six air change per hour rate.

6.6 HVAC Systems

HVAC system selections shall be based on the first cost of installed equipment. Inclusion of operating costs into the equipment selection will be dependant on the availability of accurate utility costs.

6.6.1 Control Towers

The towers will be conditioned by through-the-wall heat pump units.

6.6.2 Classroom Building

The classrooms will be conditioned by a commercially available, pad mounted, packaged units, and converted to run on propane. Each unit will be supplemented with a desiccant wheel, energy recovery unit to precondition the ventilation air. Standard galvanized ductwork, sized for low pressure application shall be used though the building. Diffuser shall be steel, and painted white to match a standard suspended ceiling tile, with grid. Diffusers shall be selected to provide an noise criteria (NC) of 25 or less. A single, electronic, 24-hour, 7-day, programmable thermostat, mounted on an interior wall in the classroom. The latrine and restroom

supply air shall be balanced to maintain a negative net flow of 25 lps for each entry door.

6.6.3 Ammo Breakdown Building

An electric resistance heater will be provided for each of the ammo breakdown buildings.

6.7 Ventilation

6.7.1 Control Tower

Ventilation air will be provided by through-the-wall heat pumps.

6.7.2 Classroom Building

Each classroom will be ventilated by a pad-mounted package unit with an energy recovery module. The recovery module capacity will be based on the average occupancy 129 people over a four hour period. Separate exhaust fans will be provided for the men and women's section of the latrine.

6.7.3 Ammo Breakdown Building

Each building will be ventilated by wall louvers located 300 mm above the ground.

6.8 Plumbing Scope of Work

6.8.1 Range 3

Water service at Range 3 will be provided by the construction of a new 203 mm water main connecting to the existing Ft. Leonard Wood water system. Sanitary sewer service will be provided by the construction of a new lift station and force main that will connect to the existing Ft. Leonard Wood sanitary sewer system. For additional information, see the Civil section of this RFP. Yard hydrants will be placed at the covered mess, bleacher enclosure, and ammunition breakdown building.

6.8.2 Range 9

Water service at Range 9 will be provided by the construction of a well and chlorination system. Sanitary sewer service shall be provided by the construction of a package treatment plant designed to accept the anticipated flows from Range 9 plus 25 percent. The contractor shall also present a 76,000-liter below grade holding tank as an alternate to the

package treatment plant. For additional information on water and sanitary service for Range 9, see the Civil section of this RFP. Yard hydrants will be placed at the covered mess, bleacher enclosure, package treatment plant and ammunition breakdown building.

6.8.3 Building Plumbing

Interior hot and domestic potable water shall be run in CPVC pipe. Interior building waste piping shall be constructed of pre-lined PVC pipe.

All water closets shall be of the flush valve type. All fixtures shall be vitreous china. Lavatories shall be supported by chair carriers. Water closets shall be floor-mounted, floor outlet.

A single 1,900-liter liquid propane tank shall be provided. Buried polyethelene pipe shall be used to transport the gaseous propane to each building requiring service. Tracer wire and warning tape shall be buried with all buried service piping. Annodless risers shall be provided at each propane tank, and at each building. The color of the tank shall be designated by the Ft. Leonard Wood – DPW office.

PART 7 – ELECTRICAL

7.1 General

The electrical systems for the Remote Target Systems Ranges shall follow the design requirements specified in the U. S. Army Corp of Engineers *Design Manual for Remoted Target System (RETS) Ranges* and specifically sheets E-01 through E-24 where applicable and other sheets as referenced. The systems shown are exact duplications of the standards for all structures except the classrooms, compressor / controls building and the covered mess. The design requirements within the *Design Manual for Remoted Target System (RETS) Ranges* standard shall be met and where deviation from the standard has been identified, the design shall conform to the applicable standards stated below referenced.

