REQUEST FOR PROPOSAL

(FOR DESIGN/BUILD CONTRACT)

SOLICITATION DACA45-02-R-0016

UPGRADE WATER DISTRIBUTION SYSTEM

PN XQPZ044014

U.S. AIR FORCE ACADEMY, Colorado

FEBRUARY 2002

U.S. Army Corps of Engineers
Omaha District

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REQUEST FOR PROPOSAL DOCUMENTS FOR
CONSTRUCTION OF

UPGRADE WATER DISTRIBUTION SYSTEM
PN XQPZ044014

U.S. AIR FORCE ACADEMY, COLORADO

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*- PART OF DACA45-02-R-0002 IDIQ CONTRACT, ULESS NOTED AS REPLACEMENT

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*- PART OF DACA45-02-R-0002 IDIQ CONTRACT, ULESS NOTED AS REPLACEMENT

SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair)	1. SOLICITATION NO.	2. TYPE OF SOLICITATION	3. DATE ISSUED	PAGE OF PAGES
	DACA45-02-R-0016	☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP)	15 FEB 2002	1 OF 3

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

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

7. ISSUED BY CODE CT

U S ARMY ENGINEER DISTRICT, OMAHA
106 South 15th Street
Omaha, Nebraska 68102-1618

8. ADDRESS OFFER TO

U.S.ARMY CORPS OF ENGINEERS, OMAHA
Attn: CONTRACTING DIVISION (CENWO-CT)
106 South 15th Street
Omaha, Nebraska 68102-1618

9. FOR INFORMATION CALL: ▶	A. NAME	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS)
	See SECTION 00100, Para. 15	See SECTION 00100, Para. 15

SOLICITATION

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

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

The Offeror hereby agrees to do all the work described in these documents entitled:

UPGRADE WATER DISTRIBUTION SYSTEM
PN XQPZ044014
U.S. AIR FORCE ACADEMY, COLORADO

RETURN WITH PROPOSAL: SECTIONS 00010 (SF1442) AND PRICE PROPOSAL BACKUP INFORMATION (BY CSI DIVISION)

OTHER BONDING INFORMATION: SEE CONTRACT CLAUSES CLAUSE "PERFORMANCE AND PAYMENT BONDS".

11. The Contractor shall begin performance within 10 calendar days and complete it within 440 calendar days after receiving

☐ award, ☒ notice to proceed. This performance period is ☒ mandatory, ☐ negotiable. (See _____ .)

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

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 3 copies to perform the work required are due at the place specified in Item 8 by 1400 (hour) local time 11 MAR 2002 (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☐ is, ☒ is not required.

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

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

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

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within 60 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 PRICING SCHEDULE

Contractor's Fax No._____ CAGE CODE _____

Contractor's E-Mail address_____

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

19. ACKNOWLEDGMENT OF AMENDMENTS

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

AMENDMENT NO.										
DATE										

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

AWARD (To be completed by Government)

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified) ▶	ITEM 26	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO ☐ 10 U.S.C. 2304(c) ( ) ☐ 41 U.S.C. 253(c) ( )

26. ADMINISTERED BY CODE	27. PAYMENT WILL BE MADE BY
U.S. Army Engineer District, Omaha 106 South 15th Street Omaha, Nebraska 68102-1618	USAED Omaha c/o USACE Finance Center 5722 Integrity Drive Millington, TN 38054-5005

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT (contractor is required to sign this document and return_____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.	☐ 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.
30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)	31A. NAME OF CONTRACTING OFFICER (Type or print)

30B. SIGNATURE	30C. DATE	31B. UNITED STATES OF AMERICA BY	31C. AWARD DATE

PRICING SCHEDULE

Item No.	Description	Estimated Quantity	Unit	Unit Price	Amount
	BASIC ITEMS				
1.	All Work Complete for the Upgrade Water Distribution System, excluding Items 2, 3, and 4 following and Option Item O-1 below.	Job	L.S.	XXX	$_____
2.	Design Cost for all work.	Job	L.S.	XXX	$_____
3.	All work complete for Removal of Rock 12 to 24 inches in diameter.	100	CY	$_____	$_____
4.	All work complete for Removal of Rock greater than 24 inches in diameter.	200	CY	$_____	$_____
	SUBTOTAL (BASIC ITEMS 1 THRU 4)				**$_____**
	OPTION ITEMS				
O-1	Additional amount to provide a 1 mil thick bonded coating system for ductile iron pipe in lieu of the polyethylene encasement.	Job	L.S.	XXX	$_____
	GRAND TOTAL AMOUNT (ALL BASIC ITEMS & OPTIONS)				**$ _____**

NOTES:

1. See Section 00100, INSTRUCTIONS, CONDITIONS AND NOTICES OFFERORS, paragraph EVALUATION OF OPTIONS for evaluation of pricing items and options. The Government reserves the right to exercise Options within 90 calendar days after Notice to Proceed (NTP).

2. Prices must be entered for all line items on the Pricing Schedule. Grand total amount price submitted without prices for individual line items will not be evaluated. Additions will be subject to verification by the Government. In case of variation between the lump-sum prices and the grand total amount, the lump-sum prices will be considered the price. In case of variation between the unit prices and the extensions, the unit prices will be considered the amount proposed. The unit of measure for Basic Items 3 and 4 of the pricing schedule is cubic yards (CY). Design costs for the entire project are included in Basic Item No. 2.

3. Modification to the Pricing Schedule items, basic or options should state the application of the adjustment to each respective lump sum (LS) price and unit price affected. If the modification is no so apportioned, the single adjustment will apply to Basic Item No. 1.

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SECTION 00100

INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS
(July 2000, Revised November 2001)

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SECTION 00100

INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS

1 DEFINITION OF "DESIGN-BUILD" PROCESS

The "Design-Build Process is the procurement of a facility utilizing a Request for Proposal (RFP) to solicit for the design and construction of a facility by a single contractual entity. The contractual entity may be a "Design-Build" firm, or joint venture between an architect-engineer (A-E) and construction firm, or a construction management (CM) firm joint venture with an A-E and a construction firm.

2 SOLICITATION RESTRICTIONS.

2.1 GENERAL CONTRACTOR.

This solicitation is restricted to designated 8 (a) Indefinite Delivery and Indefinite Quantity (IDIQ) design-build Contractors (DACA45-02-R-0002).

2.2 ESTIMATED DESIGN AND CONSTRUCTION COST.

The estimated design and construction cost of this project is between $5,000,000 and $7,500,000.

3 (FAR 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).

4 (FAR 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)

Copies of specifications, standards, and data item descriptions cited in this solicitation may be obtained—

(a) From the ASSIST database via the Internet at http://assist.daps.mil; or

(b) By submitting a request to the—

Department of Defense Single Stock Point (DoDSSP)
Building 4, Section D
700 Robbins Avenue
Philadelphia, PA 19111-5094
Telephone (215) 697-2667/2179
Facsimile (215) 697-1462.

(End of provision)

5 (FAR 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, revision, and withdrawal 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)

6 CHANGES PRIOR TO RECEIVING OFFERS

The right is reserved, as the interest of the Government may require, to revise the specifications and/or Request For Proposal drawings prior to the date set for receiving offers. Such revisions will be announced by an amendment or amendments to this Request For Proposal. **It shall be the responsibility of the prospective offeror to furnish all subcontractors or suppliers a copy of any amendments issued.**

7 (FAR 52.216-1) TYPE OF CONTRACT (APR 1984).

The Government contemplates award of a firm fixed price contract resulting from this [solicitation][task order].

(End of provision)

8 (FAR 52.204-6) DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUNE 1999)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" followed by the DUNS number that identifies the offeror's name and address exactly as stated in the offer. The DUNS number is a nine-digit number assigned by Dun and Bradstreet Information Services.

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

(1) Company name.

(2) Company address.

(3) Company telephone number.

(4) Line of business.

(5) Chief executive officer/key manager.

(6) Date the company was started.

(7) Number of people employed by the company.

(8) Company affiliation.

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

(End of provision)

9 SMALL BUSINESS SIZE STANDARD.

The small business size standard is gross annual receipts for its preceding 3 fiscal years did not exceed $27.5 million.

10 NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS).

In accordance with Subsector 234 of the NAICS Manual, the work in this solicitation is assigned classification code 234910 (SIC 1623).

11 (DFARS 252.204-7004) REQUIRED CENTRAL CONTRACTOR REGISTRATION (NOV 2001)

(a) Definitions.

As used in this clause--

(1) "Central Contractor Registration (CCR database" means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) "Data Universal Numbering System (DUNS) number" means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) "Data Universal Numbering System +4 (DUNS+4) number" means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) "Registered in the CCR database" means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits

have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at http://www.ccr.gov.

(End of clause)

12 (FAR 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)

13 (FAR 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 acknowledgement of receipt from District Counsel, 106 South 15th Street, Omaha, Nebraska 68102-1618.

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

14 NOT USED.

15 OFFEROR'S QUESTIONS AND COMMENTS.

Questions and/or comments relative to these documents should be submitted via e-mail or mailed to: U.S. Army Corps of Engineers, Omaha District, ATTN: CENWO-CT-M 106 South 15th Street, Omaha, NE 68102-1618. Comments should reach this office no later than 20 calendar days prior to the date set for receiving of proposals, if feasible, in order that changes, if needed, may be added by amendment. E-mail addresses, FAX numbers, items for question and points of contact are listed below. Phone calls with questions should be made between 8:30 a.m. and 3:30 p.m. (Central Standard Time) Monday through Friday.

Note: A courtesy copy of all questions shall be sent to the Contract Specialist (Contractual Matters Point of Contact), the Program Manager and the Specifications Section (Technical Contents Points of Contact), except for Small Business questions. Small Business questions shall go to the Small Business Matters point of contact.

Items for Question	Points of Contact/ Phone numbers/ FAX Numbers	E-mail Addresses
Contractual Matters: The proposal Documents/ Amendments Receipt of Proposals	Kevin McElroy or Tarmara Brunow 402-221-4108 or 3527 (phone) 402-221-4199 (fax)	kevin.p.mcelory@usace.army.mil tamara.a.brunow@usace.army.mil
Small Business Matters	Hubert Carter 402-221-4110 (phone)	hubert.j.carter@usace.army.mil
Technical Contents Of Proposal Documents	Jay Hodges 402-221-3986 (phone) 402-221-4828 (fax)	jay.d.hodges@usace.army.mil

Or

Specifications Section douglsa.r.larsen@usace.army.mil
Doug Larsen
402-221-4547
402-221-3842

16 GENERAL DESCRIPTION OF WORK.

Scope of project includes all work required to design and construct an upgrade to the water distribution system located at U.S. Air Force Academy, Colorado. Work shall be in accordance with Request for Proposal documents issued with this solicitation.

17 PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS.

The offeror shall submit Section 00010 (Standard Form SF1442) and price proposal back-up information (by CSI Division).

18 PROPOSAL EVALUATION AND CONTRACT AWARD

The Government intends to award this contract based on the lowest price for all work.

19 COLORADO SALES AND USE TAX.

Specific exemption from the Colorado Sales and Use Taxes will be granted by the Colorado Tax authorities with respect to all materials used by a prime Contractor or subcontractor and which are built into structures furnished under contract to a Government agency. The Colorado Sales and Use Taxes shall be excluded from the bid prices. Exemption certificates are available to both Contractors and subcontractors provided personal application is made therefor to the Department of Revenue, State of Colorado, State Capitol Annex, Denver, Colorado. The Contractor or subcontractor will be required to submit the date of the contract, the amount of the contract, and the proposed date for completion of the contract. Telephone: (303) 534-1208 (General Information).

20 (FAR 52.232-18) AVAILABILITY OF FUNDS (APR 1984).

Funds are not presently available for this contract. The Government's obligation under this contract is contingent upon the availability of appropriated funds from which payment for contract purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer for this contract and until the Contractor receives notice of such availability, to be confirmed in writing by the Contracting Officer. (FAR 52.232-18)

REQUIRED CENTRAL CONTRACTOR REGISTRATION (CCR)

Register Now: Don't wait until you submit an offer on a solicitation. You must be registered to receive the contract award. It can often take 30 days for CCR to process your registration information.

Register One of Three Ways:

Internet: http://www.ccr.gov

Value Added Network (VAN) for EDI users: Contact your VAN for information. If you need to find a VAN look at http://www.acq.osd.mil/ec/ecip/van_list.htm

FAX or Mail: Call (888)227-2423 or (616)961-4725 to receive a registration package. FAX or mail the completed information to the CCR Assistance Center. It can take up to 30 days to process a faxed or mailed package.

CCR Assistance Center
74 Washington Street North, Suite 7
Battle Creek, MI 49017-3084
FAX: (616)961-7243

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SECTION 00800

SPECIAL CONTRACT REQUIREMENTS
5/00, Rev 9/01

PART 1 GENERAL

Attachments:
General Wage Decision No. CO010001

1.1 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 of receipt by him of Notice to Proceed, (b) prosecute said work diligently, and (c) complete the entire work ready for use not later than the 440 calendar days (which includes design, design reviews and all construction activities) after notice to proceed (NTP). The time stated for completion of the project shall include final cleanup of the premises. (FAR 52.211-10)

1.1.1 Sequence of Design-Construction

(a) After receipt of the Contract Notice to Proceed (NTP), the Contractor shall initiate design, comply with all design submission requirements as covered in Division 01 General Requirements of the advertised Solicitation, and obtain Government review of each submission. No construction may be started until the Government reviews the 100 Percent Corrected Design submission and determines it satisfactory for purposes of beginning construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Contracting Officer, 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 100 Percent Corrected 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.

1.2 LIQUIDATED DAMAGES-CONSTRUCTION (SEPT 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 $790.00.00 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. (FAR 52.211-12)

1.3 EXCEPTION TO COMPLETION TIME AND LIQUIDATED DAMAGES

In case the Contracting Officer determines that seeding and sodding and/or the specified maintenance thereof is not feasible during the construction

period, such work will be excepted from the completion time and liquidated damages. This work shall be accomplished during the first seeding and sodding period and the specified maintenance period following the completion date.

1.4 ORDER OF WORK

See paragraph: SPECIAL ACADEMY REQUIREMENTS below for items affecting the order of work.

1.5 DESIGN-BUILD CONTRACT - ORDER OF PRECEDENCE

(a) The contract includes the standard contract clauses and schedules current at the time of contract award. It entails (1) the solicitation in its entirety, including all drawings, cuts, and illustrations, and any amendments, and (2) the successful offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted which in any way bears upon the terms of that agreement.

(b) In the event of conflict or inconsistency between any of the provisions of this contract, precedence shall be given in the following order:

(1) Betterments: Any portion of the accepted proposal, which both conform to and exceed the provisions of the solicitation. "Betterment" is defined as any product, component, or system, which exceeds the requirements stated in the solicitation.

(2) The provisions of the solicitation. (See also Contract Clause entitled "SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION".)

(3) All other provisions of the accepted proposal.

(4) Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc.. These are "deliverable" under the contract and are not part of the contract itself. Design products must conform with all the provisions of the contract, in the order of precedence herein.

(c) Where conflicts between the solicitation requirements and the UFGS guide specifications (available as indicated in Section 01332 Submittals During Design) exist, the solicitation requirements shall take precedence. Any installation requirements within solicitation requirements, but not contained in the UFGS guide specifications, shall be added to the specifications or shown on the drawings.

1.6 RESPONSIBLITY OF THE CONTRACTOR FOR DESIGN

(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, spececifications, and other non-construction 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 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 described in paragraph (a) furnished under this contract.

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

1.7 SECURITY REQUIREMENTS

The Contractor shall provide the Contracting Officer an entrance authorization list of employees that will require access to the construction site on U.S. Air Force Academy, Colorado. This list shall include full employee name (as it would appear on a driver's license), company and and last 6 digits of social security number. The Contractor shall update this list anytime the names on the list change. Contractor employees are required to have a picture Identification and last 6 digits of social security number for entry onto the U.S. Air Force Academy, Colorado. The Contractor shall anticipate 1/2 hour entry delays for both delivery of materials and for personnel access to the installation. Both vehicles and personnel shall be subject to search.

1.8 MISSION DELAY DAYS

The Contractor shall anticipate a work delay of up to seven (7) days during the contract period due to Using Service operations. The Contractor will be notified one week in advance of these interruptions. This time is included in the overall completion time stated.

1.9 RFP DRAWINGS AND SPECIFICATIONS

Within thirty (30) days after award of the contract, the Government will furnish the Contractor a CD-ROM containing the RFP drawings in an AutoCAD format, RFP technical criteria requirements/specfications in a Specsintact format and other miscellaneous items (amendments and attachments). For additional information, See Section 01332, SUBMITTAL DURING DESIGN.

1.10 PHYSICAL DATA (APR 1984)

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

a. The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys and borings. The data shown graphically and by symbol for each respective boring represents the actual geologic features observed and logged at the location given on the drawings. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local minor variations characteristic of the subsurface materials of this region could occur.

b. Weather conditions shall have been investigated by the Contractor to satisfy himself as to the hazards likely to arise therefrom. Complete weather records and reports may be obtained from the local U.S. Weather Bureau.

c. Transportation facilities shall have been investigated by the Contractor to satisfy himself as to the existence of access highways and railroad facilities. (FAR 52.236-4)

1.11 CONCURRENT CONSTRUCTION

Construction work closely related to and/or located at the site of the work under a concurrent contract, including Upgrade Athletic Project will be in progress simultaneously with work under this contract. The Contractor shall cooperate with others as necessary in the interest of timely completion of all work. In the event of interference, the Contracting Officer shall be notified immediately for resolution and his decision shall be final.

1.12 PAYMENT

1.12.1 PROMPT PAYMENT ACT

Pay requests authorized in CONTRACT CLAUSES clause: "Payments Under Fixed-Price Construction Contracts", will be paid pursuant to the clause, "Prompt Payment for Construction Contracts". Pay requests will be submitted on ENG Form 93 and 93a, "Payment Estimate-Contract Performance" and "Continuation". All information and substantiation required by the identified contract clauses will be submitted with the ENG Form 93, and the required certification will be included on the last page of the ENG Form 93a, signed by an authorized contractor official and dated when signed. The designated billing office is the Office of the Area Engineer.

1.12.2 PAYMENTS FOR MODIFICATIONS

Payments may be made for cost bearing change orders within the scope of the contract only to the extent funds are authorized in the order on a two-part modification. Contractor pricing proposed must be submitted at the earliest possible time after the change order is issued, or at a specific time as directed by the Contracting Officer. At the discretion of the Contracting Officer, any and all payments may be withheld on the modification until the Contractor has submitted a qualifying price proposal, in as much detail as required by the Contracting Officer, and the final price has been agreed.

1.12.3 PAYMENT FOR MATERIALS DELIVERED OFFSITE (MAR 1995)

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 (2) 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. Payment for materials delivered off-site includes petroleum products. (List additional items for which payments will be made for off-site delivery.) (EFAR 52.232-5000)

1.13 AVAILABILITY OF UTILITY SERVICES

All reasonably required amounts of domestic water and electricity will be made available to the Contractor by the Government from existing system outlets and supplies at no cost. The Contractor shall, at his own expense, make all temporary connections and install distribution lines. The Contractor shall furnish to the Contracting Officer a complete system layout drawing showing type of materials to be used and method of installation for all temporary electrical systems. . All temporary lines shall be maintained by the Contractor in a workmanlike manner satisfactory to the Contracting Officer and shall be removed by the Contractor in like manner prior to final acceptance of the construction. Normal quantities of electricity and water used to make final tests of completely installed systems will be furnished by the Government.

1.14 UTILITY SERVICE INTERRUPTIONS

All existing utilities, including but not limited to storm drains, electrical, sewer, gas, water, and communication lines that are crossed during installation of the new water system shall remain in service during construction. If this is not possible, all outages shall be coordinated with the Contracting Officer's Representative.

1.15 DIGGING PERMITS AND ROAD CLOSINGS

The Contractor shall allow 14 calendar days from date of written application to receive permission to dig and to close roads. Roads shall only be closed one lane at a time and vehicular traffic shall be allowed to pass through the construction area. Work on or near roadways shall be flagged in accordance with the safety requirements in Safety and Health Requirements Manual EM 385-1-1, which forms a part of these specifications. Work located along the alert force route shall not cause blockage and the Contractor shall maintain unobstructed access for alert force traffic at all times.

1.16 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

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

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

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

b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line

for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(08)	(05)	(04)	(04)	(06)	(04)	(07)	(05)	(03)	(02)	(03)	(06)

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 entitled "Default (Fixed Price Construction)". (ER 415-1-15)

1.17 INSURANCE REQUIRED

In accordance with CONTRACT CLAUSES clause: "Insurance Work on a Government Installation," the Contractor shall procure the following minimum insurance:

Type	Amount
Workmen's Compensation and Employer's Liability Insurance	$100,000
General Liability Insurance	$500,000 per occurrence
Automobile Liability Insurance	
Bodily injury	$200,000 per person and $500,000 per occurrence
Property damage	$ 20,000 per occurrence

(Coverages per FAR 28.307-2)

1.18 SECURITY REQUIREMENTS

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display such identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting Officer, for cancellation upon release of any employees. When the contract involves work in restricted security areas, only employees who are U.S. citizens will be permitted to enter. Proof of U.S. citizenship is required prior to entry. When required by the Contracting Officer, the Contractor shall obtain and submit fingerprints of all persons employed or to be employed on the project. (Based on FAR 52.204-2)

1.19 CONTRACTOR QUALITY CONTROL (CQC)

See Section 01451A Contractor Quality Control.

1.20 NONDOMESTIC CONSTRUCTION MATERIALS

The List of nondomestic construction materials or their components included in the list set forth in paragraph 25.104 of the Federal Acquisition Regulation does not apply to the requirements of the contract clause entitled "Buy American Act Construction Materials".

1.21 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be a 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. (FAR 52.211-14)

1.22 DAILY WORK SCHEDULES

In order to closely coordinate work under this contract, the Contractor shall prepare a written agenda and attend a weekly coordination meeting with the Contracting Officer and Using Service at which time the Contractor shall submit for coordination and approval, his proposed daily work schedule for the next two week period. The Contractor shall provide a copy of modifications (MODs), Serial Letters, Requests for Information (RFIs)and any other innformation that is needed in the minutes of the meeting. Required temporary utility services, time and duration of interruptions, and protection of adjoining areas shall be included with the Contractor's proposed 2-week work schedule. At this meeting, the Contractor shall also submit his schedule of proposed dates and times of all preparatory inspections to be performed during the next 2 weeks. The items of work listed on the proposed 2-week schedule are to be keyed to the NAS by activity number and description for each activity anticipated to be performed during the next 2-week period. Coordination action by the Contracting Officer relative to these schedules will be accomplished during these weekly meetings. Daily reports shall be completed and given to the Contracting Officer or Representative within 24 hours of work. The Contractor shall keep written minutes of these meetings and shall distribute copies to all attendees within three days of these meetings.

1.23 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAR 1995)

a. This statement shall become operative only for negotiated contracts where cost or pricing data is requested, and for modifications to sealed bid or negotiated contracts where cost or pricing data is requested. This clause does not apply to terminations. See 52.249-5000, Basis for settlement of proposals and FAR Part 49.

b. Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a Contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the Contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series of equipment from the Contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, "Construction Equipment Ownership and Operating Expense

Schedule," Region V. Copies of each regional schedule may be obtained through the following internet site: http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep.htm or on the CD-ROM issued for this solicitation. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the Contracting Officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be developed using the formula provided in the schedule. For forward pricing, the Schedule in effect at the time of negotiations shall apply. For retrospective pricing, the Schedule in effect at the time the work was performed shall apply.

c. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

c. When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet. (EFARS 52.231-5000)

1.24 AS-BUILT DRAWINGS

See SECTION 01040 - AS-BUILT DRAWINGS

1.25 CONTRACTOR FURNISHED EQUIPMENT DATA

See Section 01200 Warranty of Construction for Contractor Furnished Equipment Data to be submitted as part of the Warranty Equipment Booklet.

1.26 ACCOMMODATIONS FOR GOVERNMENT INSPECTORS

The Contractor shall furnish a temporary office facility approximately 10 feet x 20 feet with a minimum of 200 square feet of floor space. It shall be located where directed and shall be reserved for Government personnel only. Drinking water facilities, adequate lighting, local commercial telephone service, air-conditioning, heating equipment, and a partition enclosed chemical toilet shall be furnished and maintained by the Contractor. The office shall be furnished with one legal size filing cabinet with four drawers, one drafting table with stool, one plan rack, one desk, and three chairs. Used furniture, in good condition, will be acceptable. Entrance doors shall be equipped with a substantial lock. The Contractor shall provide janitor service, 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. The entire facility, including furniture, will remain the property of the Contractor and shall be removed from the site after completion of the work.

1.27 PERFORMANCE OF WORK BY CONTRACTOR (APR 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least twenty (20) percent of the total amount of work

to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government. (FAR 52.236-1)

1.28 PARTNERING

a. The Government intends to encourage the formation of a cohesive partnership with the Contractor. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objective is effective contract performance in achieving completion within budget, on schedule and in accordance with plans and specifications. This partnership between the Contractor and the Government will be voluntary and its implementation will not be part of the contract requirements nor will it result in a change to contract price or terms.

b. It is anticipated that immediately after the preconstruction conference, the appropriate Contractor's key personnel and Government key personnel will attend a 1-day team building workshop. Follow-up workshops of 1 days duration may be held periodically throughout the duration of the contract as agreed to by the Contractor and the Government. Costs of the facilitator and facilities for the workshops will be shared equally by the participants.

1.29 PROFIT

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

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

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

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

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

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

(4) Periods of Performance. Jobs in excess of 24 months are to be weighted at .12. Jobs of lesser duration are to be proportionately weighted to a minimum of .03 for jobs not to exceed 30 days. No weight where additional time not required.

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

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

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

1.30 LABOR CONDITIONS APPLICABLE TO TEMPORARY FACILITIES

It is the position of the Department of Defense that the Davis-Bacon Act, 40 U.S.C. 276a is applicable to temporary facilities such as batch plants, sandpits, rock quarries, and similar operations, located off the immediate site of the construction but set up exclusively to furnish required materials for a construction project on the site of the work. Clause "Payrolls and Basic Records" of the CONTRACT CLAUSES is applicable to such operations.

1.31 DRAWING SCALES

All scales shown on the RFP project drawings are based on a standard drawing size of 28" x 40" . If any other size drawings are furnished or plotted, the contractor shall adjust the scales accordingly. The Contractor shall also advise his sub-contractors of the above.

1.32 WAGE RATE APPLICATION

Applicable to all work.

1.33 (FAR 52.222-23) NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO

ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

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

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

Goals for Minority Participation for Each Trade	Goals for Female Participation for Each Trade
10.9	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 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 Colorado Springs SMSA-1720, which El

Paso county is a part of.

1.34 FEDERAL HOLIDAYS

The following Federal legal holidays are observed by this installation:

New Year's Day	1 January
Martin Luther King's Birthday	Third Monday in January
President's Day	Third Monday in February
Memorial Day	Last Monday in May
Independence Day	4 July
Labor Day	First Monday in September
Columbus Day	Second Monday in October
Veterans Day	11 November
Thanksgiving Day	Fourth Thursday in November
Christmas Day	25 December

If a wage determination applies the number of holidays specified on it, it has priority over this clause.

1.35 SPECIAL ACADEMY REQUIREMENTS

a. All earth, concrete rubble, broken asphalt, metal, etc., shall be properly disposed of off Government lands at the Contractor's expense.

b. A construction storage and staging area, as shown on the drawings, will be made available to the Contractor near the site.

c. The Contractor's work areas and personnel will be restricted to designated construction areas.

d. All Contractor-owned or Company-owned vehicles brought onto Government land by the Contractor shall have the company name displayed on the vehicle.

e. The Contractor's work hours shall be between 7:00 a.m. and 5:00 p.m., Monday through Friday, unless other hours are required and approved by the Contracting Officer.

f. All buildings and parking areas in the adjacent areas will be operational during the construction period.

g. The Contractor shall obtain a digging permit at no cost from the Using Service through the Contracting Officer before any digging operations commence.

h. Not Used.

i. Not Used.

j. The Contractor shall keep the fire lanes open for access around adjacent buildings and parking areas.

k. Not Used.

l. If VIP visit, parades, etc. are scheduled, the Contractor shall minimize outdoor activity and clean-up the construction site. The Contracting Officer will provide a 48 hour notice of these activities to the Contractor.

m. No work will be allowed at the construction site during the last week in May of any year due to Air Force Academy event days (graduation). No time extensions will be granted for delays during this period.

PART 2 NOT USED

PART 3 NOT USED

GENERAL DECISION CO010001 12/28/01 CO1

General Decision Number CO010001

Superseded General Decision No. CO000001

State: Colorado

Construction Type:
HEAVY
HIGHWAY

County(ies):
STATEWIDE

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/02/2001
1	03/09/2001
2	05/04/2001
3	07/06/2001
4	07/20/2001
5	08/10/2001
6	10/05/2001
7	10/12/2001
8	10/19/2001
9	10/26/2001
10	11/09/2001
11	12/28/2001

COUNTY(ies):
STATEWIDE

CARP0002E 05/01/2001

	Rates	Fringes
CARPENTERS	19.77	5.40

CARP2834A 05/01/2001

	Rates	Fringes
MILLWRIGHTS	22.22	5.84

ELEC0012B 06/01/2000

	Rates	Fringes
ALAMOSA, ARCHULETA, BACA, BENT, CHAFFEE, CONEJOS, COSTILLA, CROWLEY,CUSTER, FREMONT, HUERFANO, KIOWA, LAS ANIMAS, MINERAL, OTERO,PROWERS, PUEBLO, RIO GRANDE AND SAGUACHE COUNTIES		
ELECTRICIANS:		
Electrical work $200,000 or less	18.98	3%+6.14
Electrical work over $200,000	22.13	3%+6.14

ELEC0068A 06/01/2001

	Rates	Fringes
ADAMS, ARAPAHOE, BOULDER, CLEAR CREEK, DENVER, DOUGLAS, EAGLE, GILPIN, GRAND, JACKSON, JEFFERSON, LAKE, LARIMER, LOGAN, MORGAN, PHILLIPS, SEDGWICK, SUMMIT, WASHINGTON, WELD AND YUMA COUNTIES		
ELECTRICIANS	25.76	3%+7.21

ELEC0111A 09/01/2001

	Rates	Fringes
LINE CONSTRUCTION:		
Cable Splicers	26.06	19.75%+2.20
Lineman, Gas Fitter/Welder	26.56	19.75%+2.20
Line Equipment Operator, Line Truck Crew	20.73	19.75%+2.20
Groundman	13.64	19.75%+2.20

ELEC0111B 03/01/1998

	Rates	Fringes
TRAFFIC SIGNAL INSTALLER	18.56	10.6%+ 2.00
EQUIPMENT OPERATOR	17.48	10.6%+ 2.00
GROUNDMAN	11.52	10.6%+ 2.00

ELEC0113C 06/01/2001

	Rates	Fringes
CHEYENNE, ELBERT, EL PASO, KIT CARSON, LINCOLN, PARK, AND TELLER COUNTIES		
ELECTRICIANS	23.35	3%+8.14

ELEC0969C 06/01/2000

	Rates	Fringes
DELTA, DOLORES, GARFIELD, GUNNISON, HINSDALE, LA PLATA, MESA, MOFFAT, MONTEZUMA, MONTROSE, OURAY, PITKIN, RIO BLANCO, ROUTT, SAN JUAN AND SAN MIGUEL COUNTIES		
ELECTRICIANS	20.35	4%+5.14

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* ENGI0009A 04/23/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS: (TUNNELS ABOVE AND BELOW GROUND, SHAFTS, AND RAISES)		
GROUP 1	20.67	5.17
GROUP 2	21.02	5.17
GROUP 3	21.12	5.17
GROUP 4	21.37	5.17
GROUP 5	21.52	5.17
GROUP 6	21.67	5.17
GROUP 7	21.92	5.17

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Brakeman

GROUP 2 - Motorman

GROUP 3 - Compressor

GROUP 4 - Air Tractors; Grout Machine; Gunnite Machine; Jumbo Form

GROUP 5 - Concrete Placement Pumps; Mucking Machines and Front End Loaders, Underground, Slusher; Mine Hoist Operator; Mechanic

GROUP 6 - Mechanic Welder

GROUP 7 - Mole

ENGI0009B 04/23/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1	18.52	5.17
GROUP 2	18.87	5.17
GROUP 3	19.22	5.17
GROUP 4	19.37	5.17
GROUP 5	19.52	5.17
GROUP 6	19.67	5.17
GROUP 7	20.43	5.17

NOTE: Any equipment listed below being used in tunnel work, below

or above ground shall be paid not less than $2.00 per hour above the listed wage rates.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - Air compressor, oiler, brakeman, drill operator - smaller than Williams MF and similar, tender to heavy duty mechanic and/or welder, operators of 5 or more light plants, welding machines, generators, single unit conveyor, pumps, vacuum well point system, tractor, under 70 hp with or without attachments compressors, 360 C.F.M. or less

GROUP 2 - Conveyor, handling building materials, ditch witch and similar trenching machine, fireman or tank heater, road,forklift, haulage motor man, pugmill, portable screening plant with or without a spray bar, screening plants, with classifier, self-propelled roller, rubber-tires under 5 tons, grade checker

GROUP 3 - Asphalt screed, asphalt plant, backfiller, bituminous spreader or laydown machine; cableway signalman, caisson drill, William MF, similar or larger; C.M.I. and similar, concrete batching plants, concrete finish machine, concrete gang saw on concrete paving, concrete mixer, less than 1 yd., concrete placement pumps, under 8 inches, distributors, bituminous surfaces, drill, diamond or core, drill rigs, rotary, churn, or cable tool, elevating graders, equipment, lubricating and service engineer, engineer fireman, grout machine, gunnite machine, hoist, 1 drum, hydraulic backhoes, wheel mounted under 3/4 yd., loader, barber green, etc.; loader up to and including 6 cubic yards,motor grader/blade, rough; road stabilization machine, rollers, self- propelled all types over 5 tons, sandblasting machine, single unit protable crusher, with or without washer, tie tamper, wheel mounted, tractor, 70 hp and over with or without attachments, trenching machine operator,winch on truck

GROUP 4 - Cable operated crane, track mounted, cable operated power shovels, draglines, clamshells, and backhoes, 5 cubic yards and under, concrete mixer over 1 cubic yard, concrete paver 34E or similar, concrete placement pumps, 8 inches and over, crane, 50 tons and under, hoist, 2 drums, hydraulic backhoe, 3/4 yds and over, loader, over 6 cubic yards, machine doctor, mechanic, mixer mobile, motor grader/blade, finish, multiple unit portable crusher, with or without washer; piledriver, scrapers, single bowl under 40 cubic yards, self- propelled hydraulic crane, tractor with sideboom, truck mounted hydraulic cane, roto-mill and similar, welder

GROUP 5 - Cable operated power shovels, draglines, clamshells and backhoes over 5 cubic yards, crane 51 to 90 tons carrier mounted, electric rail type tower crane, hoist, 3 drum or more, quad nine and similar push unit, scrapers single bowl including pups 40

cubic yards and tandem bowls and over mechanic - welder (heavy-duty)

GROUP 6 - Cableway, crane (91 to 140 tons), climbing tower crane,

crawler or truck mounted tower crane, derrick, wheel excavator, tower crane, rail type, belt or elevating loader

GROUP 7 - Cranes (140 tons and over)

IRON0024F 08/01/2001

	Rates	Fringes
IRONWORKERS:		
STRUCTURAL, ORNAMENTAL, AND REINFORCING	21.00	7.36

LABO0086A 05/01/2001

	Rates	Fringes
LABORERS:		
GROUP 1	11.75	3.64
GROUP 2	15.10	3.64
GROUP 3	15.60	3.64

LABORER CLASSIFICATIONS

GROUP 1 - Janitors; Yardmen

GROUP 2 - Minimum labor, Traffic Control Director(certified); including caissons to 8' carrying Reinforcing Rods; Dowel Bars; Fence Erectors; Fire Watchers on power plants and oil refineries; Gabion Basket and Reno mattresses; Signaling, Metal Mesh; Nursery Man (including seeding; mulching and planting trees); pipe plants and yards; Shrubs and flowers; Stake Caser; Traffic Control Devices; Tie Bars and Chairs in Concrete; Paving; Waterproofing Concrete; Air, Gas, Hydraulic Tools and Electrical Tool Operators; Barco Hammers; Cutting Torches; drill; diamond and core drills; Core, diamond, air track including but not limited to; Joy, Mustang, PR-143, 220 Gardner-Denver, Hydrosonic, and water blaster operator; Chuck Tender; Electric hammers; Jackhammers; Hydraulic Jacks; Tampers; Air Tampers; Boring Machines; Air Hydraulic Boring machines; Automatic Concrete Power Curbing Machines; Concrete Processing Material; form setters; Highways, Streets, and Airports runways; Operators of concrete saws on pavement (other than gangsaws); Power operated Concrete Buggies; Hot Asphalt Labor; Asphalt Curb Machines; Paving Breakers; Transverse Concrete Conveyor Operator; Cofferdams; Boxtenders; Caisson 8' to 12'; Caisson Over 12'; Jackhammer Operators in Caissons over 12'; Labor applicable to Pipe coating or Wrapping; Pipe Wrappers, Plant and Yard; Relining Pipe; Hydroliner (a plastic may be used to waterproof); Pipelayer on Underground Bores; Sewer, Water, Gas, Oil and Telephone Conduit; Enamalers on Pipe, inside and out, Mechanical Grouters; Monitors; Jeep Holiday Detector Men; Pump Operators; Rakers; Vibrators; Hydro- broom,

Mixer Man; Gunnite Nozzelmen; Shotcrete Operator; and chain saws, gas and electric; Sand Blaster; Licensed Powdermen; Powdermen and Blaster; Siphons; Signalmen; Dumpman/spotter; Grade Checker.

GROUP 3 - Plug and galleys in dams; Scalers; any work on or off Bridges 40' above the ground performed by Laborers working from a Bos'n Chair, Swing Stage, Life Belt, or Block and Tackle as a safety requirement

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LABO0086B 05/01/2001

	Rates	Fringes
LABORERS: (TUNNEL)		
GROUP 1	15.05	3.64
GROUP 2	15.95	3.64
GROUP 3	16.05	3.64
GROUP 4	17.15	3.64
GROUP 5	17.10	3.64

TUNNEL LABORER CLASSIFICATIONS

GROUP 1 - Outside Laborer - Above ground

GROUP 2 - Minimum Tunnel Laborer, Dry Houseman

GROUP 3 - Cable or Hose Tenders, Chuck Tenders, Concrete Laborers, Dumpmen, Whirley Pump Operators

GROUP 4 - Tenders on Shotcrete, Gunniting and Sand Blasting; Tenders, core and Diamond Drills; Pot Tenders

GROUP 5 - Collapsible Form Movers and Setters; Miners; Machine Men and Bit Grinders; Nippers; Powdermen and Blasters; Reinforcing Steel Setters; Timbermen (steel or wood tunnel support, including the placement of sheeting when required); and all Cutting and Welding that is incidental to the Miner's work; Tunnel Liner Plate Setters; Vibrator Men, Internal and External; Unloading, stopping and starting of Moran Agitator Cars; Diamond and Core Drill Operators; Shotcrete operator; Gunnite Nozzlemen; Sand Blaster; Pump Concrete Placement Men.

LABO0086C 05/01/2001

	Rates	Fringes
LABORERS: (SHAFTS, RAISES, MISSILE SILOS AND ALL UNDERGROUND WORK OTHER THAN TUNNELS)		
GROUP 1	16.05	3.64
GROUP 2	16.20	3.64
GROUP 3	16.30	3.64
GROUP 4	16.55	3.64
GROUP 5	16.65	3.64
GROUP 6	17.25	3.64

LABORER CLASSIFICATIONS (SHAFTS, RAISES, MISSILE SILOS AND UNDERGOUND)

GROUP 1 - Laborers; Topmen; Bottommen; Cagers

GROUP 2 - Chucktenders; Concrete Laborers; Whirley Pump Operators

GROUP 3 - Tenders in Shotcrete Gunniting and Sandlasting; Tenders on Core and Diamond Drills; Pot Tenders

GROUP 4 - Diamond and Core Drill Operators; Gunnite Nozzlemen; Shotcrete Operators; Sandblasters; and Pump Concrete Placement Men

GROUP 5 - Any employee performing work underground from a bos'n chair, swinging stage, life belt or block and tackle as a safety requirement

GROUP 6 - Collapsible Form Movers and Setters, Miners, Machine Men and Bit Grinders; Nippers; Powdermen and Blasters; Reinforcing Steel Setters; Timbermen (steel or wood tunnel support, Including the Placement of Sheeting when Required) and all Cutting and Welding that is Incidental to the Miner's Work; Liner Plate Setters; Internal and External Vibrator Men;

LABO0086D 05/01/2001

	Rates	Fringes
LABORERS:		
Removal or encapsulation of Asbestos Material (including removal of asbestos from mechanical systems that are going to be scraped) and work involving the removal, handling, or dealing with toxic or hazardous waste	18.45	3.64
WATER, SEWAGE AND GAS LINES		
Janitors, Yardmen	11.75	3.64
Laborers, Traffic Control Director	14.35	3.64
Pipelayer (one per crew)	14.85	3.64

PAIN0079G 08/01/2001

	Rates	Fringes
PAINTERS:		
BRUSH	19.41	4.02
SPRAY AND SWING STAGE	20.41	4.02

PLAS0577D 05/01/2000

	Rates	Fringes
CEMENT MASONS	20.20	3.52
HAZARDOUS AND TOXIC WASTE CONSTRUCTION SPECIALIST:	22.20	3.52
CONCRETE SPECIALIST: Including finishing; grouting patching and curbing	23.20	3.52

PLUM0003E 07/01/2001

	Rates	Fringes
DENVER COUNTY		
PLUMBERS	25.67	5.99

PLUM0020E 07/01/2001

	Rates	Fringes

ALAMOSA, BACA, BENT, CHAFFEE, COSTILLA, CROWLEY, CUSTER, FREMONT, HUERFANO, KIOWA, LAS ANIMAS, MINERAL, OTERO, PROWERS, PUEBLO, RIO GRANDE & SAGUACHE

PLUMBERS & PIPEFITTERS (Including HVAC Work):

Free Zone - 0 - to 40 miles	19.85	6.17

Zone 1 - 40 miles and over: $19.85 per hour + $32.00 per day per diem will be paid on projects over 40 miles (Zone 1) measured in practical driving miles by the shortest route, beginning at 5th and Main Streets in Pueblo, Colorado, when the employee stays overnight or drives their own vehicle.