7.2 Applicable Standards

The electrical design shall comply with the requirements of the latest editions of the following codes, standards, and specifications:

- NFPA 70, National Electrical Code.
- NFPA 101, Life Safety Code.
- TM 5-811-1, Electric Power Supply and Distribution.
- TM 5-811-2, Interior Electrical System.
- IES, Lighting Handbook
- ANSI C2, National Electrical Safety Code
- MIL-HDBK-1008 C, Fire Protection For Facilities.
- HQUSACE Architectural and Engineering Instructions – Design Criteria.
- I3A Installation Information Infrastructure Implementation Guide Latest Editions.
- CEHNC 1110-1-23 *Design Manual for Remoted Target System (RETS) Ranges*
- MIL-HDBK-1004/6, Lighting Protection.
- DOD 6055.9-STD, DOD Ammunition & Explosives Safety Standards

7.3 Technical Specifications

The design/build contractor shall use and edit standard Corps of Engineers Guide Specifications obtained from the US Army Corps of Engineers web site (<http://www.hnd.usace.army.mil/techinfo>) for all applicable electrical items where a Guide Specification exists. If a Guide Specification does not exist for the item, then the design/build contractor will be required to create the technical specifications. All technical requirements contained in the final design shall be incorporated into the edited specifications and/or drawings.

The following is a list of specifications that shall be used on this project. Other applicable sections as mentioned above, shall be added by the design/build contractor as necessary.

- Section 13100—Lightning Protection System
- Section 13110 – Cathodic Protection System (Sacrificial Anode)
- Section 13850 – Fire Detection and Alarm System, Direct Current Loop
- Section 16070 – Seismic Protection for Electrical Equipment
- Section 16370 - Electrical Distribution Systems, Aerial
- Section 16375 - Electrical Distribution Systems, Underground
- Section 16415 - Electrical Work, Interior
- Section 16475 – Coordinated Power System Protection
- Section 16528 - Exterior Lighting
- Section 16710 - Premises Distribution System
- Section 16711 - Telephone System, Outside Plant
- Section 16770 – Radio and Public Address Systems

7.4 Specific Design Criteria

7.4.1 Electrical Design

All electrical design shall be in conformance with the standards referenced in other sections of this RFP and shall also conform to standard products available from manufacturers with equipment and material specifications meeting ANSI, ASTM, NEMA, NFPA, UL, and any other associated recognized professional group.

All equipment shall be installed per the design standard I3A, the referenced specification sections, the technical manuals, and the latest edition of NFPA 70.

Wiring shall be type USE for underground services. Panel feeders and branch circuit conductors #10 and smaller shall be THWN/THHN solid and #8 and larger shall be THWN/THHN stranded. All wiring shall be copper conductors. The service for the facility shall be 120/208 volt, 3 phase, 4 wire with single-phase panels supplied to specified building types. The compressor / controls building, classroom and control tower shall have 3 phase power. All phases shall be balanced by connecting the single-phase panels to different phases of the system.

Motor efficiencies for the classroom building shall be high efficiency type or labeled as Energy Star for external motors and motors as part of an energy labeled equipment shall be excluded from this requirement. Half horsepower and smaller motors shall be single-phase 120 volt, and larger than ½HP shall be single or 3 phase, 208 volt.

Calculations shall be provided for interior and exterior clear lighting showing both maintained illumination and contrast requirements of the IES Lighting

Handbook. All panels and feeders shall include a load analysis for connected and estimated demand utilizing continuous and non-continuous loads per the NFPA 70.

7.4.2 Power

Voltage drop and fault current calculations shall be provided for services, meters, and panel feeders.

Calculations shall be provided to show the PA system meets the requirements in the *Design Manual for Remoted Target System (RETS) Ranges* and other design standards.

The existing medium voltage service to each range is 12,470 volts, 3 phase, 4 wire and on Range 3 will require primary extension to the site. Currently the site is serviced with single-phase power. All area extensions shall be in conformance with TM 5-811-1, Electric Power Supply and Distribution. Coordinate all medium voltage service extensions with the Ft. Leonard Wood - Directorate of Public Works.