Hazardous Pay: Add $2.20 per hour to $19.85 base rate. Hazardous pay applies to projects at chemical plants, steel mills, cement plants, power generator plants, process piping at manufacturing plants, food processing plants,and all projects which may present a health hazard or serious personal injury.

PLUM0058E 07/01/2001

	Rates	Fringes

CHEYENNE, EL PASO, AND TELLER, ELBERT (SOUTHERN PORTION INCLUDING THE TOWNS OF ELBERT, MATHERSON AND SIMLA), LINCOLN (INCLUDING THE TOWN OF GEONA AND ARRIBA IN THE SOUTHERN PORTION OF COUNTY), KIT CARSON (INCLUDING TOWNS OF DFALGLER, SEIBERT, VONA, STRATTON AND BETHUNE), DOUGLAS (INCLUDING TOWNS OF LASPUR AND PALMER LAKE), PARK (INCLUDING TOWNS OF FAUPLAY, HARTSEL, AND LAKE GEORGE) COUNTIES

PLUMBERS & PIPEFITTERS:	24.30	6.40

PLUM0145B 05/01/2001

	Rates	Fringes
MONTEZUMA COUNTY		
PLUMBERS	21.78	5.50

PLUM0208J 07/01/2001

	Rates	Fringes
DENVER COUNTY:		
PIPEFITTERS	25.77	5.89

TEAM0435A 05/01/2000

TRUCK DRIVERS:	Rates	Fringes
GROUP 1	14.21	5.27
GROUP 2	14.93	5.27
GROUP 3	15.27	5.27
GROUP 4	15.80	5.27
GROUP 5	16.45	5.27
GROUP 6	17.25	5.27

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 Pickup, Greasemen, Servicemen and Ambulance Drivers, Battery Men, Sweeper Truck, Flat Rack Single Axle and Manhaul, Shuttle Truck or Bus, Flat Rack Tandem Axle.

GROUP 2 Dump Truck Driver to and including 6 cubic yards, Dump Truck Driver over 6 cubic yards to and including 14 cubic yards, Fork Lift Driver, Straddle Truck Driver, Lumber Carrier, Liquid and Bulk Tankers Single Axle, Tandem Axle, Semi or Combination, Euclid Electric or Similar, Multipurpose Truck Specialty and Hoisting, Truck Drivers Fuel Truck, Grease Truck, Combination Fuel and Grease.

GROUP 3 Truck Driver Snow Plow, Truck Driver Dumptor Type Jumbo and similar type equipment, Dump Truck Driver of 14 cubic yards to and including 29 cubic yards, Floats.

GROUP 4 Dump Truck Driver over 29 cubic yards to and including 79 cubic yards, Cement Mixer Agitator Truck over 10 cubic yards to and including 15 cubic yards, Tire Man, Distributor Truck Driver, Cab Operated Distributor Truck Driver.

GROUP 5 Dump Truck Driver over 79 cubic yards, Mechanic, Heavy Duty Diesel Mechanic, Body Man, Welders or Combination Men.

GROUP 6 Low Boy.

WELDERS - Receive rate prescribed for craft performing operation

to which welding is incidental.

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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

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01001

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PART 1 SUMMARY OF WORK

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1.2 GOALS AND OBJECTIVES
1.2.1 Alternate Construction Methods
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1.7 SEQUENCE OF DESIGN-CONSTRUCTION

PART 2 NOT USED

PART 3 NOT USED

-- End of Section Table of Contents --

SECTION 01001

SUMMARY OF WORK

PART 1 SUMMARY OF WORK

1.1 FUNCTION

1.1.1 Upgrade Water Distribution System

Upgrade Water Distribution System located at U.S. Air Force Academy, Colorado will provide a quality water distribution system to enhance both the mission effectiveness and the quality of life at this base.

This Water Distribution System is being designed to allow for adequate domestic and fire water supplies for the northern sections of the base.

Included with the construction of the water distribution system is a new 16-inch water supply line from the existing stub-out connection to the new water storage tank, an 800,000 gallon buried water storage tank and chlorination equipment for the water system.

The water distribution system will be located from Reservoir 1 to the Cadet Area. The new water storage tank will be located to the north/northwest of existing Reservoir 1.

The new water storage tank will be a buried concrete storage tank. The project includes a fenced in area around the tank and an access road to the area.

1.2 GOALS AND OBJECTIVES

Based on user interviews during the predesign conference:

1.2.1 Alternate Construction Methods

Alternate methods and materials, which represent value-for-the-money, will be considered for all aspects of the project, except where prohibited by the RFP. The intent of this design-build proposal is to present an overall design concept with some definition of the systems to be used. It shall be the responsibility of the design-build contractor to assemble the best value-priced construction systems for this project that meet or exceed the design criteria set forth herein.

Perscriptive Requirements: Specific direction is provided and alternate methods and materials will not be considered, unless directed otherwise by the Contracting Officer.

Performance Requirements: Specific direction has not been provided and alternate construction methods will be considered as long the system meets or exceeds the design criteria given.

1.2.2 Sustainable Design Technology

To the extent referenced in the solicitation, the Contractor shall provide a facility which utilizes sustainable design principles. The basic objectives are to:

1) Reduce consumption of energy, land and other non-renewable resources.

2) Minimize waste of materials, water, and other limited resources.

3) Consider the cost of energy dollars while creating livable, healthy and productive environments that maintain comfort, health, and safety for the people using the facility.

Green Building Technology and Whole Building Design are referenced names involving sustainable design principles.

Related References:

ETL 1110-3-491 (31 January 2000) Sustainable Design for Military Facilities

Web Sites to Consider for Sustainable Design:

EPA Designated product (available at http://www.epa.gov/cpg)

Green Building Council: http://www.usgbc.org

Whole Building Design Guide: http://www.wbdg.org/

Energy Star Building Program - Eviromental Protection Agency: http:www.epa.gov/energystar/

Leadership in Energy and Environmental Design Green Building Rating System Criteria (LEED) U.S. Green Building Council: http://www.usgbc.org/programs.leed.htm

U. S. Department of Energy website:

www.eren.doe.gov/buildings/build_design.html

Air Force Space Command:
USAF Environmentally Responsible Facility Guide
(http://www.afcee.brooks.af.mil/green/facilitiesguide/erfguide.pdf)

1.3 DRAWINGS

Functional concept drawings of the site area are included for use in developing this design.

1.4 OPERATION AND MAINTENANCE REQUIREMENTS/TRAINING

1.4.1 Operation and Maintenance Manuals

The intent of the O&M Manuals are to promote and maximize the efficiency, economy, safety, and effectiveness of the life cycle operation, maintenance, and repair of the facility. Operation and maintenance manuals as required by the Technical Specifications (Divisions 1 thru 16) shall be provided.

1.4.2 Training

The Contractor shall provide operational and maintenance training for all systems furnished under this contract. The training will be for the operating and maintenance personnel. The training shall be put on by the system manufacturer. The training shall not take place until the operation and maintenance manuals are submitted and approved. The Contractor shall video tape the training session on VHS tapes and provide tapes to the Government.

1.5 OVERVIEW OF DESIGN-BUILD PROCESS

1.5.1 Overview

Since the early 1980s Congress has urged the military services to explore alternative construction methods, such as "Design-Build," which includes both design and construction under a single contract. This process is similar to "one-step turnkey selection procedures" and is defined in Title 10 of the United States Codes, Section 2862.

1.5.2 Process

The design-build process uses a Request for Proposal (RFP) to solicit for design and construction of a project by a single contractual entity, such as a design-build firm, or joint venture between architect-engineer (A-E) and construction firm, or a construction management (CM) firm joint venture with an A-E and a construction firm. A design-build RFP states the project functional requirements, design and engineering criteria, technical performance specifications, and proposal evaluation factors. Potential contractors develop their proposals for the government to evaluate competitively, with the contract award based on a combination of technical merit and price.

In general, the RFP is a conceptual design document and the design-build contractor is responsible for completing the design and constructing the project. The RFP has developed the site plan and building design and given the facility an architectural character. These designs, with minor deviations allowed for detailing and constructibility, must be carried through to construction. The design-build contractor is responsible for all other designs on the project, such as the HVAC system, as long as they fit within the established criteria, and can be built on time and within budget.

After award of the contract, the design-build contractor will prepare a series of design submittals for review by the Government, so that design and criteria compliance can be effectively monitored for compliance. After approval of the final design, construction can begin. On-site construction activities shall not begin until all final corrected plans, specifications and design analysis for the entire project (as defined in Section 00800) have been accepted by the Government (for purposes of beginning construction), and construction documents are received).

1.6 DESIGN-BUILD CONTRACTOR REQUIRED A/E SERVICES

The following is a condensed summary of Section 01332, "SUBMITTALS DURING DESIGN" contained elsewhere in this document. Refer to this Section for the full requirements.

1.6.1 Dimensions

Design, products and construction for the Upgrade Water Distribution System project shall be accomplished using english expressions of measurement. All measurements in the technical performance specifications sections are shown in english

1.6.2 Professional Licenses

The award of contract will be made to one qualified contractual entity who will be responsible for design completion and the entire construction process for the facility. This contractual entity shall employ qualified design professionals with appropriate state licenses.

1.6.3 Request For Proposal - Binding Information

The information contained in this Request for Proposal (RFP) shall be considered binding unless specifically waived by the Contracting Officer. The successful offerer's proposal, along with any clarifications and/or best and final offers are a binding part of this contract. Site design, building design, architectural character and engineering/performance criteria shall be implemented through construction by the design-build Contractor.

1.6.4 Evaluation of Systems

As part of the basic services, the design-build contractor shall evaluate building systems and components for their possible inclusion into the design. If these systems and components meet the specified design and performance criteria in the RFP, they may then be incorporated into the work.

1.6.5 Document Requirements

For a more detailed list of design and construction submittals, see Section 01332, Submittal During Design.

1.6.5.1 Design documents at all stages of design include:

Construction drawings.

Specifications.

Design analysis narrative with calculations for all disciplines.

Magnetic media at the 100 percent corrected final design only.

1.6.5.2 Drawing Requirements

All design drawings shall be accomplished using english units of measurement. Prepare 28 inches x 40 inches full-size drawings and half-size drawings in accordance with the Omaha District CADD Standards Manual (Available at the following internet address: ftp://ftp.nwo.usace.army.mil/pub/ED/CADD/ae/standards/

file: ACADstd.pdf for AutoCAD.

The design-build contractor shall submit the design at various stages of completion, plus the final documents, for review and comment. These stages are:

60 percent design submittal.

100 percent design submittal.

100 percent corrected final design.

1.6.5.3 60 Percent Design Requirements

Drawings, specifications, design analysis and calculations for all disciplines at an approximate 60 percent level of completion.

1.6.5.4 100 Percent Design Requirements

Incorporate all comments from the 60 percent review.

Drawings, specifications, design analysis and calculations for all disciplines at 100 percent level of completion. All aspects of the project are complete.

1.6.5.5 100 Percent Corrected Final Design

Incorporate comments from the 100 percent design submittal.

Magnetic media (See Section 01332, SUBMITTALS DURING DESIGN)..

1.7 SEQUENCE OF DESIGN-CONSTRUCTION

The schedule for design-construction shall meet the requirements as set forth in the provisions of the contract. See Section 00800 SPECIAL CONTRACT REQUIREMENTS for additional requirements.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01002

SITE WORK

PART 1 SITE WORK

1.1 REFERENCES

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA M17	(1989)Installation, Field Testing, and Maintenance of Fire Hydrants
AWWA C651	(1992) Disinfecting Water Mains

AIR FORCE MANUALS (AFM)

AFM 88-10	(1986) Water Supply, Water Distribution

TECHNICAL INSTRUCTION (TI)

TI 814-01	(1998) Water Supply
TI 814-03	(1998) Water Distribution

AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM)

ASTM D 977	(1991) Emulsified Asphalt
ASTM D 2027	(1976; R 1992) Cutback Asphalt (Medium-Curing Type)
ASTM D 2028	(1976; R 1992) Cutback Asphalt (Rapid-Curing Type)
ASTM D 2397	(1994) Cationic Emulsified Asphalt

MILITARY HANDBOOKS (MH)

MIL-HDBK-1008C	(10 Jun 1997) Fire Protection for Facilities Engineering, Design, and Construction

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 24	(1995) Installation of Private Fire Service Mains and Their Appurtenances

STATE OF COLORADO SPECIFICATIONS

Highway Specifications	Colorado Highway Specifications

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (1996 and Changes) U.S. Army Corps on Engineers Safety and Health Requirements Manual

1.2 OMAHA DISTRICT CORPS OF ENGINEERS STANDARD DETAILS AND CADD CELLS.

The Omaha Districts Civil and Environmental standard details and CADD cells are available on the Omaha District FTP site. See website identified in Section 01332 SUBMITTALS DURING DESIGN. These standards and cells are available for the Contractor's use. References to using exact details and drawings are found in this section. In those cases, the Contractor shall use the referenced standard drawings and/or details.

1.3 SURVEY

1.3.1 Field Survey.

The Contractor shall use actual field survey data in the preparation of his design drawings. The field survey to be used in the development of the design submittal is available to the Contractor on CD-ROM furnished with this solicitation. The information is in English units in a 3-d Autocad 2000 drawing file, xxxx.dwg. A digital terrain model file, which was created using Microstation Inroads software, is also being furnished. The survey data information was gathered by a topographical survey performed in January of 2002. Contours were gathered at 1 foot intervals. It is the Contractor's responsibility to gather any additional field data as required for the construction of the Upgrade Water Distribution System project.

1.3.2 Other Pertinent Data

Information provided by the engineering survey shall be field verified by the Contractor. Below grade utility data was obtained from "best-available" as-built mapping.

1.4 STAGING AND CONTRACTORS ACCESS

1.4.1 Staging Area

The location of the Contractor staging area shall be as shown on the Location Plan. Staging area shall be returned to its original condition upon completion of construction.

1.4.2 Contractors Access Route

The Contractor's access route to the project location shall be approximately as shown on the Location Plan.

1.5 DEMOLITION AND REMOVAL

1.5.1 Pavement Removal/Utility Protection

The Contractor shall avoid running utilities underneath buildings, streets, sidewalks, and parking lots where at all practicable. In cases where it is necessary for the utilities to cross existing streets, sidewalks, and parking lots the Contractor shall install the lines by boring and jacking methods. No open trenching will be allowed unless written permission is obtained and approved by the Air Force Academy. When open trench methods

are approved, streets, sidewalks, and parking lots shall be sawcut, removed and replaced as required to construct the new water system. Portions of walks and concrete pavements requiring removal shall be removed to the nearest contraction joint.

1.5.2 Utility Crossings

All existing utilities, including but not limited to storm drains, electrical, sewer, gas, water, and communication lines that are crossed during installation of the new water system shall remain in service during construction. If this is not possible, all outages shall be coordinated with the Contracting Officer's Representative. All underground utilities from field data and surveys, site investigations, and digging permit locates, shall be marked within and adjacent to areas of the work. All work areas shall be investigated with detection devices for cables and pipelines, to confirm locations, identify unknown utilities, and establish depths. All underground utilities potentially disturbed by the work shall be found by hand digging prior to mechanical trenching or excavating in the vicinity. The Government Representative shall be notified of detection activities 48 hours in advance. Detection devices shall be on-site at all times.

1.5.3 Vegetation Removals

When required, the trees, shrubs, and brush located in the fields along the path of the new water line, or in the area of the new water storage tank, shall be removed, and the soils cleared and grubbed. Clearing and grubbing shall be specified in UFGS Section 02230A CLEARING AND GRUBBING. See paragraphs below for removal and replacement of turf, irrigation system components, and landscape plants.

1.5.4 Removal Requirements

All materials shall be disposed of outside the limits of Government controlled lands. Disposals shall be in accordance with federal, state, and local regulations. The Contractor shall notify the Contracting Officer if any material to be disposed of is found to contain hazardous, toxic, biological or radiological substances. Rubbish and debris shall be removed from Government property daily to avoid accumulation at the project site. Demolition shall conform to UFGS Section 02220A DEMOLITION.

1.6 NEW CONSTRUCTION

1.6.1 Water System

The new water storage tank shall be located as shown on the attached drawings. The layout of the new water line shall parallel the existing water line. Existing and proposed water line location are also shown on the attached drawings. Design and layout of the new storage tank and water line shall be approved by the Government.

1.6.2 Streets, Roads, Walks and Parking Areas

Construction around streets, roads, walks and parking areas shall be as required to facilitate installation of the new water system. All streets, roads, walks, and parking areas disturbed during installation of the new water system shall be returned to their original condition and cross section following the completion of the new water lines.

1.6.3 Fenced Area/Service Road

The Contractor shall shall provide design documents of the tank area and service road for approval by the Government. An area, approximately 175-foot square, shall be fenced and surfaced with 6-inches of aggregate surface course. The fence lines shall be located at equal distances from the center of the tank. The aggregate surfacing shall extend approximately 5 foot beyond the fence line for maintenance purposes. A 20-foot wide, double-swing gate shall be provided for access to the area. See fence requirements in paragraph, "FENCING," below. A 20-foot wide service drive leading to the new gate shall be constructed off of the existing tank's dirt access road. The road shall be surfaced with 6-inches of aggregate surface course.

1.6.4 Turf

All turfed areas disturbed by construction and demolition activities, including those disturbed by Contractor's staging activities shall be seeded, except those areas that are currently sodded, which shall be re-established with sod. The requirements below shall be incorporated into UFGS Sections 02921A SEEDING and 02922A SODDING.

1.6.4.1 Soil Preparation

The disturbed site shall be tilled to a minimum depth of six inches, then harrowed or raked to produce a firm seed bed for planting. Some sites may not require tillage to provide a suitable seed bed, but this determination will only be made by Air Force Academy personnel. Sites without suitable surface soils (loam, sandy loam, clay loam, loamy sand) for plant growth shall be covered with 4-6 inches of weed-free topsoil that shall be incorporated by disking. Large rocks (greater than 2 inch diameter) and other debris shall be cleared from the site. Any necessary structures (e.g., water bars, turnouts) to reduce runoff and prevent water erosion shall be constructed prior to seeding.

1.6.4.2 Sod

Sod shall be state-certified as classified by applicable state laws. Sod shall be locally grown and be comprised of a mixture of improved varieties of Tall fescue. It shall be free of thatch, diseases, nematodes, soil-borne insects, weeds or undesirable plants, stones larger than 2 inches in any dimension, woody plant roots and other material detrimental to a healthy stand of turf. Dry moldy, yellow, irregularly shaped, torn or uneven end sod pieces shall be rejected. Sod shall be machine cut to a uniform thickness of 1 inch within a tolerance of 1/4 inch, excluding top growth and thatch. Measurement for thickness shall exclude top growth and thatch. Sod anchors shall be used as recommended by the sod supplier. All sodded areas shall be fertilized with no less than 200 pounds of 18-46-0 fertilizer per acre.

1.6.4.3 Seeding Varieties

Any modification of the specified seed mix shall be coordinated with the Contracting Officer and Natural Resources. All seed mixes shall use certified varieties, be free of noxious weeds, and have been tested for purity and germination within one year of the planting date. If possible, all seed should originate from sources not more than 250 miles south, 150 miles north, and 200 miles east or west of the U.S. Air Force Academy. Note that the pounds of Pure Live Seed (PLS) per acre specified below are for

drilled seeding only. If the seed is broadcast, the PLS/acre rate shall be doubled.

1. For dry upland areas with a wide variety of soil and slope conditions, the following seed mix shall be planted:

SPECIES	(Variety)	PLS RATE PER ACRE
Little Bluestem	(Pastura)	2.0
Blue Grama	(Hachita)	1.0
Side Oats Grama	(Vaughn)	2.0
Green Needlegrass	(Lodorm)	1.5
Sand Dropseed		0.5
Western Wheatgrass	(Barton)	3.5

2. If a rapid, temporary grass cover is required, perennial ryegrass may be added to the above seed mix, but the PLS seeding rate of the native grasses shall be unchanged:

SPECIES	(Variety)	PLS RATE PER ACRE
Little Bluestem	(Pastura)	2.0
Blue Grama	(Hachita)	1.0
Side Oats Grama	(Vaughn)	2.0
Green Needlegrass	(Lodorm)	1.5
Sand Dropseed		0.5
Western Wheatgrass	(Barton)	3.5
Perennial Ryegrass	(Tetraploid)	6.0

1.6.4.4 Seeding Dates

Seeding shall normally occur between October 15 and May 15. If planting after May 15, but before August 1, then supplemental irrigation of 0.75 inches/week shall be provided during the first growing season to promote seedling survival. No seeding shall occur between August 1 and October 14.

1.6.4.5 Seeding Methods

Drill seeding or broadcast seeding shall be used depending on the slope of the disturbed site and the size of the area.