A medium voltage extension and service shall supply pad-mounted transformers of the oil filled type. Transformers will be 3 phase as required and as shown on Electrical sheets. Each building shall be metered for both demand and kilowatt-hours and sized for 25% excess capacity over estimated demand calculation. Transformers shall comply with the location and access requirements of Military Handbook 1008C. A distribution panel will be required to serve all power requirements at Range 3 and Range 9. Furnish and install primary, transformer and secondary required to power lift stations associated with sanitary sewer extensions on Ranges 3 and 9

7.4.3 Lighting

Lighting levels shall conform to the latest edition of the Illumination Engineering Society recommended levels. Fluorescent fixtures shall utilize energy efficient T8 lamps with electronic ballasts and have a CRI of 85. All fixtures shall be controlled with key switches (through contactors where required) for the general illumination and standard toggle switches for the red lens fixtures. Specific light fixtures are to be installed as shown in the *Design Manual for Remoted Target System (RETS) Ranges* handbook. Illumination levels shall be calculated as maintained.

Interior lighting shall utilize the fixtures as detailed on sheet E-08 of the *Design Manual for Remoted Target System (RETS) Ranges* standard. It shall conform to the IES Lighting Handbook, latest edition. Specific illumination levels with fixture type shall be as follows:

- The control tower shall utilize industrial fluorescent with incandescent emergency lights. A clear illumination level of 300 Lux and a red illumination of 10 Lux; exterior of the Control Tower shall utilize incandescent with red lamps for the tower access utilizing one fixture at the lower level, each landing and top level of tower.
- Classrooms shall utilize industrial fluorescents and industrial fluorescents with lenses with an illumination level of 300 Lux for the base lighting and 10 Lux of red illumination.
- The ammo breakdown building shall utilize incandescent lighting with clear or red lens and illumination levels of 300 Lux for the clear lighting and 10 Lux for the red lighting (provide a minimum of 2 incandescent fixtures for ammunition breakdown portion only).
- The latrine shall utilize wet/damp fluorescent with acrylic diffuse lens with illumination levels of 200 Lux and 10 Lux for red illumination with incandescent fixtures.
- Exterior illumination shall utilize the pole fixtures as detailed on sheet E-09 of the *Design Manual for Remoted Target System (RETS) Ranges* standard and as shown on each building type in the standard. In addition to the fixture shown on the buildings, an additional red lens type “D” fixture shall be installed on the exterior of each building.

Emergency lighting shall be as required by the *Design Manual for Remoted Target System (RETS) Ranges* design standard and as required by the NFPA Code 101.

Each range shall be illuminated with flood lights utilizing quartz halogen lamps as shown in the *Design Manual for Remoted Target System (RETS) Ranges* Design standard with the addition of two red lens fixtures mounted on the wood poles as shown in the *Design Manual for Remoted Target System (RETS) Ranges* standard. Red lens lighting shall be 500 watts each. Illumination shall be 100 Lux at the firing positions and all fixtures shall be controlled by light switches from the control tower. Flood lighting shall be installed directly behind the firing positions of both ranges.

Both of the ranges shall have an illuminated range limit sign with switching and circuit origination at the control tower and direct burial cable for the circuit once it enters the grade from the control tower. Both ranges have an illuminated flagpole controlled from the control tower utilizing ground fixtures.

Clearly label all switching within the control tower in groups, switches together with key switches in one grouping and red illumination switches in another grouping. Switching shall control each pole of the firing position illumination through contactors.

7.4.4 Range Power and Data Cables

The range power and data cables for the Targeting System shall be installed by the Targeting Contractor. Contact "Action Target", P. O. Box 636, Provo, Utah 84603, telephone number 801-377-8033 for specific questions and requirements.