1. Slopes less than 3:1 - Seed shall be drilled using a rangeland or grass drill with a small seed/legume box and an agitator box for fluffy or bulky seed. Seed rows shall be spaced 7-10 inches apart, and planted 0.5 to 0.75 inches deep. The drill shall have double disk furrow openers with depth bands and packer wheels. Seeding shall be accomplished by following the contour of the slope. The drill shall be calibrated each day or whenever changing seed mixes to ensure even seed distribution.

2. Slopes greater than 3:1 and areas less than 0.5 acre - Seed shall be broadcast by hand, mechanical spreader, or hydraulic equipment. Broadcast seeded areas shall be raked or harrowed to incorporate the seed into the soil at a depth not exceeding 0.75 inches. Seed shall not be mixed in a tank with hydromulch and broadcast.

1.6.4.6 Mulching

Weed-free native hay, weed-free straw, virgin wood fiber hydromulch, or erosion control blankets shall be used to promote germination and seedling establishment. Native hay, straw, or hydromulch shall be applied at 2000 pounds/acre on slopes less than 3:1. Native hay or straw shall be crimped into the soil to a depth of 3-4 inches, and shall protrude above the ground 3-4 inches. Hydromulch shall be applied using the recommended rate of an organic tackifier. Erosion control blankets shall be used whenever reclaiming slopes greater than 3:1 or along drainage areas where erosion is probable.

1.6.4.7 Weed Control

If weed competition becomes abundant on the seeded area, the site shall be mowed 1-2 times per year at a height just above the leaves or seedheads of the native vegetation.

1.6.4.8 Reseeding

If a partial or total seeding failure is apparent after the second growing season, unvegetated areas shall be reseeded in the same manner described above. Appropriate site preparation practices shall be used to create a suitable seedbed for planting, but any established native vegetation shall be undisturbed. Areas that erode and lose seed before establishment can occur shall be immediately reseeded during the next suitable planting period.

1.6.4.9 Turf Establishment

Contractor shall be responsible for establishing and maintaining a healthy stand of turf for a period of 90 days after turfing operations under this Contract are complete or until all work under this entire Contract has been completed and accepted, whichever period is longer. Contractor is to provide temporary lawn sprinklers for all seeded areas for a minimum of 60 days or until complete establishment of the seeded area.

1.6.5 Irrigation Sprinkler System

All sodded areas and landscape plantings that are currently lawn or plant irrigated shall continue to be irrigated during, and after, demolition and construction activities involved with the installation of the new water line. Irrigation lines that are damaged or put "out-of-service" shall be repaired or replaced within a period of five (5) days. When the 5-day repair is not practical, the plants and sod shall be watered by a temporary watering system supplying a sufficient amount of water to guarantee the survival of the plants and sod until such time that the irrigation system can be repaired. The irrigation systems shall be specified in UFGS Section 02811A UNDERGROUND SPRINKLER SYSTEMS. See "Seeding" paragraph, above for temporary lawn sprinkling requirements.

a. The irrigation system shall consist of standard, commercially-

available components. The components shall be products of manufacturers regularly engaged in the manufacture of such items.

b. The contractor shall field locate all the existing irrigation components that are in, or near, the path of the new water line. Existing valves and lawn and plant sprinkler heads shall be physically numbered. An Irrigation Replacement Plan shall be prepared showing the existing location of components and lines of the existing irrigation system and indicate the valves and heads by number. The Irrigation Replacement Plan will indicate the reinstallation of the valves and heads, and the replacement or reinstallation of other components of the system. Each component shall be installed, or reinstalled, in its current location. Valves and sprinkler heads shall be stored with their assigned number, during the irrigation system downtime required by construction activities, for reinstallation in their present location. Other components requiring removal may be reused when they are completely undamaged. Replacement items shall match the system currently in place.

1.6.6 Landscape Plants

Trees and shrubs in lawns and near buildings shall be protected. Layout of the new waterline shall avoid the drip line of existing trees. Removal of a tree or shrub located in a lawn area or near a building must be approved by the Contracting Officer's Representative. Lawn trees and shrubs that must be removed shall be replaced with a like species. Trees less than 4 inches in caliper shall be replaced with a balled and burlapped tree with a caliper of equal size. Trees with over a 4-inch caliper shall be replaced with a 4-inch caliper balled and burlapped tree. Shrubs shall be replaced with a 5-gallon potted shrub. Landscape mulch and fabric shall be replaced with matching products when they are disturbed by construction activities. Plants shall be specified in UFGS Section 02930A EXTERIOR PLANTING, and 02935 EXTERIOR PLANTING MAINTENANCE.

1.7 CONSTRUCTION AREA/SAFETY FENCING.

The boundaries of the construction site and staging area shall be identified with flagging or 4 foot tall orange plastic fencing and signage throughout the construction period. At a minimum, signage shall include the name of the Contractor and a phone number for emergencies. The signage shall conform with the base signage standards. The number of cones and or barriers shall be minimized to the number required by the appropriate governing safety standard. Upon completion of construction, all fence materials shall be disposed of outside the limits of Government-controlled lands.

1.8 FENCING

New FE-6 type chainlink security fence shall be used to enclose the water storage tank area. The fence and gate details shall be as shown on Omaha District standard drawings sheets C-2.6 and C-2.11. The fence shall have a standard single outrigger with three strands of barbed-wire on the outrigger. The fence fabric shall be 7 feet high with top rail and bottom tension wire. Chainlink fabric shall be either zinc or aluminum coated 9-gage wire woven in a 2 inch mesh. Tie wires shall be 9-gage galvanized steel wire. Chainlink fencing shall be specified in UFGS SECTION 02821A FENCING.

Where new utilities will be installed across existing fence lines using open trench methods, the existing fence shall be removed and replaced to

match the original. The Contractor shall use the appropriate Omaha District standard drawings. Fencing shall be specified in UFGS SECTION 02821AFENCING.

1.9 SIDEWALKS, CURB AND GUTTER, AND PAVEMENTS

1.9.1 Sidewalk and Curb and Gutter Removal and Replacement for Utilities

Where new utilities will be installed across existing sidewalks and curb and gutter using open trench methods, existing sidewalks and curb and gutter shall be removed and replaced to original thickness and cross section. Concrete sidewalks shall be a minimum of 4 inches thick. Transverse contraction joint spacing shall be as follows; 4 feet for walks 4 feet and 8 feet wide, 5 feet for walks 10 feet wide, 6 feet for walks 6 feet and 12 feet wide. Longitudinal contraction joints shall be constructed in sidewalk widths 8 feet and greater. Expansion joint spacing shall not exceed 40 feet.

1.9.2 Pavement Removal and Replacement for Utilities

Where new utilities will be installed across existing pavements using open trench methods, existing pavement shall be removed and replaced to original cross section and thickness. New bituminous and concrete pavement shall overlap at least 12 inches over existing base course.

1.9.3 Sidewalk, Curb and Gutter, and Pavement Specifications

Sidewalks and pavements shall be constructed in accordance with Colorado Highway Specifications where indicated. Unless otherwise specified, unit price clauses in shall be deleted. These requirements shall be incorporated into the Omaha District guide specification Section 02560 (COLORADO) PAVEMENTS FOR SMALL PROJECTS. An unedited copy of Section 02560 is included at the end of RFP, Attachment No. 4. The Contractor shall be responsible for editing this specification.

1.9.3.1 Concrete Sidewalks and Curbs and Gutters

Concrete sidewalks and curbs and gutters shall be specified in Omaha District guide specification Section 02560 (COLORADO) PAVEMENTS FOR SMALL PROJECTS. Expansion joints in concrete sidewalks shall be sealed with cold-applied sealant which is stone or grey in color.

1.9.3.2 Bituminous Wearing and Intermediate Courses

Bituminous wearing and intermediate courses shall conform to the requirements in the Omaha District guide specification Section 02560 (COLORADO) PAVEMENTS FOR SMALL PROJECTS. The maximum size aggregate used in bituminous concrete shall be approximately equal to, but always less than 1/2 the wearing course thickness and 2/3 the intermediate course thickness. The total thickness of bituminous concrete shall not be less than 2 inches. Where the total thickness of bituminous concrete requires more than one lift, an intermediate course may be specified beneath the wearing course.

Disintegrated granite shall not be used for production of any aggregate and the processed aggregate shall contain not more than 2.0 percent by weight of disintegrated granite particles in that portion of the total sample larger than the No. 4 sieve and not more than 4.0 percent in any individual sieve size listed in the required aggregate gradation for that portion

larger than the No. 4 sieve. A disintegrated granite particle is defined as a soft, crumbly particle of igneous rock having a visible crystalline grain size and consisting essentially of feldspar and quartz with lesser amounts of micas and/or amphibloles and pyroxenes. Generally, the rock particle will be stained by iron oxide and the feldspar grains will have a dull, highly fractured appearance. The individual mineral grains are so weakly bonded that the particle will crumble under moderate pressure. When tested by Test Method COE CRD-C 130 the particle would be classified as soft.

1.9.3.3 Bituminous Prime Coat

A bituminous prime coat shall be used at the option of the Contractor. Bituminous prime coat will be used when it is anticipated that the constructed base course may be damaged by rain, wind, or traffic prior to placement of the bituminous concrete pavement. Bituminous prime coat shall conform to the requirements found in Omaha District guide specification Section 02560 (COLORADO) PAVEMENTS FOR SMALL PROJECTS. Bituminous prime coat shall be: liquid asphalt conforming to the requirements of ASTM D 2027, designation MC-30 or MC-70, at the Contractor's option, except that only MC-30 shall be used on dense graded base courses if MC-70 does not adequately penetrate the base course material. In lie of cut-back asphalt, the Contractor may use cationic emulsified asphalt conforming to the requirements of ASTM D 2397, designation CSS-1 or CSS-1h.

1.9.3.4 Bituminous Tack Coat

Contact surfaces of previously constructed pavement, curbs, manholes, and other structures shall be sprayed with a thin coat of bituminous material conforming to the requirements found in Omaha District guide specification Section 02560 (COLORADO) PAVEMENTS FOR SMALL PROJECTS. Unless otherwise directed or required, bituminous material shall be emulsified asphalt conforming to the requirements of ASTM D 977, designation SS-1 or SS-1h or cationic emulsified asphalt conforming to the requirements of ASTM D 2397, designation CSS-1 or CSS-1h.

1.9.3.5 Aggregate Base Course

Aggregate base course shall conform to the requirements found in Omaha District guide specification Section 02560 (COLORADO) PAVEMENTS FOR SMALL PROJECTS and shall have a California Bearing Ratio (CBR) of at least 80.

1.9.3.6 Rigid Pavement Base and Subbase Courses

Rigid pavement base course shall be placed directly underneath concrete and subbase course shall be placed beneath the crushed aggregate base course. Rigid base and subbase shall serve as a separation and/or filter layer and shall conform to the requirements found in Omaha District guide specification Section 02560 (COLORADO) PAVEMENTS FOR SMALL PROJECTS and shall have a California Bearing Ratio (CBR) of at least 50. Aggregates for 50 CBR subbase course shall consist of crushed quarry stone, crushed gravel (2 or more fractured faces) or a combination crushed gravel with fines.

1.9.3.7 Concrete Pavement

Concrete pavement will be designed using a flexural strength of 650 PSI at 28 days age. Concrete shall conform to the requirements in the Omaha District guide specification Section 02560 (COLORADO) PAVEMENTS FOR SMALL PROJECTS.

1.9.3.8 Joint Sealing

Joints in concrete pavements may be sealed with field molded sealants. Field molded joint sealants shall be specified in the Omaha District guide specification Section 02560 (COLORADO) PAVEMENTS FOR SMALL PROJECTS.

1.9.3.9 Aggregate Surface Course

Aggregate surface course aggregate shall conform to the requirements in the Omaha District guide specification Section 02560 (COLORADO) PAVEMENTS FOR SMALL PROJECTS.

1.10 GRADING

1.10.1 General

Positive drainage shall be provided for all areas and existing drainage ways shall be utilized to the extent possible. The number of existing trees to be removed shall be kept to a minimum. No grading shall be done within drip lines of existing trees to be preserved. Grading shall be specified in Omaha District guide specification Section 02210 GRADING. An unedited version of Section 02210 has been included as an attachment. See end of the RFP, Attachment No. 4. The Contractor shall be responsible for editing the specification for the project.

1.10.2 Adjustment of Existing Structures

All manholes, valve boxes, or inlets of any nature within the project that do not conform to the new finish grade in either surfaced or unsurfaced areas shall be adjusted to the new finish grade. Where inlets, manholes, or valve boxes fall within a surfaced or unpaved roadway or parking, the existing frames and cover shall be removed and replaced with a heavy-duty frame and cover. The structure shall be adjusted as needed to fit the new conditions. All structures shall be of a type suitable for the intended use and shall conform to the requirements of the applicable section of these specifications.

1.10.3 Borrow and Waste

Borrow materials shall be obtained from sources outside the limits of Government-controlled land. The source of borrow material shall be the Contractor's responsibility. The Contractor shall obtain from the owners the right to procure material, shall pay all royalties and other charges involved, and shall bear all the expense of developing the sources, including rights-of-way for hauling. Surplus excavated material not required for fill shall be disposed of by the Contractor at his own expense and responsibility outside the limits of Government-controlled land.

1.11 WATER TANK DRAIN LINE

1.11.1 Headwall

A concrete headwall shall be provided at the end of the water tank drain line outfall. Protection from erosion and scouring at headwall outfall shall be designed and provided as required. The headwall shall be as shown on Omaha District standard drawing, sheet C-1.11.

1.12 TRAFFIC STRIPING

Traffic striping shall be provided where damage or removal occurs for water line installation. Parking areas shall be striped with non-reflectorized paint. Roads and streets shall be striped with reflectorized paint. Pavement markings shall be specified in UFGS Section 02763A PAVEMENT MARKINGS.

1.13 EROSION AND SEDIMENT CONTROL

The Contractor shall be responsible for selecting and implementing Best Management Practices (BMPs) to minimize pollutants in storm water discharges associated with construction activity at the construction site. All erosion and sediment measures and other protective measures shall be maintained by the Contractor in effective operating condition. All temporary structural practices shall be removed once the corresponding disturbed drainage area has been permanently stabilized. In the State of Colorado, EPA has authority for the National Pollutant Discharge Elimination System (NPDES) on Federal Facilities. If construction activities results in the disturbance of 5 acres of land or more, coverage under the EPA Storm Water General Permit For Construction Activities (Colorado Permit No. COR10*##F) is required. The Contractor and the Omaha District Corps of Engineers shall be co-permittees. The Contractor shall be responsible for complying with the requirements in UFGS Section 01355 ENVIRONMENTAL PROTECTION and with the requirements of Omaha District guide specifications Section 01565 NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES. The Contractor shall be responsible for editing and applying the requirements of Omaha District guide specifications Section 01356 STORM WATER POLLUTION PREVENTION MEASURES. An unedited guide specification Section 01356 have been included as attachment. See end of the RFP, Attachment No. 4. Guide specification Section 01565 has been included as attachment. See end of the RFP, Attachment No. 4. If coverage under the NPDES Permit is not required, Specification Section 01565 shall not be applicable.

1.13.1 Temporary Construction Entrance

Tracking of mud from the construction site onto adjacent roads and streets shall be kept to a minimum. A temporary stabilized stone pad shall be constructed at points where vehicular traffic will be leaving the construction site and moving directly onto a paved road or street. It shall extend the full width of the vehicular ingress and egress area and have a minimum length of 70 feet. The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto adjacent roads or streets. If conditions on the site are such that the majority of the mud is not removed by the vehicles traveling over the stone, the the tires of the vehicles shall be washed before entering the road or street. Any mud which is tracked onto roads or streets shall be removed at least once daily.

1.13.2 Seeding and Sodding

All areas disturbed by construction and not otherwise surfaced shall be seeded or sodded.

1.13.3 Erosion Control Blanket

Bottoms and side slopes of ditches and any other disturbed slopes 1V on 3H or steeper shall be covered with an erosion control blanket immediately after seeding.

1.13.4 Silt Fence

Silt fencing shall be installed below disturbed areas where erosion would occur in the form of sheet and rill erosion. The size of the drainage area above the silt fence shall not exceed one fourth of an acre per 100 feet of silt fence length. Silt fencing may be installed across ditches only when the maximum contributing drainage area is not greater than 1 acre. Silt fence constructed across a ditch shall have wire support and shall be of sufficient length to eliminate end flow.

1.13.5 Straw Bale Barrier

Straw bale barriers may not be installed across ditches.

1.13.6 Outlet Protection

Preformed rip rap lined scour holes or other suitable measures shall be installed at outlets of culverts and storm drains as needed to prevent erosion.

1.13.7 Storm Drain Inlet Protection

Storm drain inlet protection shall be installed around any new or existing storm drain inlets that will become operational before permanent stabilization of the corresponding disturbed drainage area has occurred. Storm drain inlet protection shall include either a sediment filter or an excavated area around the storm drain inlet.

1.13.8 Rock Check Dam

Rock check dams may be installed in ditches which drain 2 to 10 acres. The allowable drainage area will be dependent on the gradation of the rock used to construct the check dam. The maximum height of the dam shall be 3 feet. The center of the dam shall be at least 6 inches lower than the outer edges. For added stability, the base of the check dam may be keyed into the soil approximately 6 inches. The maximum spacing between the dams should be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.

1.13.9 Temporary Sediment Trap

Temporary sediment traps may be constructed below disturbed areas where the total drainage area is less than 3 acres.

1.13.10 Temporary Sediment Basin

Temporary sediment basins may be constructed below disturbed areas where the total drainage area is equal to or greater than 3 acres.

1.13.11 Other Controls

Other controls such as diversion dikes, level spreaders, temporary seeding, etc. may be used if deemed necessary by the Contractor.

1.14 UTILITIES

The Contractor shall avoid running utilities underneath buildings, streets, sidewalks, and parking lots where at all practicable. In cases where it is necessary for the utilities to cross existing streets, sidewalks, and

parking lots the Contractor shall install the lines by boring and jacking methods or horizontal drilling methods. No open trenching will be allowed unless written permission is obtained and approved by the Air Force Academy.

1.14.1 CATHODIC PROTECTION

Corrosion protection shall be provided for all buried gray or ductile-iron piping, fittings, valves, and other water line appurtenances, regardless of pipe material. Corrosion protection shall consist of an anode type cathodic protection system. See Section 01007 Electrical Requirements.

1.14.2 WATERLINES

a. All waterlines shall comply with applicable Local, State and Federal standards. Water distribution systems and service lines shall be designed and constructed in accordance with TI 814-1, TI 814-3, applicable U.S. Army Corps of Engineers Guide Specifications requirements. The Contractor shall be responsible for protection of existing waterlines. If any potable waterlines are damaged during construction, the Contractor must immediately notify the Base Civil Engineering (CE) Office. The Contractor shall disinfect all new water lines and any remaining lines which do not remain fully pressurized during construction or connection. The Contractor shall notify the Base CE Office prior to disinfection of the water lines. The disinfection shall be in accordance with the American Water Works Association Standard AWWA C651,(1992), and shall not be considered complete until two consecutive days of bacteriological samples show no contamination. All bacteriological, lead and copper tests shall be performed by Environmental Protections Agency (EPA) certified laboratories. Copies of results of the analyses shall be forwarded to the Contractor upon receipt.

b. The Contractor shall design and provide all facilities required to deliver water to the project. Service connections or extensions to the existing water distribution system shall be made without interruption to service. The new pipe shall be limited to cement lined ductile iron for pipe materials. The ductile iron pipe shall be provided with .2 mm polyethylene encasement for corrosion protection. Option 1 is to have the polyethylene encasement replaced with a 1 mil thick bonded coating system for ductile iron pipe, such as coal tar enamel. For design of the waterlines, use maximum Hazen-Williams "C" value of 120 for ductile iron pipe materials.

1.14.2.1 Water Supply, Distribution and Service Lines

a. Water Line Requirements. A water supply line shall be included from the existing water line stub out connection to the new water storage tank (Reservoir 1). Water distribution lines shall be provided from the new Water storage tank to the Cadet Area. All existing service connections to the existing 12 inch line shall be connected to the new 16 inch water line.

b. Service Connections. Service connections shall be made via corporation stops, appropriate gooseneck connections, or tapping sleeves and valves.

c. Domestic Service Stop Valve. Building shall be provided with separate

service and stop valves in areas readily accessible to maintenance and emergency personnel. Stop valves located in walks are prohibited.

d. Altitude Valve & Box. An altitude valve and valve pit shall be provided and located in the 16-inch water supply line to the water storage tank (Reservoir 1) as shown on the drawings. The altitude valve pit shall provided with all the required check valves, motors, pressure gauges, control panel, as required.

1.14.2.2 Dedicated Fire Water Service Lines

a. Fire Flow Data. For determination and documentation of fire protection, the Contractor shall conduct and provide all fire hydrant flow tests. Data to be included with the flow tests are static pressures, residual pressures, flowrates, date and time tests were conducted, and name of personnel conducting the fire hydrant flow tests. The static pressures, residual pressures, flowrates, test hydrant and flow hydrants shall be shown on the appropriate contract drawings. Fire hydrant flow tests required for fire protection design shall be made in accordance with the procedures specified in AWWA M17, 1989 (Installation, Field Testing, and Maintenance of Fire Hydrants).

b. Fire Hydrants. The Contractor shall be required to remove all fire hydrants that are connected to the existing 12 inch waterline being removed from service and in the same location install new fire hydrants connected to the new 16 inch line. All new fire hydrants shall be Mueller brand or approved equal.