The service slab area for the compressor building shall have a 120/208 volt, 3 phase, 4 wire, 100 amp main circuit breaker panel served underground from the pad mounted transformer.

7.4.5 Lightning Protection

Lighting protection shall be required for the control tower, ammo breakdown building, general flood lighting poles, PA mounting poles, covered mess area, compressor / controls building and bleacher enclosures. Any protection shall be in conformance with the *Design Manual for Remoted Target System (RETS) Ranges* standard design, NFPA 70, NFPA 780 and MIL-HDBK-1004/6.

7.4.6 Underground Piping Protection

Cathodic protection is required for any underground metallic structures such as well houses, tube stations, etc. If plastic or fiberglass systems are utilized, cathodic protection is not required.

7.4.7 Telephone

Telecommunications requirements shall be per EIA/TIA Standard and Ft. Leonard Wood's standard requirements. In general, cable and jacks shall be Category 5E and conform to the EIA/TIA 568A Commercial Building Telecommunications Cabling Standard.

The number of telephone jacks shall be as specified in installation standard I3A Installation Information Infrastructure Implementation Guide, Latest Edition. The actual locations based on the final plan shall be coordinated with the Ft. Leonard Wood – Directorate of Public Works.

Install a 1220mm x 1220mm x 19mm painted telephone background in each control tower and each classroom with a "2500 type" telephone set and 12 port patch panel for each classroom and control tower. Also install for each classroom and control tower an external weatherproof enclosure with a gas tube protected terminal for each firing range. Contact Fort Leonard Wood for specific location and requirements.

7.4.8 Public Address System

A paging only PA system shall be provided for Range 3 and 9 with a tower located mixer amplifier. Horn speaker shall be outdoor weatherproof type with each light pole containing two horn speakers. Two additional speakers shall be located on the control tower with details as required by the *Design Manual for Remoted Target System (RETS) Ranges* standard.

7.4.9 Miscellaneous

Install a #14 THWN copper wire in any underground conduit that has no copper conductors for location tracing.

Provide grounding per NFPA 70 on all exterior metallic structures such as fences, poles, etc.

Coordinate the demolition of the electrical systems with Ft. Leonard Wood personnel to assure that Range 9 remains operational until construction work is authorized. All buildings to be removed shall have their electrical systems removed in their entirety.