1.14.3 WATER STORAGE TANK

A new water storage shall be provided near the existing water storage tank as shown on the drawings. The new water storage tank shall be designed for a capacity of 800,000 gallons. Tank elevations are shown on the tank drawing. The new water storage tank will be concrete and buried. A concept layout based on the existing 800,000 gal reservoir is shown on drawing S-1 to be used as a General Design Guidance for design of the new tank. The Contractor may propose an alternative concept for approval. The tank will include a chlorine feed from the existing chlorine building facility on top of reservoir 1. The design of the water storage tank shall conform to State of Colorado, Colorado Department of Public Health and Environment, Design Criteria for Potable Water Systems.

1.14.4 CHLORINE FEED EQUIPMENT

The existing centrifugal pump in the altitude valve vault of Reservoir 1 shall be removed and replaced with an eight gpm pump. Chlorine feed equipment will be added to the existing chlorine building of Reservoir 1 to provide a desirable chlorine residual at the new water storage tank as required by Colorado State Drinking Water Standards. The new chlorination equipment shall consist of a PPG Calcium Hypochlorite Engineered System, Series 3000 equipment or approved equal. The chlorinator equipment shall be compatible with PPG Accu-Tab 3-inch calcium hypochlorite tablets. The chlorination system layout shall be similar to the existing chlorination system at the existing water storage tank. The chlorination equipment shall be housed in the existing chlorine building above Reservoir 1. The chlorination system shall be provided with a portable chlorinator analyzer/detector kit and shall operate manually. The chlorinator feed

equipment shall be designed to release a controlled amount of chlorine into the water flow. The chlorinated water is injected at the top of the tank. The Chlorination System shall be designed to meet the requirements of the State of Colorado, Colorado Department of Public Health and Environment, Design Criteria for Potable Water Systems.

1.15 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS.

1.15.1 Trenches

Jacking and boring or horizontal drilling shall be required when an underground utility line crosses any street, sidewalk, or parking lot. Sewer and water lines, mains or laterals, shall be placed in separate trenches. The separate trenches shall maintain a minimum horizontal separation of 3 meters and the bottom of the water line shall be at least 0.5 meters above the top of the sewer. Sewers crossing above potable water lines shall maintain a vertical separation of 18 inches and must be constructed of suitable pressure pipe or fully encased in concrete for a distance of 3 meters on each side of the crossing.

Open trenches from the water storage tanks to Academy Drive, along Academy Drive, Interior Drive, and Faculty Drive shall not exceed 150 meters during the weekdays or 10 meters during the weekends. In other areas (cadet areas) the open trenches shall not exceed 50 feet during the week and 10 feet during the weekend. All open trenches and pits shall be fenced overnight and during weekends and at all times in the cadet area. On weekends, holidays and non-work days, twice daily inspections of the trenches and fencing shall be performed by the Contractor to check condition and made repairs. A trenching plan shall be developed and submitted with the 100% design showing the trenching and pipe laying and test schedule. All surface repairs shall be made within 10 days of pipe installation.

The trench shall be excavated as recommended by the manufacturer of the pipe to be installed. Bedding and initial backfill material shall be in accordance with the manufacturers recommendations. Where no manufacturer's installation manual is available, trench walls shall be excavated to a stable angle of repose as required to properly complete the work. Trench excavations shall adhere to requirements prescribed in EM 385-1-1, September 1996, Safety and Health Requirements Manual. Special attention shall be given to slopes which may be adversely affected by weather or moisture content.

PART 2 NOT USED

PART 3 NOT USED

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SECTION 01005

STRUCTURAL REQUIREMENTS

PART 1 STRUCTURAL

1.1 PROJECT DESCRIPTION AND REQUIREMENTS

Structures shall be designed and configured by the Contractor in accordance with the criteria and other requirements stated herein. The water reservoir plans and details provided with this solicitation are only a preliminary concept showing the approximate construction of the existing reservoir. Alternative types of construction, such as post-tensioned concrete, are acceptable; however steel tanks shall not be allowed. The foundation design shall be based on the results of the Final Subgrade Investigation performed by the Contractor after contract award.

1.2 DESIGN CRITERIA

The design publications listed below shall be used as sources of criteria for structural design.

1.2.1 American Society of Civil Engineers (ASCE) Publication

ASCE 7-98 Minimum Design Loads for Buildings and Other Structures

1.2.2 American Concrete Institute Publication

ACI 350R-89 Environmental Engineering Concrete Structures.

ACI 318-95 Building Code Requirements for Structural Concrete and Commentary

1.2.3 American Institute of Steel Construction Publication

Specification for Structural Steel Buildings - Allowable

Stress Design, Plastic Design (ASD) (June 1, 1989)

1.2.4 Portland Cement Association (PCA)

Circular Concrete Tanks Without Prestressing

1.2.5 American Water Works Association

AWWA D110 Wire- and Strand- Wound, Circular Prestressed

Concrete Water Tanks (1995; Addendum 1996)

1.2.6 Colorado Department of Public Health

Design Criteria for Potable Water Systems

1.2.7 U.S. Army Corps of Engineers

TI 809-04 Seismic Design for Buildings

1.3 STRUCTURAL LOADING CRITERIA

Structural loading criteria shall be developed using the criteria sources and following the procedures indicated below. Floatation of underground structures subject to groundwater shall be addressed.

1.3.1 Dead Loads

Minimum design dead loads for common building materials shall be obtained from ASCE 7. Equipment loads and loads for materials not listed in that publication shall be obtained from other recognized sources.

1.3.2 Earth Loads

Structures shall be designed to carry earth loads on the walls and roof as applicable. Soil densities and pressure coefficients shall be derived from the information provided by the Final soils report and other recognized sources. Dry and saturated soil conditions shall be considered in the design. Load cases shall consider the presence and absence of internal and external hydrostatic pressure as applicable.

1.3.3 Vehicle Loads

The reservoir's roof and supporting structure shall be designed to carry vehicle loads which may be imposed both during and after construction. The greater of construction vehicle load and an HS-20 load shall be the minimum design load. Load cases shall include vehicle load alone and vehicle load plus soil load. Analysis may consider concentrated wheel load to be distributed over greater areas as the depth of cover is increased.

1.4 STRUCTURAL MATERIALS

Materials for structural elements shall be as indicated herein. Where materials are not indicated, selection shall be at the Contractor's discretion. Concrete additives, coatings and sealants exposed to stored water shall be approved for use in potable water systems by the National Sanitation Foundation (NSF). Materials and construction shall also be in accordance with all applicable State requirements, including Colorado Department of Public Health Design Criteria for Potable Water Systems. The storage tank shall be constructed of precast or cast-in-place concrete with tensioned or non-tensioned reinforcement. Ladders shall be aluminum.

1.4.1 Structural Steel

1.4.1.1 Design

Structural steel shall be designed in accordance with AISC Specification

for Structural Steel Buildings - ASD. All structural steel members shall be designed by the structural engineer to support all applicable loads. Structural drawings shall clearly show all structural members, connections and their locations.

1.4.1.2 Connections

Types of connections shall be consistent with the design assumptions for the basic type of steel construction used. Connections shall be designed and detailed to provide adequate capacities for the applied forces and moments. Connection design shall be the responsibility of the structural engineer and shall not be delegated to the steel fabricator.

1.4.2 Reinforced Concrete

1.4.2.1 Design

Reinforced concrete design shall be in accordance with ACI 350 and ACI 318, and related current ACI publications which are applicable to the design and with PCA publication Circular Concrete Tanks Without Prestressing. All concrete elements shall be reinforced with temperature and shrinkage reinforcement as a minimum. Non-tensioned steel reinforcement shall be as recommended by ACI. Non-corrosive steel, plastic or concrete support blocks shall be used for securing and positioning reinforcing in the reservoir structure.

1.4.2.2 Concrete Strength

The required 28-day compressive strength of the concrete shall be left to the Contractor's discretion, except that 4000 psi shall be a minimum. For concrete that is to be installed with exterior exposure, air-entrainment, producing a total air content in the concrete between 5 and 7 percent by volume, shall be required.

1.4.2.3 Reinforcing Bar Usage Limitations

Grade 60 bars shall be used for concrete design.

1.4.2.4 Concrete Joints

Control joints and contraction joints shall be provided and located to reduce concrete cracking to a minimum. Use of construction joints shall be minimized but shall be as necessary to allow placement of concrete in manageable volumes, will minimize potential defects and minimizes accumulation of shrinkage stresses. All exposed concrete joints shall be sealed with appropriate joint sealants. Joints in the tank and valve vaults which are required to be water-tight, such as construction joints in slabs and walls and joints between members such as tank walls and foundations, shall incorporate waterstops and hydrophillic (expansive) seals as appropriate.

1.4.3 Precast and Prestressed Concrete

1.4.3.1 Design

The design shall conform with the requirements of ACI 318, Chp 16 - Precast Concrete and with AWWA D110 Wire- and Strand- Wound, Circular Prestressed Concrete Water Tanks as applicable. The precast units shall be designed for all applicable loads indicated in paragraph STRUCTURAL LOADING CRITERIA

and the design shall consider all loading and restraint conditions from initial fabrication to completion of the structure. Flexural members shall be designed to support full live load acting in combination with full dead load, plus concentrated loads from any mechanical equipment actually furnished. The effects of initial and long-time deflections shall be considered in the design of precast members.

1.4.3.2 Precast Concrete Strengths

The required 28-day compressive strength of precast concrete shall be left to the Contractor's discretion, except that 5000 psi shall be a minimum. For any precast units that are to be installed with exterior exposure, air-entrained concrete, with a total air content between 5 and 7 percent by volume, shall be required.

1.5 FOUNDATION SYSTEM AND DESIGN

Design of foundation components shall be the responsibility of the Contractor. The components of the foundation system shall be constructed of reinforced concrete. All parts of the foundation system shall be designed to keep dead load footing pressures relatively uniform, in order to minimize differential settlements. See RFP drawings for soil boring information and Attachment No. 2 GEOTECHNICAL INFORMATION for supplemental information. Attachment No. 2 includes Preliminary Soils and Foundation Information, Soils Information Report Addendum and Geotechnical Analysis Criteria. The Contractor shall be responsible for performing final subsurface investigations to determine actual foundation criteria for use in design. Design and construction of the water reservoir and other structures shall be as appropriate for the actual subsurface conditions.

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SECTION 01007

ELECTRICAL REQUIREMENTS

PART 1 ELECTRICAL DESCRIPTIONS AND NARRATIVES

1.1 GENERAL

Upgrade Water Distribution system includes a buried water storage tank, water distribution piping, electrical power, controls and cathodic protection.

1.1.1 References

Publications, codes, specifications and standards shall be used as the basic for the project design and shall include, but not be limited to the following:

IEEE C2	National Electrical Safety Code, 1997
NFPA 70	National Electrical Code (NEC), 2002
NFPA 101	Safety to Life from Fire in Buildings and Structures, 1997
NACE RP0169	Control of External Corrosion on Underground or Submerged Metallic Piping Systems, 1992
DISTRIBUTION STANDARDS	Corps of Engineers Standard Electrical Distribution Details. http://cadlib.wes.army.mil CADD Details Library, Electrical Details Electrical Service and Distribution

1.1.2 STANDARD PRODUCTS

Material and equipment shall be a standard product of a manufacturer regularly engaged in the manufacture of the product and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening. The label or listing of the Underwriters Laboratories, Inc., will be accepted as evidence that the materials or equipment conform to the applicable standards of that agency. In lieu of this label or listing, a statement from a nationally recognized, adequately equipped testing agency indicating that the items have been tested in accordance with required procedures and that the materials and equipment comply with all contract requirements will be accepted.

1.1.3 Seismic Protection

Seismic Protection for electrical equipment shall be designed and installed in accordance with the requirements of Seismic Protection for Miscellaneous Equipment Specification SECTION 13080 and Seismic Protection for Electrical Equipment Specification SECTION 16070A.

1.2 COORDINATION OF ELECTRICAL CRITERIA

All electrical criteria provide in this section shall be coordinated with the architectural section, mechanical section, fire protection section, structural section, interior design section, civil and site section, and all other sections not mentioned here as well as environmental requirements for the operation of the water system. The number and location of all electrical equipment indicated in the electrical requirements are approximate. Contractor design shall meet the intent of the electrical requirements provided in this section. Contractor shall coordinate the final locations of all electrical equipment with the BASE USERS to be provided by the Contracting Officer in the Field after the award of the RFP.

1.3 EXTERIOR UNDERGROUND SECONDARY ELECTRICAL DISTRIBUTION REQUIREMENTS.

Exterior secondary electrical distribution system to the existing Chlorine Feed Building is 120/240V, 1-phase, 3-wire underground feeder in conduit to a Main Distribution Panel (MDP)/Panelboard located in the building. The existing transformer is located southeast of the existing potable reservoir tank. Design of the exterior secondary electrical system shall be in accordance with Electrical Distribution System, Underground - SECTION 16375A and the requirements of this section. For bidding purposes, it shall be assumed that the existing transformer has enough capacity for any new loads.

1.3.1 Underground Service Entrance/Feeder/Branch Circuits.

Conductors, branch and feeder circuits shall be single conductor conductors, Type THW or THWN in accordance with NFPA 70. Service entrance conductors and underground feeder/branch circuits shall be copper conductors with insulating grounding conductor in GRS conduit. Aluminum conductors and direct buried cables are NOT acceptable. Feeder shall have a voltage drop of 2%.

1.3.1.1 Conduits

Conduits shall be rigid galvanized steel (RGS) within 1524mm (5')of the building foundation and schedule 80 PVC elsewhere. Conduits shall be non-encased direct-burial for low voltage circuits. Top of conduit shall be 914.4mm (36") below finished grade.

1.4 NOT USED

1.5 EXTERIOR COMMUNICATION DISTRIBUTION SYSTEM

This design shall be in accordance with the Electrical Distribution System, Underground Specification SECTION 16375A and the requirements of this section.

1.5.1 EMCS Distribution.

A handhole located south east of the existing potable reservoir tank has an existing Siemens STAEFA systems control panel with points which can be used for control and monitoring in the new potable reservoir. Provide a 53mm (2-inch) conduit from the handhole to the existing Chlorine Feed building, if additional cables cannot be pulled in the existing conduit. For bidding purposes, it shall be assumed that a new conduit is needed. Cable(s) shall be copper, rated for exterior use in conduit. Provide number of cables and conductors needed to monitor/control required points.

1.5.2 Water Level Reporting

The Colorado Springs Water District will monitor the water level. Coordinate the installation and equipment requirements with the Water District. The existing potable reservoir water level is monitored through a microwave antenna located on the east site of the existing tank mound. All power, empty conduit, conduit and conductors, etc. required by the Water District to monitor the new tank shall be provided.

1.6 CATHODIC PROTECTION SYSTEM

A sacrificial anode cathodic protection system shall be provided for all underground metallic lines, fittings, valves, fire hydrants and tanks. The basic contract has the water distribution piping with a disbonded coating (baggie) system and the option has the water distribution with a bonded coating system. Under the basic contract, any metallic pipes, fittings, elbows, valves, fire hydrants and tanks which are not inside the disbonded coating shall be provided with a coating system. The systems shall be designed and installed by a registered NACE Specialist or Corrosion Engineer in accordance with NACE RP 169 Standards. The requirements for the engineer are given in 13110A. The cathodic protection system for the new water distribution system shall be a distributed, sacrificial anode system using magnesium anodes. The cathodic protection system shall be designed for a life of 25 years, use two bonds across each joint, use a current density of 1.5 mA/sq-ft), and use 10% for the amount of bare metal at end of the life. The typical soil resistivity in the area is between 2,000 ohm-cm and 20,000 ohm-cm. Contractor shall verify the soil resistivity by taking a minimum of three 4-pin readings along the route of the water piping. The reading shall be taken for the depth of the pipe and shall be averaged. The contractor shall provide insulating flanges at connections to existing systems. The existing water distribution system has an impressed current system. A test station shall be provided at all insulating flanges with two leads to each side of the flange. Criteria for determining the adequacy of protection shall be in accordance with NACE RP-01-69 and shall be selected by the corrosion engineer as applicable. A conductor color coding system shall be used: black for anode, red for main structure, blue for reference cell, and white for a second structure. Design shall be in accordance with Cathodic Protection System, (Sacrificial Anode) - Specification SECTION 13110A and the requirements of this section. At least one test station shall be provided on each valve, fire hydrant and metallic pipe.

1.6.1 Test Stations

The sacrificial anodes shall be connected to the structure through test stations. Provide other test stations as required in SECTION 13110A.

1.6.2 Reference Cells

Permanent reference cells shall be located a minimum of every 152 meters (500 feet).

1.7 UNDERGROUND CABLE MARKINGS

A color-coded plastic warning tape shall be place at least 101.6mm (4") wide within the trench above all buried utility lines. RED shall be supplied for the buried electrical lines and ORANGE shall be supplied for all the buried communication lines.

1.8 INTERIOR ELECTRICAL DISTRIBUTION SYSTEM

The existing interior secondary distribution voltage within the building is 120/240, 1-phase, 3-wire. New conductors shall be copper. Aluminum is not acceptable. Design shall be in accordance with Electrical Work, Interior - Specification SECTION 16415A and the requirements of this section.

1.8.1 Service Equipment

Service disconnect means shall be of the molded-case circuit breaker type.

1.8.1.1 Main Distribution Panel (MDP)/Panelboard

The existing panelboard in the existing Chlorine Building the following breakers:

2P-50 amp (used for existing pump)
Four 1P-20 amp breaker serving receptacles, lights, chlorine meter.
Two single pole spaces.

Verify loading on the panel. If the panel and associated circuitry is adequate for the new load(s), the contractor may use the panel. Contractor is allowed to add breakers and shift loads, but everything shall function when done. The contractor shall assume a new 2-pole breaker is required, which shall require one exisitng 1P breaker and its load to be moved. Any power outage shall be coordinated 48 hours in advance and receive approval. If the panel is not adequate to handle the additional load(s), then the panel shall be replaced. The Contracting Officer shall be contacted prior to replacement of the panel for written approval. The main new load is the new centrifugal pump, which replaces a smaller centrifugal pump.

Main Distribution Panel (MDP)/panelboard shall be in a metal-enclosure. Service disconnect circuit breaker shall be of the insulated-case circuit breaker type. Branch circuit breakers shall be molded-case type circuit breakers. Enclosure shall be ventilated general purpose type wall mounted type. Busses for the Main Distribution Panel (MDP) and all panelboards shall be copper only. Aluminium shall not be allowed. Each phase, neutral and equipment grounding bus shall be clearly shown on the drawings. Short circuit rating of all busses shall be clearly indicated on the drawings.

1.8.2 Panelboards

If a new panelboard if required, the lighting and appliance branch-circuit panelboards shall be of the circuit breaker conforming to NEMA AB-1 and UL 489 and shall be located in the existing Chlorine Feed Building.

a. Panelboard shall not exceed 1981.2mm (78")in height from the finished floor.

b. All panelboards shall have a minimum of 25 percent spare capacity for all loads. Panelboards shall have a minimum of 25 percent spare circuit breakers. Spare circuit breakers shall be redundant of the type of circuit breaker being provided in the panelboard.

c. Panelboard busses shall be copper only. Aluminum busses are not acceptable.

1.8.3 Motors

Motors shall be of sufficient size for the duty to be performed and shall not exceed the full-loading rating when the driven equipment is operating at specified capacity under the most severe conditions encountered.

a. All motors shall have open frames and continuous-duty classification and be based on a 40 degree C ambient temperature reference.

b. All motors shall be derated for altitude.

c. All permanently wired polyphase motors of 747 watts or more shall meet the minimum full-load efficiencies as indicated in the Electrical Work, Interior Specification Section 16415a.

d. Remove the existing 4 gpm centrifugal pump located in the existing altitude valve pit and replace it with a new 8 gpm centrifugal pump. Existing electrical circuit can be reused if determined of adequate size.

1.8.4 General Purpose Receptacles

Duplex receptacles for general purpose applications shall be 20 amp, 125 volt, 2-pole, 3-wire grounding type. A maximum of five duplex receptacles may be connected to a receptacle circuit. Receptacle circuits shall not supply lighting loads.

1.8.5 Special Receptacles

Ground Fault Circuit Interrupter (GFCI) receptacles shall be provided in all wet locations. Weatherproof receptacles for exterior use, shall be mounted in a box with a gasketed, weatherproof, cast-metal cover plate and gasketed cap over each receptacle opening with (GFCI). .

1.8.6 Other Loads

Contractor shall provide electrical power to the following loads either by receptacle or direct wired as applicable:

Water circulation pump. The water circulation pump is to be manually controlled on/off. The typical operation is to have the pump operate continuously.

1.8.7 Architectural/Mechanical/Environmental Connections

Contractor shall provide branch circuits, disconnect switches, magnetic starters, and all other related electrical equipment and material for all architectural, mechanical equipment and environmental equipment to be installed in the project.

1.9 NOT USED

1.10 INTERIOR COMMUNICATION SYSTEM

1.10.1 General

Communication lines are required for remote switching between the altitude valve and the motorized valve and for monitoring water level from the Base Civil Engineering Office. The existing water levels are monitored with a Druck PTX 1225 pressure transmitter rated 0-10 psig. Provide a similar pressure transmitter for the new potable reservoir tank.

1.10.2 Communication Conductors/Conduits

Communication and signal cable type shall be coordinated with the manufacturer of the components and as recommended by the base. All cables shall be copper.

1.11 COMMUNICATION GROUNDING

All exposed non-current carrying metallic parts of the communication equipment, cable sheaths, cable spices and terminals shall be grounded.

1.12 EMCS (ENERGY MONITORING AND CONTROL SYSTEM)

The base control system is connected to an existing EMCS system. Provide 4 pair #24 AWG telephone conductors in 27mm conduit from each EMCS OR DDC panel to the telephone patch panels. Provide power as required for all EMCS or DDC components requiring power.

1.13 WIRING METHODS

Wiring shall conform to the latest edition of NFPA 70, Electrical Work, Interior Specifications SECTION 16415A and the requirements of this section.

1.13.1 Power Conductors

Conductors shall be copper only. Aluminum conductors are not allowed. Minimum conductor size shall be #12 A.W.G. Conductors shall be installed in conduits. Power and lighting conductors shall be 600 volt, Type THHN (in dry locations), and THW or THWN (in wet locations). Conductors no. 8 AWG and smaller shall be solid. Conductors no. 6 AWG and larger shall be stranded. Cabling systems such as Mineral-Insulated cables, metallic armored cables and nonmetallic-sheathed cables shall not be allowed on this project.

1.13.2 Communication Conductors

Communication conductors shall be provided per paragraph "INTERIOR ELECTRICAL DISTRIBUTION SYSTEM" of this requirement and Premises Distribution System, Specification Section 16710A.

1.13.3 Conduits

Wiring shall consist of insulated conductors installed in rigid zinc-coated steel conduit or electrical metallic tubing. Plastic conduit is allowed only underground or under the floor slab. Raceways shall be concealed within finished walls, ceilings, and floors.

1.14 GROUNDING SYSTEM

The grounding system shall be designed in accordance with NEC Article 250 and the following criteria. Bonding shall be by exothermic welding or the brazing of a copper wire between components. Design shall be in accordance with Electrical Work, Interior Specification - SECTION 16415A and this section.

1.14.1 Grounding Conductors

A green equipment grounding conductor, sized in accordance with NFPA 70

shall be provided, regardless of the type of conduit. Equipment grounding bars shall be provided in all panelboards. The equipment grounding conductors shall be carried back to the service entrance grounding connection or separately derived grounding connection. Grounding conductors shall be provided in all branch including lighting circuits and feeders circuits.

1.14.2 Earth Electrode System

The maximum resistance measure in accordance with IEEE Std 81 of a driven ground rod shall not exceed 25 ohms under normally dry conditions. Ground rods shall be 19.05mm (3/4") x 3048mm (10') copper clad ground rods. The soil conditions are dry and warrant the need for additional ground rods. If a ground rod is required, the contractor shall assume that two additional ground rods spaced 1.5 m (5 ft) apart are required.

1.15 TESTING

Contractor shall provide all testing required by all specifications provided to the Contractor. Testing shall include low voltage conductors, high voltage conductors and communication conductors and all other mandatory testing required by the specifications provided with this section.

1.16 TECHNICAL SPECIFICATIONS

Government technical guide specifications (available as indicated in Section 01332, SUBMITTALS DURING DESIGN) shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product and installation requirements for the project. The provided specifications define the minimum requirements for items of equipment, materials, installation, training, operating and maintenance instructions, O&M manuals and testing that shall be provided for the project. Where items of equipment, materials, installation, training, operating and maintenance instruction, O&M manuals or testing requirements are not covered in the provided specifications, special sections within each guide specification shall be prepared to cover those subjects. Specific items of equipment identified in the provided specifications but not required for the project shall be edited out. Government approval is required for any specification addition or deletion. As a minimum the following specifications shall be provided:

a. ELECTRICAL DISTRIBUTION SYSTEM, UNDERGROUND - SECTION 16375A
b. CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE) - SECTION 13110A
c. SEISMIC PROECTION FOR MISCELLANEOUS EQUIPMENT - SECTION 13080.
d. SEISMIC PROTECTION FOR ELECTRICAL EQUIPMENT - SECTION 16070A.
e. ELECTRICAL WORK, INTERIOR - SECTION 16415A
f. PREMISES DISTRIBUTION SYSTEM - SECTION 16710A

PART 2 NOT USED

PART 3 NOT USED

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SECTION 01040

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SECTION 01040

AS-BUILT DRAWINGS
5/00; Rev 11/01

PART 1 GENERAL

1.1 DEFINITIONS

The definitions listed below form a part of this specification.

1.1.1 Construction Drawings

Final design drawings accepted by the Government for construction of the project.

1.1.2 Red-Line Drawings

Construction drawings marked-up to show actual work performed to include necessary sketches, modification drawings, shop drawings and notes. Green ink is used to indicate work deleted from the contract. Red ink is used for additions and deviations from the contract.

1.1.3 As-Built Drawings

Professional finished drawings and electronic CADD files developed from the construction drawings that include all of the information from the redline drawings and suitable for half-size reproduction.

1.1.4 Not Used

1.1.5 Black-Line Drawings

Paper drawings reproduced from reproducible drawings or electronic CADD files and suitable for microfilming.

1.1.6 Full-Size Drawings

28 inches x 40 inches nominal size drawings with all details visually readable.

1.1.7 Half-Size Drawings

14 inches x 20 inches nominal size drawings with all details visually readable.

1.1.8 Modification Circle

A circle with a horizontal line through the center. The top half will contain the letter "P" with the bottom half containing the Modification number. The lettering standard will be 120/6 WRICO or similar.

1.1.9 Electronic CADD Files

Electronic CADD files are files saved on CD-ROM in accordance with appropriate CADD standard. The CADD standard will include level on/off

status, special characters, line wieghts, font, and size requirements.

1.2 GENERAL REQUIREMENTS

The work includes creation of electronic cadd files in AutoCADD 2000 and CALS as-built drawing file formats to accurately depict existing conditions of the project. As-Built Drawings will become the permanent record drawings of the construction. The Contractor is responsible for development of electronic CADD files in accordance with Omaha DistrictCADD standards. Omaha District's CADD standards are located on the Omaha District's FTP site (ftp://ftp.nwo.usace.army.mil/pub/ED/CADD/ae/standards/ACADstd.pdf) for AutoCADD . Use Omaha District's standard plot tables and borders. The As-Built drawings shall include all major features of the work and all details to the same level as the construction set of drawings. All changes from the construction drawings, including but not limited to all deviations, additional information, and modifications to the contract. Where contract drawings or specifications allow for options, only the option selected and actually constructed shall be shown on the As-Built Drawings. Systems designed or enhanced by the Contractor such as HVAC control system, fire alarm system fire sprinkler system, irrigation sprinkler system, letters of clarification, shall be accurately and neatly recorded on the As-Built Drawings using the same symbols, terminology, and general quality as the construction set drawings. All sheets affected by a change shall be revised. The transmittal requirements for the As-built Drawings shall be shown as events on the Contractor prepared progress chart or network analysis system (NAS), whichever is applicable.

1.3 PAYMENT

In accordance with the clause "Payment Under Fixed - Price Construction Contracts", which provides for progress payments on estimates of work accomplished (which meets the standards of quality established under the contract), $(number of drawings in accepted design package x $250 per sheet) will be withheld from payment for the creation of As-Built drawings until the final as-built drawings are delivered to the Contracting Officer (including any necessary revisions and subject to the approval of the Contracting Officer).

1.4 TRANSMITTAL OF AS-BUILT DRAWINGS

1.4.1 Preliminary As-Built Drawings

The Contractor shall produce Preliminary As-Built Drawings indicating as-built conditions on AutoCADD (Version 2000) with "clouding". Preliminary drawings shall consist of 15% of total project drawings. The As-Built CADD files which include all changes up to the time Preliminary Drawings shall be sent as stated below. The Contractor shall draw attention to all drawing changes by "clouding" the affected area. This "clouding" will be accomplished on layer 63 of the drawing file. The Preliminary Drawings shall consist of one (1) set of CADD files on a CD and one (1) full-size set of the Black-Line Drawings. One (1) set of CADD files on a CD shall be submitted to the Omaha District Office (ATTN: CENWO-ED-DI, Jim Janicek). One (1) full-size of the Black-Line Drawings shall be submitted to the COR. Both documents shall be submitted three (3)weeks prior to the final acceptance inspection unless otherwise directed by the COR. The COR will notify the Contractor in writing of approval / disapproval. The Contractor shall not submit the Final Drawings until he receives the COR's letter approving the Preliminary Drawings.

1.4.2 Final As-Built Drawings

The Contractor shall produce Final As-Built Drawings in AutoCADD (Version 2000) and CALS drawing file formats without "clouding". The Final Drawings shall include all changes. The Final Drawings shall be submitted to the COR and Omaha District Office (CENWO-ED-DI) no earlier than the day of acceptance of the project and no later than thirty (30) days after the date on the acceptance letter for the Preliminary Drawing unless otherwise directed by the COR. (**Note: Final drawings should not be forwarded to the customer until after the Corps of Engineers, Omaha District has performed a Quality Review.**) Send the following documents to both the Omaha District Office (Attn: CEMRO-ED-DI, Jim Janicek) and the Area or Resident Office (as directed) for use by the installation: One (1) set of CADD files on CD (folder name containing as-built files shall be designated "AS-BUILTS" on each CD-ROM) and one (1) set of As-Built CALS files on CD. CD cases and CD 's shall contain the name of the project, location, specification number, and contract number, file format and words "As-Built Record Set"). The folder shall contain drawings, indexes and X-REF (CADD CD only) files related to all as-builts. In addition a copy of all red-lined hard copy drawings prepared by the Contractor during construction shall be submitted to the Area or Resident Office (as directed).

1.5 PROCEDURE

The Contractor shall create a set of electronic Cadd files and full-size Red-Line Drawings to fully indicate As-Built conditions. The Red-Line Drawings shall be maintained at the site, in a current condition until the completion of the work and shall be available for review by the COR at all times. All as-built conditions shall be on the Red-Line Drawings within two (2) days after the work activity is completed or shall be entered on the deficiency tracking system (see Section 01451A, CONTRACTOR QUALITY CONTROL).

1.6 TITLE BLOCKS

The contract number and the specification number (if available) shall be shown on all sheets. "RECORD DRAWING" shall be added below the title block on all sheets. All modifications to the contract shall be posted in ascending order. The top line of the revision box shall state "REVISED TO SHOW AS-BUILT CONDITIONS" and dated (month and year completed). All modifications to all plans, sections, or details, shall have a modification number placed in the revision box under column entitled "Symbol". The statement "GENERAL REVISIONS" may be used when applicable. The date to be added in the revision box for modifications is found in Block 3 of Form SF-30.

1.7 PROCEDURES FOR POSTING MODIFICATION CHANGES TO DRAWINGS

Follow directions in the modification for posting descriptive changes.
A Modification Circle shall be place at the location of each deletion.
The highest modification number on the sheet should be shown in the modification circle in the "DATE" and "DRAWING CODE" boxes of the title block.
For all new details or sections that are added to a drawing, place a Modification Circle by the detail or section title.

For changes to a drawing, place a Modification Circle by the title of the affected plan, section or detail titles (each location).
For changes to schedules on drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.
The Modification Circle size shall be 1/2-inch diameter unless the area where circle is to be placed is crowded. Use smaller size circle for crowded areas.

1.8 WORD ABBREVIATIONS

Abbreviations shown on the abbreviation sheet shall be used to describe all work items. Additional word abbreviations, not found on the abbreviation sheet but necessary to describe the work, shall be properly identified and incorporated with the other standard word abbreviations.

1.9 LEGEND SHEETS

Symbols, which conflict with those on the construction drawings legend sheet, shall not be used. Additional symbols, properly identified, necessary to depict any additional work items, shall be added to the legend sheet or supplemental legend. Those projects that do not have legend sheets may use supplemental legends on each sheet where symbol is shown.

1.10 CONTRACTOR SHOP DRAWINGS

Contractor shop drawings,which supersede data on the contract plans and/or additional drawings, prepared by the Contractor, shall be incorporated into the As-Built Drawings. Design plans prepared by Contractor shall include the designer's name on the As-Built Drawings.

1.11 INDEXING OF DRAWINGS

If drawings are added to the portfolio of drawings to depict as-built conditions, the index of drawings shall be revised accordingly.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL

As-Built drawings shall include as-built information to the same level of detail as shown on the construction drawings set details, unless otherwise specified. The Contractor shall provide any additional full-size drawings as required to display all the details.

3.2 SITE WORK

3.2.1 Utilities

All utilities shall be shown whether active, inactive, shown on the construction drawings, or found on-site. The type of utility, location, general direction, size, material make-up and depth shall be shown. The location and description of any utility line or other installations of any kind known to exist within the construction area shall be shown. The location shall include dimensions to permanent features.

3.2.2 Structures

Structures above and below ground shall be shown. The size, material make-up, location, height, and/or depth shall be shown. Manholes shall show rim elevation and invert elevations as applicable. Power poles shall show electrical equipment and voltage rating.

3.2.3 Grades

Grade or alignment of roads, structures, or utilities shall be corrected if any changes were made from the contract drawings. Elevations shall be corrected if changes were made in site grading.

3.3 STRUCTURAL

3.3.1 Steel

Shop drawings that deviate from the construction drawings shall be incorporated in the As-Built Drawings.

3.4 ELECTRICAL

3.4.1 PANELS

All construction set drawing panel schedules shall be revised to show as-built conditions. Home-run circuit designation on electrical drawings shall accurately correspond to the as-built panel schedules.

3.4.2 Controls

All control diagrams on the construction drawings shall be revised to reflect as-built conditions, and setpoints.

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SECTION 01200

WARRANTY OF CONSTRUCTION

5/00 (Rev 10/00)

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PART 3 NOT USED

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SECTION 01200

WARRANTY OF CONSTRUCTION
5/00 (Rev 10/00)

PART 1 GENERAL

1.1 WARRANTY OF CONSTRUCTION

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

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

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

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

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

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause.

(e) The Contractor's warranty with respect to work restored, repaired or replaced will run for 1 year from the date of restoration, repair or replacement. This provision applies equally to all items restored, repaired, or replaced under paragraph (c) and (d) above.

(f) The Government will notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage. Repair work necessary to correct a warranty condition which arises to threaten the health or safety of personnel, the physical safety of property or equipment, or which impairs operations, habitability of living spaces, etc., will be performed by the Contractor on an immediate basis as directed verbally by the Government. Written verification will follow verbal instruction.

(g) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of verbal or written notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(h) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

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

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

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

(i) 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.

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

(k) 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.

(l) The Prime Contractor shall designate a representative to attend and chair warranty meetings that will be held each month at the project site for the duration of the warranty period, with government and subcontractor personnel as necessary. The meeting shall review past warranty corrections and response times, open warranty items, up-coming scheduled corrections, site investigations, and other issues.

1.2 ADDITIONAL WARRANTY REQUIREMENTS

1.2.1 Performance Bond

(a) It is understood that the Contractor's Performance Bond will remain effective for one (1) year from the date of acceptance.

(b) If either the Contractor or his representative doesn't diligently pursue warranty work to completion, the contractor and surety will be liable for all costs. The Government, at its option, will either have the work performed by others or require the surety to have it done. Both direct and administrative costs will be reimbursable to the Government.

1.2.2 Pre-Warranty Conference

(a) Prior to contract completion and at a time designated by the Contracting Officer or his authorized representative, the Contractor shall meet with the Contracting Officer or his authorized representative to develop a mutual understanding with respect to the requirements of the Paragraph: WARRANTY OF CONSTRUCTION. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect and other

details deemed necessary by the Contracting Officer or his authorized representative for the execution of the construction warranty shall be established/reviewed at this meeting.

(b) In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of the service representative which is authorized to initiate and pursue warranty work action on behalf of the Contractor and surety. This single point of contact will be located within the local service area of the warranted construction, will be continuously available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any Contractual responsibilities in connection with the paragraph: WARRANTY OF CONSTRUCTION.

(c) Local service area is defined as the area in which the contractor or his representative can meet the response times as described in paragraph 1.2.4 and in any event shall not exceed 200 miles radius of the construction site.

1.2.3 Equipment Warranty Identification

The Contractor shall provide warranty identification tags on all mechanical and electrical equipment installed under this contract. Tags and installation shall be in accordance with the requirements of Paragraph: EQUIPMENT WARRANTY IDENTIFICATION TAGS.

1.2.4 Warranty Service Calls

The Contractor or his local service representative will respond to the site, to a call within the time periods as follows: Four (4) hours for Critical Electrical service Systems and Twenty-Four (24) hours For All Other Systems.

1.2.5 Equipment Warranty Booklet

At or before 30 days prior to final inspection and acceptance of the work, the Contractor shall submit the data mentioned as follows:

The Contractor shall provided a Booklet, which consists of a listing of all equipment items (see paragraphs a. and b. below) which are specified to be guaranteed along with the warranty papers for each piece of equipment. Three (3) legible bound copies of the booklet shall be submitted for approval and shall be indexed alphabetically by equipment type. For each specific guaranteed item, the name, address, and telephone number shall be shown on the list for the subcontractor who installed equipment, equipment supplier or distributor, and equipment manufacturer. Completion date of the guarantee period shall correspond to the applicable specification requirements for each guaranteed item. The names of service representatives that will make warranty calls along with the day, night, weekend and holiday contacts for response to a call within the time period specified shall also be identified.

a. For Equipment in Place: The equipment list shall show unit retail value and nameplate data including model number, size, manufacturer, etc. This would include capital equipment and other nonexpendable supplies of a movable nature that are not affixed as an integral part of the facility and may be removed without destroying or reducing the usefulness of the

facility. Some examples are spare parts, special tools, manufacturing equipment, maintenance equipment, instruments, installed under this contract.

b. For Installed Building Equipment: The equipment list shall show unit retail value and nameplate data including model number, size, manufacturer, etc. This would include items of equipment and furnishings (including material for installation thereof), which are required to make the facility usable and are affixed as a permanent part of the structure. Some examples are plumbing fixtures, laboratory counters and cabinets, kitchen equipment, mechanical equipment, electrical equipment, and fire protection systems installed under this contract.

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-11 Closeout Submittals

Equipment Warranty Booklet

1.4 EQUIPMENT WARRANTY IDENTIFICATIONS TAGS

1.4.1 GENERAL REQUIREMENTS

The Contractor shall provide warranty identification tags on all Contractor and government furnished equipment which is Contractor installed.

1.4.1.1 Tags and Information

The tags and information shall be similar in format and size to the exhibits provided by this specification, and shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure- sensitive adhesive back, and shall be installed in a position that is easily (or most easily) noticeable. If the equipment surface is not suitable for adhesive back, Contractor shall submit his alternative to the Contracting Officer's Authorized Representative for review and approval. Contractor furnished equipment that has differing warranties on its components will have each component tagged.

1.4.1.2 Tags for Warranted Equipment

The tag for his equipment shall be similar to the following:

```
+-------------------------------------------+
¦            EQUIPMENT WARRANTY             ¦
¦                                           ¦
¦      CONTRACTOR FURNISHED EQUIPMENT       ¦
¦                                           ¦
¦                                           ¦
¦ MFG----------------MODEL NO.-----------   ¦
¦                                           ¦
¦ SERIAL NO.------------------------------ ¦
¦                                           ¦
```

```
¦ CONTRACT NO.---------------------------- ¦
¦                                          ¦
¦ CONTRACTOR NAME------------------------- ¦
¦                                          ¦
¦ CONTRACTOR ADDRESS---------------------- ¦
¦                                          ¦
¦ CONTRACTOR TELEPHONE-------------------- ¦
¦                                          ¦
¦ CONTRACTOR WARRANTY EXPIRES------------- ¦
¦                                          ¦
¦ IN CASE OF WARRANTY ACTION FIRST CONTACT ¦
¦                                          ¦
¦     [DEH] [BCE] AT [TELEPHONE NUMBER]    ¦
¦                                          ¦
+------------------------------------------+
```

```
+--------------------------------------------------+
¦                                                  ¦
¦                EQUIPMENT WARRANTY                ¦
¦                                                  ¦
¦          GOVERNMENT FURNISHED EQUIPMENT          ¦
¦                                                  ¦
¦  MFG ________________  MODEL NO._______________  ¦
¦                                                  ¦
¦  SERIAL NO. ____________________________________ ¦
¦                                                  ¦
¦  CONTRACT NO. __________________________________ ¦
¦                                                  ¦
¦  DATE EQUIP PLACED IN SERVICE ________________  ¦
¦                                                  ¦
+--------------------------------------------------+
```

1.4.1.3 Exclusion to Providing Tags

If the manufacturer's name (MFG), model number and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag. The Contractor's warranty expiration date and the final manufacturer's warranty expiration date will be determined as specified by the Paragraph "WARRANTY OF CONSTRUCTION".