APPENDIX A
LINE OF SITE ANALYSIS

LINE-OF-SITE ANALYSIS
RANGE 3 - FT. LEONARD WOOD, MO
JUNE 2002

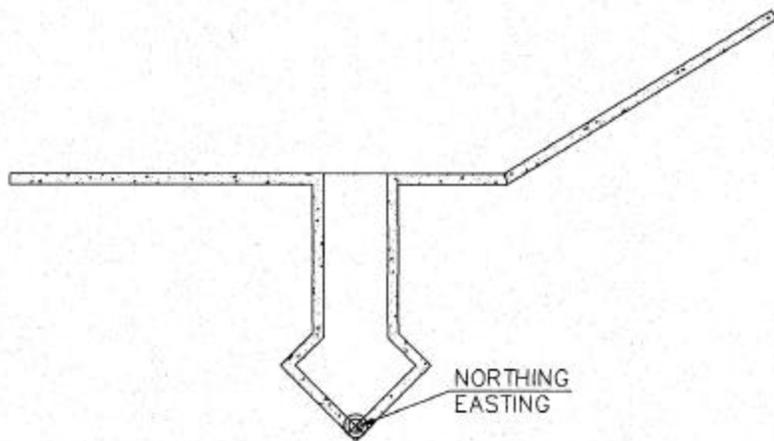
Foxhole (Firing Point)	Target Emplacement	Distance from Firing Line	Top of Foxhole or Emplacement Elevation	Line-of-Site Elevation	Coordinates	
					Northing	Easting
A			340.5	340.6	209031.43	184275.22
	A1	50 meters	336.8	337.1	208983.17	184285.63
	A2	50 meters	336.8	337.1	208982.08	184273.68
	A8	75 meters	336.9	337.2	208957.19	184286.99
	A3	100 meters	337.1	337.4	208933.19	184288.16
	A4	150 meters	338.4	338.7	208883.31	184291.69
	A9	175 meters	338.6	338.9	208856.88	184288.07
	A5	200 meters	338.9	339.2	208832.97	184290.24
	A6	250 meters	339.2	339.5	208783.72	184300.74
	A7	300 meters	339.7	340.0	208733.38	184299.28
B			341.0	341.1	209029.63	184255.31
	B1	50 meters	336.9	337.2	208981.36	184265.71
	B2	50 meters	336.9	337.2	208980.27	184253.76
	B8	75 meters	337.5	337.8	208954.48	184257.11
	B3	100 meters	338.2	338.5	208930.66	184260.28
	B4	150 meters	340.4	340.7	208880.96	184265.80
	B9	175 meters	340.2	340.5	208855.61	184274.12
	B5	200 meters	340.2	340.5	208831.70	184276.30
	B6	250 meters	340.4	340.7	208781.37	184274.84
	B7	300 meters	340.9	341.2	208732.11	184285.34
C			341.0	341.1	209027.82	184235.39
	C1	50 meters	336.9	337.2	208979.55	184245.80
	C2	50 meters	336.9	337.2	208978.47	184233.85
	C8	75 meters	337.7	338.0	208953.58	184247.15
	C3	100 meters	338.6	338.9	208929.58	184248.33
	C4	150 meters	341.2	341.5	208879.69	184251.85
	C9	175 meters	341.2	341.5	208853.26	184248.23
	C5	200 meters	341.3	341.6	208829.35	184250.40
	C6	250 meters	341.4	341.7	208780.10	184260.90
	C7	300 meters	342.0	342.3	208729.76	184259.45

Foxhole (Firing Point)	Target Emplacement	Distance from Firing Line	Top of Foxhole or Emplacement	Line-of-Site	Coordinates	
			Elevation	Elevation	Northing	Easting
D			341.0	341.1	209026.01	184215.47
	D1	50 meters	336.9	337.2	208977.74	184225.88
	D2	50 meters	337.3	337.6	208976.66	184213.93
	D8	75 meters	338.1	338.4	208950.86	184217.27
	D3	100 meters	338.9	339.2	208927.04	184220.44
	D4	150 meters	341.3	341.6	208877.34	184225.96
	D9	175 meters	341.5	341.8	208852.00	184234.29
	D5	200 meters	341.7	342.0	208828.09	184236.46
	D6	250 meters	341.8	342.1	208777.75	184235.01
	D7	300 meters	343.0	343.3	208728.50	184245.51
E			341.0	341.1	209024.20	184195.55
	E1	50 meters	337.3	337.6	208975.93	184205.96
	E2	50 meters	337.5	337.8	208974.85	184194.01
	E8	75 meters	338.3	338.6	208949.96	184207.32
	E3	100 meters	339.1	339.4	208925.96	184208.49
	E4	150 meters	341.0	341.3	208876.07	184212.02
	E9	175 meters	341.3	341.6	208849.64	184208.39
	E5	200 meters	341.7	342.0	208825.73	184210.57
	E6	250 meters	342.0	342.3	208776.48	184221.06
	E7	300 meters	344.2	344.5	208726.14	184219.61
F			341.5	341.6	209022.39	184175.63
	F1	50 meters	337.6	337.9	208974.12	184186.04
	F2	50 meters	338.1	338.4	208973.04	184174.09
	F8	75 meters	338.6	338.9	208947.24	184177.44
	F3	100 meters	339.2	339.5	208923.42	184180.61
	F4	150 meters	341.1	341.4	208873.72	184186.13
	F9	175 meters	341.5	341.8	208848.38	184194.45
	F5	200 meters	342.0	342.3	208824.47	184196.62
	F6	250 meters	342.3	342.6	208774.13	184195.17
	F7	300 meters	344.5	344.8	208724.88	184205.67
G			342.0	342.1	209020.58	184155.72
	G1	50 meters	338.3	338.6	208972.31	184166.12
	G2	50 meters	338.8	339.1	208971.23	184154.17
	G8	75 meters	339.0	339.3	208946.34	184167.48
	G3	100 meters	339.3	339.6	208922.34	184168.66
	G4	150 meters	341.4	341.7	208872.45	184172.18
	G9	175 meters	342.1	342.4	208846.03	184168.56
	G5	200 meters	342.8	343.1	208822.11	184170.73
	G6	250 meters	342.9	343.2	208772.86	184181.23
	G7	300 meters	345.3	345.6	208722.52	184179.78