1.4.2 EXECUTION

The Contractor will complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment. The Contractor shall be responsible for scheduling acceptance inspection with the Contracting Officer (verbal and written notification required). If this inspection is delayed by the Contractor, the Contractor shall, at his own expense, update the in-service and warranty expiration dates on these tags.

1.4.3 Equipment Warranty Tag Replacement

Under the terms of this contract, the Contractor's warranty with respect to work repaired or replaced shall run for one year from the date of repair or replacement. Such activity shall include a data warranty identification tag on the repaired or replaced equipment. The tag shall be furnished and installed by the Contractor, and shall be similar to the original tag,

except that it should include the scope of repair and that the contractor's warranty expiration date will be one year from the date of acceptance of the repair or replacement. In the case of repair, the repair only will be covered by the extended warranty. In the case of replacement of a component, the component only will be covered by the extended warranty. In these cases, the original tags will not be removed, but an additional tag will be installed for the repair or component replacement.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01320A

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08/01; Omaha Rev. 10/01

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SECTION 01320A

PROJECT SCHEDULE
08/01; Omaha Rev. 10/01

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1-1-11	(1995) Progress, Schedules, and Network Analysis Systems

1.2 QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments. The scheduler shall be a direct employee of the prime contractor and have a minimum of 2 years experience in scheduling.

3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate Contractor's 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 the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, 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.

3.3 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in the Precedence Diagram Method (PDM).

3.3.2 Level of Detail Required

The Project Schedule shall include an appropriate level of detail. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule:

3.3.2.1 Activity Durations

Contractor submissions shall follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods (usually less than 2 percent of all non-procurement activities' Original Durations are greater than 20 days).

3.3.2.2 Procurement Activities

Tasks 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, approvals, procurement, fabrication, and delivery.

3.3.2.3 Critical Activities

The following activities shall be listed as separate line activities on the Contractor's project schedule:

a. Submission and approval of mechanical/electrical layout drawings.

b. Submission and approval of O & M manuals.

c. Submission and approval of as-built drawings.

d. Submission and approval of 1354 data and installed equipment lists.

e. Submission and approval of testing and air balance (TAB).

f. Submission of TAB specialist design review report.

g. Submission and approval of fire protection specialist.

h. Submission and approval of testing and balancing of HVAC plus commissioning plans and data.

i. Air and water balance dates.

j. HVAC commissioning dates.

k. Controls testing plan.

l. Controls testing.

m. Performance Verification testing.

n. Other systems testing, if required.

o. Prefinal inspection.

p. Correction of punchlist from prefinal inspection.

q. Final inspection.

3.3.2.4 Government Activities

Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to: approvals, inspections, utility tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

3.3.2.5 Responsibility

All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

3.3.2.6 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

3.3.2.7 Modification or Claim Number

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number. Whenever possible, changes shall be added to the schedule by adding new activities. Existing activities shall not normally be changed to reflect modifications.

3.3.2.8 Bid Item

All activities shall be identified in the project schedule by the Bid Item

to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

3.3.2.9 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

3.3.2.10 Category of Work

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

3.3.2.11 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to, a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

3.3.3 Scheduled Project Completion

The schedule interval shall extend from NTP to the contract completion date.

3.3.3.1 Project Start Date

The schedule shall start no earlier than the date on which the NTP was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

3.3.3.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity called "End Project". The "End Project" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.3.3 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted in the narrative report at every project schedule update period to assist the Contracting Officer in evaluating the Contractor's ability to actually

complete prior to the contract period.

3.3.4 Interim Completion Dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

3.3.4.1 Start Phase

The Contractor shall include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.

3.3.4.2 End Phase

The Contractor shall include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.4.3 Phase X

The Contractor shall include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from 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 failure to ensure 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. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features which calculate one of these parameters from the other shall be disabled.

3.3.6 Out-of-Sequence Progress

Activities that have posted progress without all preceding logic being satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the Contracting Officer. The Contractor shall propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule.

3.3.7 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1 Preliminary Project Schedule Submission

The Preliminary Project Schedule, defining the Contractor's planned operations for the first 60 calendar days shall be submitted for approval within 20 calendar days after the NTP is acknowledged. The approved preliminary schedule shall be used for payment purposes not to exceed 60 calendar days after NTP.

3.4.2 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 40 calendar days after NTP. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.

3.4.3 Monthly Schedule Updates

Based on the result of progress meetings, specified in "Monthly Progress Meetings," the Contractor shall submit monthly schedule updates. These submissions shall enable the Contracting Officer to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgement of the Contracting Officer or authorized representative is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

3.4.4 Standard Activity Coding Dictionary

The Contractor shall use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory, even if some fields are not used.

3.5 SUBMISSION REQUIREMENTS

The following items shall be submitted by the Contractor for the preliminary submission, initial submission, and every monthly project schedule update throughout the life of the project:

3.5.1 Data Disks

Two data disks containing the project schedule shall be provided. Data on the disks shall adhere to the SDEF format specified in ER 1-1-11, Appendix A.

3.5.1.1 File Medium

Required data shall be submitted on 3.5 disks, formatted to hold 1.44 MB of data, compatible with Microsoft Windows 95/98 operating systems, unless otherwise approved by the Contracting Officer.

3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The

label shall indicate the type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number or person responsible for the schedule.

3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

3.5.2 Narrative Report

A Narrative Report shall be provided with the preliminary, initial, and each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the 2 most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.

3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. 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.

3.5.4 Schedule Reports

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in progress or completed.

3.5.4.1 Activity Report

A list of all activities sorted according to activity number.

3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number. Preceeding and succeeding activities shall include all information listed above in paragraph Schedule Reports. A blank line shall be left between each activity grouping.

3.5.4.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.

3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the NTP until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; and complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.

3.5.5 Network Diagram

The network diagram shall be required on the initial schedule submission and on monthly schedule update submissions. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity number, description, duration, and estimated earned value shall be shown on the diagram.

3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3 Critical Path

The critical path shall be clearly shown.

3.5.5.4 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

3.5.5.5 S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly onsite meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions,

and adjustments as appropriate.

3.6.1 Meeting Attendance

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting.

3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost-to-Date shall be subject to the approval of the Contracting Officer. As a minimum, the Contractor shall address the following items on an activity by activity basis during each progress meeting.

3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in-progress or completed .

3.6.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations shall be based on Remaining Duration for each activity.

3.6.3.3 Cost Completion

The earnings for each activity started. Payment will be based on earnings for each in-progress or completed activity. Payment for individual activities will not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

3.6.3.4 Logic Changes

All logic changes pertaining to NTP on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule which does not represent the actual or planned prosecution and progress of the work.

3.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, or any interim milestone date, the Contractor shall furnish the following for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

3.7.1 Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, will not be a cause for a time extension to the contract completion date.

3.7.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under 2 weeks based upon the most recent schedule update at the time of the NTP or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

a. A list of affected activities, with their associated project schedule activity number.

b. A brief explanation of the causes of the change.

c. An analysis of the overall impact of the changes proposed.

d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

3.7.3 Additional Submission Requirements

For any requested time extension of over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change request. The Contractor shall provide this disk within 4 days of the Contracting Officer's request.

3.8 DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions

furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

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SECTION 01330

SUBMITTAL PROCEDURES
09/01; Omaha Update 10/01

PART 1 GENERAL

Attachments: Submittal Register
ENG Form 4025, Transmittal Form

1.1 SUMMARY

This section includes administrative and procedural requirements for construction submittals presented by the Contractor after 100% corrected plans and specifications have been accepted by the government. This section also includes requirements for developing, submitting and maintaining a "Submittal Register".

1.2 CONTRACTOR RESPONSIBILITIES

The Contractor is responsible for total management of his work including approval, scheduling, control, and certification of all submittals. The submittal management system provided in these specifications is intended to be a complete system for the Contractor to use to control the quality of materials, equipment and workmanship provided by manufacturers, fabricators, suppliers and subcontractors. The Contractor shall review each submittal for contract compliance. The Submittal Register (ENG Form 4288) will be utilized to log and monitor all submittal activities. No construction or installation activities shall be performed prior to required approvals and Government compliance reviews of applicable submittals. The Contractor shall perform a check to assure that all materials and/or equipment have been tested, submitted and approved during the preparatory phase of quality control inspections. The Contractor shall coordinate all submittals with the Contractor's Designer (A-E). Approval by the Contractor's Designer means that the submittal is in compliance with the Construction Set design submittal.

1.3 SUBMITTAL IDENTIFICATION (SD)

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

SD-01 Preconstruction Submittals

Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

In addition, the following items are included:

Construction Progress Schedule
Health and safety plan
Work plan

Quality control plan
Environmental protection plan
Permits

SD-02 Shop 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-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-04 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.

Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged. Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of work.

SD-06 Test Reports

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

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

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

Investigation reports

Daily checklists

Final acceptance test and operational test procedure

SD-07 Certificates

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.

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.

Confined space entry permits.

SD-08 Manufacturer's 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.

SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

Factory test reports.

SD-10 Operation and Maintenance Data

Data intended to be incorporated in operations and maintenance manuals.

SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

In addition, the following items are included:

As-built drawings

Special warranties

Posted operating instructions

Training plan

1.4 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.4.1 Designer Approved ("G-AE")

Designer approval is required for extensions of design, critical materials, deviations, 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. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings." All submittals noted in the technical specifications and Submittal Register as "G-AE" are subject to approval by the Contractor's Designer, prior to submittal to the Government. The Contracting Officer has the option to review any submittal. The Government will review all "G-AE" submittals for conformance to the solicitation and all submittals designated as variations from the Solicitation or 100% corrected design or as directed by the Contracting Officer.

1.4.2 Government Reviewed Construction Submittals ("G-RE")

"G-RE" submittals subject to Government review are those so designated by the Contracting Officer during the design process or preconstruction meeting. All "G-RE" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and the Contractor's Designer prior to submittal to the Government. Within the terms of the Contract Clause entitled "Specification and Drawings for Construction," they are considered to be "shop drawings." Any variance must clearly identify the variance as specified in paragraph: "Variations", below.

Government review is required for designated "G-RE" submittals and variations from the the solicitation requirements and completed design. Review will be only for conformance with the contract requirements. This also includes those construction submittals for which the design documents did not include enough detail to ascertain contract compliance. Government review will not include development of design calculations or other means of determining adequacy of design. The Contractor and his designer retains the sole responsibility for adequacy of design.

1.4.3 Information Only (FIO)

All submittals not requiring Contractor's Designer and Government review will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above. The Contracting Officer has the option to review any submittal.

1.5 GOVERNMENT REVIEWED SUBMITTALS

The Contracting Officer's review of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information appear to meet the Solicitation requirements. Government Review 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, compliance with design criteria required in the solicitation, 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 approval, as applicable, by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.6 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer, obtain the Contractor's Designer approval and Government review, or approval, when applicable, and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. Any submittal found to contain errors or unapproved variations from the solicitation or accepted proposal, shall be resubmitted as one requiring "approval" action, requiring both Designer's approval and Government conformance review or approval, as applicable. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.7 WITHHOLDING OF PAYMENT

No Payment for materials incorporated in the work will be made if all required Designer or Contractor Quality Control Representative approvals or required Government conformance reviews, or appprovals, as applicable, have not been obtained. No payment will be made for any materials incorporated in the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.8 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. The Contractor's Quality Control (CQC) representative, and the Designer , as applicable, shall check, approve and stamp, sign, and date each item, indicating action taken. Proposed variations from the solicitation (contract requirements)or accepted 100% corrected design 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 conformance review or approval by the Government shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.9 SUBMITTAL REGISTER AND ENG FORM 4288 (RMS) SUBMITTAL REGISTER

The Contractor's Designer(s) shall develop a complete list of submittals during design. The Designer shall identify required submittals in the specifications. The list is to be used in preparing Submittal Register as approved by the Contracting Officer Representative. The example Submittal Register furnished with the Solicitation was created using Specsintact Software. The Contractor shall replace this example Submittal Register with the actual submittal register for the completed design specifications. The

list is not all inclusive and additional submittals may be required. The attached and Contractor generated submittal register identifies only the submittal section, type of submittal, description of item submitted, paragraph number related to submittal item (section submittal paragraph if none listed), submittal classification (G), and submittal reviewer identifier (AE or RE). Any submittal without a submittal classification and submittal reviewer identifier is considered to be For Information Only (FIO). The submittal register generated by the Government Resident Management System (RMS) Software is used for tracking construction submittals and is referred to as ENG Form 4288 (RMS). Much of the same information contained on the Contractor generated submittal register will be included on the ENG Forms 4288 (RMS). The Contractor shall maintain a ENG Form 4288 (RMS) for the project in accordance with the attached ENG Form 4288 (RMS) Instructions. The Contractor will be furnished one (1) set of ENG Forms 4288 (RMS) at the preconstruction conference on which will be listed each item of equipment and material of each type for which fabricators' drawings, and/or related descriptive data, test reports, samples, spare parts lists, O&M manuals, or other types of submittals are required by the completed project specifications. The Contractor shall complete the appropriate columns as indicated on the attached ENG Form 4288 (RMS) Instructions and return six (6) completed copies to the Contracting Officer for acceptance within 20 calendar days after the preconstruction conference. Upon acceptance of the ENG Form 4288 (RMS) by the Contracting Officer, the ENG Form 4288 (RMS) will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. The ENG Form 4288 (RMS) ACTIVITY NO. is filled in when a network analysis system is a contract requirement. The TRANSMITTAL NO. and ITEM NO. shall be left blank and used later to record the respective transmittal and item number corresponding to those listed on the transmittal form entitled: "TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE" (ENG Form 4025). The approved ENG Form 4288 (RMS) will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated. Updates to the submittal register showing the Contractor action codes and actual dates shall be submitted monthly or until all submittals have been satisfactorily completed. When the progress schedule is revised, the ENG Form 4288 (RMS) shall also be revised and both submitted for approval.

1.10 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 20 calendar days exclusive of mailing time) shall be allowed and shown on the register for conformance reviews by the Contracting Officer for submittals requiring Government review and for submittals which vary from the solicitation or accepted 100% corrected design. No delay damages or time extensions will be allowed for time lost in late submittals.

1.11 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting all submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care

shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.12 SUBMITTAL PROCEDURES

Submittals shall be made as follows:

1.12.1 Procedures

1.12.1.1 "G-AE" Submittals

All "G-AE" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and Contractor's Designer prior to submittal to the Government. A conformance review is required by the Government on all "G-AE" submittals, prior to construction of the related items.

Except as noted below, data for all items listed as "G-AE" Submittals in the various sections shall be submitted in seven (7 copies). All seven (7) copies shall be submitted to the Area Engineer using the transmittal form. Items not to be submitted in multiples, such as samples and test cylinders, shall be submitted to the Area or Resident Engineer (as directed), accompanied by seven (7) copies of the transmittal form.

Each required submittal, which is in the form of a drawing, shall be submitted as seven (7) prints of the drawing. Drawing prints shall be either blue or black line permanent-type prints on a white background or blueprint and shall be sufficiently clear and suitable for making legible copies.

Catalog cuts and other descriptive data which have more than one model, size, or type or which shows optional equipment shall be clearly marked to show the model, size, or type and all optional equipment which is provided. Submittals on component items forming a system or that are interrelated shall be submitted at one time as a single submittal in order to demonstrate that the items have been properly coordinated and will function as a unit.

1.12.1.2 "G-RE" and FIO Submittals

Except as noted below, data for all items listed as "G-RE" Submittals in the various sections shall be submitted in five (5) copies. All five copies shall be submitted to the Area Engineer for solicitation conformance review using the transmittal form. Items not to be submitted in multiples, such as samples and test cylinders, shall be submitted to the Area or Resident Engineer (as directed) accompanied by five (5) copies of the transmittal form.

Except as noted below, data for all items listed as "FIO" Submittals in the various sections shall be submitted in three (3) copies. All three copies shall be submitted to the Area Engineer using the transmittal form. Items not to be submitted in multiples, such as samples and test cylinders, shall be submitted to the Area or Resident Engineer (as directed) accompanied by three (3) copies of the transmittal form.

All "G-RE" and "FIO" submittals shall be reviewed and approved by the Contractor's Quality Control Representative and Contractor's Designer (as applicable) prior to submittal to the Government. A completed Government conformance review is required on all "G-RE" submittals, prior to

construction of the related items.

The Government has the option to review any For Information Only submittals.

1.12.1.3 Certificates of Compliance

Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

1.12.1.4 Purchase Orders

Copies of purchase orders shall be furnished to the Contracting Officer when the Contractor requests assistance for expediting deliveries of equipment or materials, or when requested by the Contracting Officer for the purpose of quality assurance review. Each purchase order issued by the Contractor or his subcontractors for materials and equipment to be incorporated into the project shall (1) be clearly identified with the 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, if applicable.

1.12.1.5 Operation and Maintenance Instructions and/or Manuals

Where required by various technical sections, operations and maintenance instructions and/or manuals with parts lists included shall be provided by the Contractor in quintuplicate, unless otherwise specified, and shall be assembled in three-ring binders with index and tabbed section divider and having a cover indicating the contents by equipment or system name and project title and shall be submitted to the Area Engineer for approval (after approval by the Contractor's Quality Control Representative), 90 days prior to final tests of mechanical and electrical systems, unless otherwise specified. Each operation and maintenance manual shall contain a copy of all warranties. If field testing requires these copies to be revised, they shall be updated and resubmitted for review within 10 calendar days after completion of tests. The Operations and Maintenance Instructions and/or Manuals shall be shown as a separate activity on the Contractor prepared construction schedule bar chart or network analysis system.

1.12.1.6 Interior/Exterior Finish Sample and Data

All submittals regarding color boards (Section 09915) for interior finish samples and data shall be submitted concurrently and all submittals for exterior finish samples and data shall be submitted concurrently. These color boards are in addition to the sample required under the specific technical specifications listed as "samples".

1.12.2 Variations

Variations from the solicitation (contract requirements) or the accepted

100% corrected design must be approved by the Contractor's Designer, Contractor's Quality Control Representative and Contracting Officer. For submittals which include proposed variations, the column "variation" of ENG Form 4025 shall be checked and a serial letter shall be simultaneously prepared and sent to the Area Engineer referencing this variation. The Contractor shall set forth in writing the reason for any variations and clearly annotate such variations on the submittal. The narrative shall include documentation of the nature and features of the variation and why the variation is desirable and beneficial to the Government. When submitting a variation for acceptance, the Contractor warrants that the contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of the work. The Contractor shall take actions and bear the additional costs, including review costs by the Government, necessary due to the proposed variation. In addition to the submittal review period specified above, allow ten (10) additional working days for consideration by the Government of submittals with variations. The Government reserves the right to rescind inadvertent action codes of submittals containing unnoted variations.

1.13 CONTROL OF SUBMITTALS

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

1.14 SUBMITTALS (FINAL COPY)

Upon completion of review of submittals requiring Government conformance review or approval, the submittals will be identified as having received satisfactory review by being so stamped and dated.

1.14.1 "G-AE" Submittals

The Contracting Officer has the option to review any submittal. Two (2) copies of "G-AE" submittals, for conformance review by the Government, will be returned to the Contractor, except for samples, test cylinders, and O&M manuals for which two (2) copies of the transmittal form only will be returned to the Contractor. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. All "G-AE" submittals shall be reviewed and approved by the Contractor's Designer and Contractor's Quality Control Representative prior to submittal to the Government.

1.14.2 "G-RE" Submittals

Two (2) copies of "G-RE" submittals for conformance review will be returned to the Contractor except for samples, test cylinders, and O&M manuals for which two (2) copies of the transmittal form only will be returned to the Contractor.

1.15 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Reviewby the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work;

and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.16 STAMPS

Stamps used by the Contractor's Designer and the Contractor's designated Quality Control person on the submittal data to certify that the submittal meets contract requirements shall be similar to the following (use two stamps for submittals reviewed by both). Stamps shall be located on the back of the ENG Form 4025.:

CONTRACTOR

(Firm Name)

_____ Approved

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

SIGNATURE: _____

TITLE: _____

DATE: _____

INSTRUCTIONS
ENG FORM 4288 (RMS)

1. The Contractor shall utilize the ENG Form 4288 (RMS) generated by the Government Residential Management System (RMS)software for tracking construction submittals. The Submittal Register information, columns (c) thru (f) from the Contractor generated Submittal Register, will be utilized by the Government to generate the ENG Form 4288 (RMS). The Government will furnish the Contractor a hard copy of the ENG Form 4288 (RMS) at the preconstruction conference. The ENG Form 4288 (RMS) includes the following items and parties responsible for completing the information required on the ENG Form 4288 (RMS):

a. Activity Number: will be provided by the Contractor from his Network Analysis, if required, and when a network analysis is accepted.

b. Transmittal Number and Item Number: will be provided by the Contractor from ENG Form 4025 for each item.

c. Specification Paragraph Number: will be provided by the Contractor from the Submittal Register from column entitled "Specification Paragraph Number".

d. Description of Submittal: will be provided by the Contractor from the Submittal Register from column entitled "Description of Item Submitted".

e. Type of Submittal: will be provided by the Contractor from the Submittal Register from column entitled "Type of Submittal" or "Description of Item Submitted".

f. Classification: will be provided by the Contractor from the Submittal Register from column entitled "Classification".

g. Reviewing Office - Reviewer: will be provided by the Contractor from the Submittal Register from column entitled "Classification" or "Reviewer".

h. Contractor Schedule Dates: the Contractor will provide schedule dates for

"Submit Needed By" (Date the Contractor expects to submit an item. It is the Contractors responsibility to calculate the lead time needed for the government approval. Note if resubmittal is required it is the Contractors responsibility to make all adjustments necessary to meet the contract completion date.)