Foxhole (Firing Point)	Target Emplacement	Distance from Firing Line	Top of Foxhole or Emplacement	Line-of-Site	Coordinates	
			Elevation	Elevation	Northing	Easting
H			342.5	342.6	209018.77	184135.80
	H1	50 meters	339.1	339.4	208970.50	184146.21
	H2	50 meters	339.4	339.7	208969.42	184134.26
	H8	75 meters	339.5	339.8	208943.63	184137.60
	H3	100 meters	339.6	339.9	208919.81	184140.77
	H4	150 meters	342.1	342.4	208870.10	184146.29
	H9	175 meters	342.6	342.9	208844.76	184154.62
	H5	200 meters	343.1	343.4	208820.85	184156.79
	H6	250 meters	343.6	343.9	208770.51	184155.34
H7	300 meters	345.4	345.7	208721.26	184165.83	
I			343.0	343.1	209016.96	184115.88
	I1	50 meters	339.6	339.9	208968.70	184126.29
	I2	50 meters	340.3	340.6	208967.61	184114.34
	I8	75 meters	339.8	340.1	208942.72	184127.64
	I3	100 meters	340.0	340.3	208918.72	184128.82
	I4	150 meters	342.5	342.8	208868.83	184132.35
	I9	175 meters	343.0	343.3	208842.41	184128.72
	I5	200 meters	343.6	343.9	208818.50	184130.89
	I6	250 meters	344.2	344.5	208769.24	184141.39
I7	300 meters	346.4	346.7	208718.91	184139.94	
J			343.5	343.6	209015.15	184095.96
	J1	50 meters	340.7	341.0	208966.89	184106.37
	J2	50 meters	341.1	341.4	208965.80	184094.42
	J8	75 meters	341.4	341.7	208940.01	184097.77
	J3	100 meters	341.7	342.0	208916.19	184100.93
	J4	150 meters	343.1	343.4	208866.48	184106.45
	J9	175 meters	343.7	344.0	208841.14	184114.78
	J5	200 meters	344.3	344.6	208817.23	184116.95
	J6	250 meters	345.5	345.8	208766.89	184115.50
J7	300 meters	346.9	347.2	208717.64	184126.00	
K			345.0	345.1	209013.34	184076.04
	K1	50 meters	341.3	341.6	208965.08	184086.45
	K2	50 meters	341.8	342.1	208963.99	184074.50
	K8	75 meters	341.6	341.9	208939.10	184087.81
	K3	100 meters	341.9	342.2	208915.10	184088.98
	K4	150 meters	343.3	343.6	208865.22	184092.51
	K9	175 meters	344.3	344.6	208838.79	184088.89
	K5	200 meters	345.4	345.7	208814.88	184091.06
	K6	250 meters	346.0	346.3	208765.63	184101.56
K7	300 meters	347.3	347.6	208715.29	184100.10	

Foxhole (Firing Point)	Target Emplacement	Distance from Firing Line	Top of Foxhole or Emplacement	Line-of-Site	Coordinates	
			Elevation	Elevation	Northing	Easting
L			345.5	345.6	209011.53	184056.13
	L1	50 meters	342.1	342.4	208963.27	184066.53
	L2	50 meters	342.3	342.6	208962.18	184054.58
	L8	75 meters	342.5	342.8	208936.39	184057.93
	L3	100 meters	342.7	343.0	208912.57	184061.10
	L4	150 meters	344.0	344.3	208862.86	184066.62
	L9	175 meters	344.8	345.1	208837.52	184074.94
	L5	200 meters	345.6	345.9	208813.61	184077.12
	L6	250 meters	346.6	346.9	208763.27	184075.66
L7	300 meters	347.8	348.1	208714.02	184086.16	
M			346.5	346.6	209009.72	184036.21
	M1	50 meters	342.8	343.1	208961.46	184046.62
	M2	50 meters	343.5	343.8	208960.37	184034.67
	M8	75 meters	343.1	343.4	208935.48	184047.97
	M3	100 meters	343.4	343.7	208911.48	184049.15
	M4	150 meters	344.4	344.7	208861.60	184052.67
	M9	175 meters	345.6	345.9	208835.17	184049.05
	M5	200 meters	346.8	347.1	208811.26	184051.22
	M6	250 meters	347.8	348.1	208762.01	184061.72
M7	300 meters	348.9	349.2	208711.67	184060.27	
N			346.5	346.6	209007.91	184016.29
	N1	50 meters	343.8	344.1	208959.65	184026.70
	N2	50 meters	345.5	345.8	208958.56	184014.75
	N8	75 meters	345.6	345.9	208932.77	184018.09
	N3	100 meters	345.7	346.0	208908.95	184021.26
	N4	150 meters	346.0	346.3	208859.24	184026.78
	N9	175 meters	346.4	346.7	208833.90	184035.11
	N5	200 meters	346.8	347.1	208809.99	184037.28
	N6	250 meters	349.6	349.9	208759.65	184035.83
N7	300 meters	350.2	350.5	208710.40	184046.33	
O			347.5	347.6	209006.10	183996.37
	O1	50 meters	345.5	345.8	208957.84	184006.78
	O2	50 meters	345.5	345.8	208956.75	183994.83
	O8	75 meters	345.6	345.9	208931.86	184008.14
	O3	100 meters	345.7	346.0	208907.86	184009.31
	O4	150 meters	346.0	346.3	208857.98	184012.84
	O9	175 meters	346.8	347.1	208831.55	184009.21
	O5	200 meters	347.6	347.9	208807.64	184011.39
	O6	250 meters	350.0	350.3	208758.39	184021.88
O7	300 meters	351.0	351.3	208708.05	184020.43	

Foxhole (Firing Point)	Target Emplacement	Distance from Firing Line	Top of Foxhole or Emplacement	Line-of-Site	Coordinates	
			Elevation	Elevation	Northing	Easting
P			348.0	348.1	209004.30	183976.45
	P1	50 meters	345.5	345.8	208956.03	183986.86
	P2	50 meters	345.5	345.8	208954.94	183974.91
	P8	75 meters	346.0	346.3	208929.15	183978.26
	P3	100 meters	346.4	346.7	208905.33	183981.43
	P4	150 meters	347.5	347.8	208855.63	183986.95
	P9	175 meters	347.8	348.1	208830.28	183995.27
	P5	200 meters	348.1	348.4	208806.37	183997.44
	P6	250 meters	351.1	351.4	208756.04	183995.99
	P7	300 meters	351.9	352.2	208706.78	184006.49



FIRING POSITIONS
(WALK-IN FOXHOLES)



U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

RANGE 3 & 9 REQUEST FOR PROPOSAL
FT. LEONARD WOOD, MO
LINE-OF-SITE ANALYSIS
COORDINATE LOCATION