"Approval Needed By" (date the Contractor can receive approval and still obtain the material by need date.), and

"Material Needed By" (date that the material is needed at the site. If there is a network analysis it should reflect that date on the analysis.)

i. Contractor Action: Includes the following items: "Code" and "Submit to the Corps". These items will be completed by the Contractor and/or Contractor's Designer. The action codes will be one of the following:

A - Approved as submitted.
B - Approved, except as noted.

G - Other (specify)

j. Government Action: This item includes a Government Action "Code" and "Date" and is reserved for Government use. The Government reserves the right to review any submittal for contract compliance. Receipt of an Action Code "F - Receipt Acknowledged" or failure of the Contractor to receive an Action Code by the Government, does not mean that the submittal is in compliance with the contract requirements. Action Codes (as noted on ENG Form 4025) are for Standard Invitation for Bid type contracts. For this design-build soclicitaion, unless noted otherwise by the Contracting Officer, the Action Codes for this form, when used by the Government, will be one of the following:

A - Reviewed for conformance. No except taken
B - Reviewed for conformance. Exceptions as noted.
C - Reviewed for conformance. Exceptions as noted. Refer to attached ____ sheet resubmission required.
D - Will be returned by separate correspondence.
E - Reviewed. Does not comply (See Attached). Resubmission required.
F - Receipt Acknowledged.
Fx - Receipt acknowledged, does not comply as noted with contract requirements.
G - Other (specify).

2. Reviewer Abbreviation code will be as follows;

G-AE - Approved by Contractor's Designer, Contractor's Quality Control Representative and Conformance Review by the Government. Approval by the Contractor's Designer means that the submittal complies with Construction Set design submittal.

G-RE - Approved by Contracor's Quality Control Representative and Designer and conformance review by the Government.

For Information Only - All other submittals without a G-RE or G-AE abbreviation code, Approved by Contractors Quality Control Representative and/or Designer. The Government reserves the right review any submittal for conformance with the solicitation.

INSTRUCTIONS
ENG FORM 4025

1. DATE at the top of form will be the date submitted to the DOR which is to be completed by the Contractor.

2. TRANSMITTAL NO. Each new transmittal (i.e. G-AE, G-RE or FIO) shall be numbered consecutively for each specification section in the space provided in "Transmittal No.". This number will be the identifying symbol for each submittal. Example: "15400A-001", "15895A-001" "15895A-002" etc. For each new submittal or for a resubmittal, the appropriate box must be marked. Resubmittals must be designated by their original sequential number followed by an ".1", ".2", etc. for each sequential resubmittal. Example: "15895A-001.1" (previous submittal No. 15895A-001).

3. TO: Box will contain the name and address of the office which will review the submittal (as designated by the Contracting Officer).

4. FROM: Box will be the name and address of the Contractor. Contractor is to complete this box.

5. CONTRACT NO. box will contain the Contractors construction contract number (e.g., DACXXX-XX-C-XXXX).

6. CHECK ONE box will be completed by the Contractor with one box marked. If a resubmittal is provided last transmittal number will be added.

6a. CHECK ONE: THIS SUBMITTAL IS box, delete the words "APPROVAL" and substitute either "G-AE" or "G-RE", as applicable. Check the appropriate box.

7. SPECIFICATION SECTION NO. box will be completed by the Contractor. The number will be the five digit number found in the specifications. No more than one section will be covered with each transmittal.

8. PROJECT TITLE AND LOCATION box will be completed by the Contractor.

9. Column a, will be completed by the Contractor and will contain a different number for each item submitted in that transmittal. Once a number is assigned to an item it will remain the same even if there is a resubmittal.

10. Column b, will be completed by the Contractor. The description of each item on this form will be the descriptions provided on the submittal register. The Contractor shall submit each submittal register item all at once on one transmittal if possible. If a submittal register item can not be submitted all at once Contractor should note that in the remarks box.

11. Column c, will be completed by the Contractor. The information will be the appropriate submittal description number as described this Section or shown on the submittal register (e.g. SD-XX).

12. Column d, will be completed by the Contractor. The number of copies will be determined by the Contractor after review of submittal register for the classification of the item and after review of paragraph: SUBMITTAL PROCEDURES of this Section.

13. Column e, will be completed by the Contractor. The Contractor shall

state all applicable paragraph numbers.

14. Column f, will be completed by the Contractor. The Contractor shall state all applicable drawing sheet numbers.

15. Column g, will be completed by the Contractor and/or Contractor's Designer. The action codes will be one of the following:

A - Approved as submitted.
B - Approved, except as noted.
G - Other (specify)

16. Column h, will be completely by the Contractor. A check shall be placed in this 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".

17. Column i, is reserved for Government use and may or may not be provided. Action Codes (as noted on ENG Form 4025) are for Standard Invitation for Bid type contracts. For this design-build soclicitaion, unless noted otherwise by the Contracting Officer, the Action Codes for this form, when used by the Government, will be one of the following:

A - Reviewed for conformance. No except taken.
B - Reviewed for conformance. Exceptions as noted.
C - Reviewed for conformance., Exceptions as noted. Refer to attached ____ sheet resubmission required.
D - Will be returned by separate correspondence.
E - Reviewed. Does not comply (See Attached). Resubmission required.
F - Receipt Acknowledged.
Fx - Receipt acknowledged, does not comply as noted with contract requirements.
G - Other (specify).

18. REMARKS box self explained.

19. Contractor Quality Control Manager must sign all Eng Form 4025 certifying conformance.

20. Section II will be completed by the Government. Delete the words "APPROVAL ACTION" and substitute "REVIEW/(APPROVAL FOR VARIATION ONLY) ACTION".

Under the Name, Title and Signature block, delete the words "APPROVING AUTHORITY" and substitute "REVIEWING AUTHORITY".

See reverse side of ENG Form 4025 for additional instructions.

-- End of Section --

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Upgrade Water Distribution System, U.S. Air Force Academy, Co

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01200	SD-11 Closeout Submittals															
			Equipment Warranty Booklet	1.2.5														

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TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE

(Read instructions on the reverse side prior to initiating this form)

DATE

TRANSMITTAL NO.

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:

FROM:

CONTRACT NO.

CHECK ONE:
☐ THIS IS A NEW TRANSMITTAL
☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____

SPECIFICATION SEC. NO. *(Cover only one section with each transmittal)*

PROJECT TITLE AND LOCATION

CHECK ONE: THIS TRANSMITTAL IS FOR ☐ FIO ☐ GOV'T. APPROVAL

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* *b.*	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction no. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruction No. 6)* *h.*	FOR CE USE CODE *i.*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.

_____

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED *(List by Item No.)*

NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY

DATE

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for submittals under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A	--	Approved as submitted.	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 (*Specify)*

10. Approval of items does not relieve the contractor from complying with all the requirements of the contact plans and specifications.

(Reverse of ENG Form 4025-R)

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9/01

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SECTION 01332

SUBMITTALS DURING DESIGN
9/01

PART 1 GENERAL

Attachments: Attachment A, Design Certification and Transmittal Letter
DD Form 1354 - Transfer and Acceptance of Military Real Property
Draft Army Pamphlet 405-45, Real Property Inventory Management, Table B-16 "Preparation of DD Form 1354"

1.1 SUMMARY

1.1.1 Section Includes

This section includes general requirements for developing and submitting a design including preparation of drawings, specifications and design analyses conforming to the requirements contained in this section. See Section 01336 60 PERCENT DESIGN REQUIRMENTS and Section 01338 100 PERCENT DESIGN REQUIREMENTS for specific requirements.

1.1.2 Section Excludes

This section does not include requirements for construction submittals which are specified in Section 01330, "Submittal Procedures."

1.2 REFERENCES

The references listed below form a part of this specification to the extent referenced.

1.2.1 THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI)

CSI Masterformat Master List of Section Titles and Numbers

1.2.2 OMAHA DISTRICT CADD STANDARDS MANUAL

(a) Omaha District CADD Standards are available at the following internet address:

ftp://ftp.nwo.usace.army.mil/pub/ED/CADD/ae/standards/

file: ACADstd.pdf for AutoCAD.

(b) Corps of Engineers Civil Standards.

ftp://ftp.nwo.usace.army.mil/pub/ED/CADD/ae/DesBld/

file: civilstd.pdf

1.2.3 WEB SITES

In addition to the web sites listed in this section, Technical Requirement Sections list web sites where design criteria references used in this solicitation package may be found.

NOTE: FOR ITEMS (a), (b), AND (c) BELOW, REFERENCES TO RECEIVING APPROVAL FROM OTHER GOVERNMENT AGENCIES FOR ALTERNATIVE DESIGNS ARE NOT APPLICABLE TO THIS PROJECT. THE CONTRACTOR IS THE DESIGNER WHEN READING THESE DOCUMENTS.

ALL ITEMS LISTED BELOW ARE CONSIDERED TO BE A PART OF THE RFP SOLICITATION DOCUMENT (AS APPLICABLE) AND THE RESULTANT CONTRACT.

(a) TECHNICAL MANUALS (TM), TECHNICAL INSTRUCTIONS (TI), AIR FORCE MANUALS (AFM), ENGINEERING TECHNICAL LETTERS (ETL), ARMY ARCHITECTURAL AND ENGINEERING DESIGN CRITERIA (AEI), SUSTAINABLE DESIGN DOCUMENTS, AND MILITARY HANDBOOKS (MIL HNDBK) can be obtained from the National Institute of Building Sciences Construction Criteria Base (CCB) on CD-ROM. Contact the CCB directly at (202) 289-7800 for an order form or obtain an order form at the following internet address: http://www.ccb.org/ccbsubscribe/Subsmain.asp. There is a regular annual subscription fee to CCB of $700 per year. The CCB is available on CD-ROM or DVD. Selected references are also available for downloading in Acrobat .pdf file format at the following internet address:

http://www.hnd.usace.army.mil/techinfo.

Additional web sites are as follows:

(1) TECHNICAL MANUALS, ETL's, ETC.:

www.usace.army.mil/inet/usace-docs

Click on "Information", then the desired publication.

(2) AIR FORCE DESIGN CRITERIA:

http://afpubs.hq.af.mil

http://www.asc.wpafb.af.mil/cpdc/pubs/AF/index.html

(3) UNIFIED FACILITIES GUIDE SPECIFICAITONS (UFGS)

This includes UFGS sections referenced, but not provided in the solicitation and other UFGS sections required in developing the project specifications. Unless noted otherwise these Guide sections are located on the CD-ROM issued with solicitation (Specsintact files under a directory labeled "Guides" An Index of available UFGS sections is included in Attachment No. 3 of this RFP.

Specsintact software is available on the CCB referred to paragraph (a) above or may be downloaded at the following internet address:

http://si.ksc.nasa.gov/specsintact/software/software.htm

SI Version 3.0 (Version SI3.1.382) or later shall be used. The new unified submittal format shall be selected for file format. A copy of the software (SI Version 3.0) has been included on the CD-ROM issued with this solicitation. See folder: "Software", file "si3.exe".

1.3 NOT USED

1.4 DEFINITIONS

1.4.1 Contractor

Firm or company to whom award was made to design and construct the Upgrade Water Distribution System, located at U.S. Air Force Academy, Colorado.

1.4.2 Design

Documents or deliverables, as defined in this section, prepared by or under the direct supervision of registered professional architects and engineers and proposed by the Contractor to meet the requirements of this solicitation.

1.4.3 Design Drawings

Documentation showing in graphic and quantitative form the extent, design, location, relationships, and dimensions of the construction to be provided by the Contractor. (Note: Shop Drawings, as defined in Section 01330, "Submittals Procedures" are not to be provided until after design drawings are determined satisfactory for construction.)

1.4.4 Designer

Architects and Engineers (A-E) associated with the Contractor who are responsible for (1) preparing the design documents, (2) checking construction submittals, considered extensions of design (A-E), for compliance with the prepared Construction set design documents and (3) have the qualifications and experience specified herein.

1.4.5 Request for Proposal (RFP)

Documents furnished to prospective offerors containing proposal information and specifying criteria and project requirements for design and construction of a Upgrade Water Distribution System located at U.S. Air Force Academy, Colorado. The documents include this specification, attachments, and the RFP drawings.

1.5 QUALITY ASSURANCE

1.5.1 Construction Personnel Experience

The Contruction Personnel experience shall be as submitted per the requirements of the 8 (a) IDIQ Design-Build Contract. If, because of reasons beyond the control of the construction firm, the named individuals are not able to fulfill this obligation, replacement personnel with equal or better skills and experience shall be presented for acceptance by the Contracting Officer. The Contractor shall obtain the Contracting Officer's wrtitten consent before making any substitution for these designated personnel.

1.5.2 Designer Qualifications and Experience

The designer qualifications and experience shall be as submitted per the requirements of the 8 (a) IDIQ Design-Build contract. If, because of reasons beyond the control of the design team, the named individuals are not able to fulfill this obligation, replacement personnel with equal or better education and experience shall be presented for acceptance by the

Contracting Officer. The Contractor shall obtain the Contracting Officer's written consent before making any substitution for these designated personnel.

1.6 SUBMISSION OF DESIGN DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES

1.6.1 Design Certification

Within each design submittal, the Contractor shall certify that all items submitted in the design documents (after construction award) comply with Division 1 specifications and mandatory requirements of the UFGS and designated CEGS. The criteria specified in this 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 signed agreement between the Contracting Officer and the Contractor waiving a specific requirement. The Contractor shall present with the letter of transmittal for each design submittal (including the 100% corrected design (backcheck) submittal) a certification that the submittal (plans, specifications, design analysis, etc.) complies with the requirements stated above, similar to that shown at Attachment A of this section.

1.6.2 Deviations

Deviations from the RFP technical requirements shall be identified in the letter of transmittal. Deviations from the RFP technical requirements will be considered and accepted by the Contracting Officer, if the changes results in a significant improvement to the project or it exceeds the minimum RFP technical requirements.

1.6.3 Field Inspection

The Contractor shall verify field conditions which are significant to design, by field inspection, researching and obtaining all necessary existing facility 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.

1.6.4 Drawings

1.6.4.1 Software Requirements

All design drawings shall be done by the Contractor using AutoCAD 2000 .dwg file format. Format shall conform to the Omaha District CADD Standards and the Omaha District CADD Design File and Sheet Naming Conventions. See Omaha District CADD Standards website listed above.

1.6.4.2 RFP Drawings

The drawings furnished with this solicitation will be furnished to the Contractor in AutoCAD 2002 .dwg file format within 30 calendar days of contract award.

1.6.5 Design Documents

Design documents, as required by the 60 percent and 100 percent design submittals stated hereafter, shall include construction drawings,

specifications and design analysis for categories such as, but not limited to, structural, electrical, grading, drainage, paving, and outside utility services. 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 manufacturer's recommendations. The design analysis shall be for each discipline of work and shall include all features with the necessary calculations, tables, methods and sources used in determining equipment and material sizes and capacities, and shall provide sufficient information to support the design.

1.6.6 Design Reviews

A minimum of two design reviews during design will be held at U.S. Air Force Academy at the 60 percent and the 100 percent completion stages of the final design. A backcheck review will be made on the Corrected 100 percent design. Once that the Corrected 100 percent design is reviewed and determined to be satisfactory for the purpose of beginning construction, the Contractor shall prepare and distribute sets of documents for construction. The Contractor shall attend the design reviews, visit the site and make other trips as necessary during the design to accomplish the work.

1.6.7 Document Packaging

The 60 percent design submittal includes the 60 percent complete site and utility design and structure design. These documents shall be packaged and stamped "For Review Only - 60% Design"; and each sheet of the drawings shall also be stamped. The 100 percent design submittal includes 100 percent complete site and utility design and structure design and shall be stamped "For Review Only -100% Design", and each sheet of the drawings shall also be stamped. The backcheck design submittal(s) after the Government review of the 100 percent complete site and utility design and structure design shall be stamped "100% Corrected Design"; and each sheet of the drawings shall also be stamped. The 100% Corrected Design submittal is for making corrections resulting from review comments and for preparing the final project documents. No additional time for completion of the contract will be granted to the Contractor due to insufficient design submittals. See paragraph 3.7.6 "Government Design Review and Acceptance" for additional requirements.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 DRAWINGS

Prepare, organize, and present drawings in the format specified herein. Provide drawings complete, accurate and explicit enough to show compliance with the RFP requirements and to permit construction. Drawings illustrating systems proposed to meet the requirements of the RFP performance specifications shall reflect proper detailing for each such system to assure appropriate use, proper fit, compatibility of components and coordination with the design analysis and specifications required by this section. Coordinate drawings to ensure there are no conflicts between design disciplines and between drawings and specifications. For specific drawing requirements, see Sections 01336 60 PERCENT DESIGN REQUIREMENTS

and 01338 100 PERCENT DESIGN REQUIREMENTS. The following subparagraphs cover general drawing requirements.

3.1.1 Drawings Format

Full size drawings are considered 28 inches x 40 inches. Half-size drawings are considered 14 inches x 20 inches. Title block shall be as indicated in the Omaha District CADD Standards Manual. Recommended drawing scales are specified in Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS. The Cover Sheet of the Contractor prepared drawings shall bear the stamp or seal and signature of the registered architect or appropriate engineer responsible for the work and proposed to meet the RFP requirements. Drawing code numbers for the design and construction drawings shall be as follows:

AF 842-10-01

3.1.2 Drawings Sequence

Arrange drawings by design discipline in accordance with Omaha District CADD Standards Manual.

3.1.3 Drawings Required

As a minimum, the Contractor shall prepare and submit the following design drawings:

a. Title Sheet, Index of Drawings, Legend and Abbreviations and Soil Borings.

b. Civil Drawings

c. Utility Drawings (Water Supply and Electrical)

d. Not Used

e. Not Used

f. Structural Drawings

g. Not Used

h. Not Used

i. Electrical Drawings

3.2 SPECIFICATIONS

The Contractor shall develop project specifications utilizing the Division 1 Specifications furnished with this RFP; unedited Unified Facilities Guide Specifications (UFGS); designated specification sections furnished with this RFP; and the development of additional project specifications not covered by UFGS. Guide specifications are located on the CD-ROM issued with this solicitaton.

The Contractor shall utilize Specsintact software.

Minimum and recommend hardware requirements are as follows:

MINIMUM REQUIREMENTS	RECOMMENDED REQUIREMENTS
486 (Windows 95/98/NT/2000)	Pentium Class Processor
8MB RAM (Windows 95) 16MB RAM (Windows 98/NT/2000)	32MB RAM
24MB (local) 56MB (Network) Free Hard Drive Space	50 MB (local) 75 MB (Network) Free Hard Drive Space
SVGA Monitor	SVGA Monitor with 800 x 600 resolution
3 1/2 inch 1.44 MB floppy drive	3 1/2 inch 1.44 MB floppy drive
CD ROM Drive	CD ROM Drive
Laser Printer	Laser Printer

Note: Additional Hard Drive space is required for storing project specifications and masters.

a. Technical Specifications

The Contractor shall be required to use unedited UFGS and designated unedited CEGS sections for developing project specifications. Specification paragraphs and subparagraphs shall not be rewritten to lessen the quality of the original technical specification sections. The technical guide specifications describe the type and quality of material and installation normally acceptable for Corps of Engineers Construction, and often represent specific agreement between the Government and the applicable industry. The provision of the technical guide specification should not be changed without justification. Justifications and identification for additional materials shall be identified in the design analysis under the appropriate design discipline. Designer notes shall not appear in any design submittals. Only bracketed choices and inapplicable items shall be marked for deletion. These items shall be removed in corrected 100 percent specifications submittal. The Contractor shall complete the editing of all options in these specifications. Where designer notes are provided, the Contractor shall edit the choice in accordance with the recommendations and guidance of the Notes, except where specific guidance has been provided with this RFP (i.e. submittal paragraph). See additional requirements in Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS.

b. Editing Technical Specifications (Designated CEGS or UFGS)

(1) ADDITIONS: If the specifications of the UFGS or designated CEGS does not cover a feature that is in the project, new sentences and/or paragraphs shall be inserted in the proper locations to adequately cover the feature of work. Additions shall not lesson the quality of materials indicated by the specifications. If a new material is added, it shall be properly referenced in "Applicable Publications," "MATERIALS," "SUBMITTAL," "TESTS," and "INSTALLATION" paragraphs, as applicable.

(2) DELETION OF INAPPLICABLE TEXT MATERIAL, AS NECESSARY, TO TAILOR THE SPECIFICATIONS TO FIT THE PROJECT: After deletion has been made to all inapplicable paragraphs, subparagraphs, choices, and schedules from

the body of the specifications (including but not limited to the correction of lists in "Submittals," "Tests," and "Installation" paragraphs), delete all nonapplicable references listed in the preceding "APPLICABLE PUBLICATIONS" and "MATERIALS" paragraphs. Deletions shall not lesson the quality of materials indicated by the specifications.

(3) Do not remove any special code markings for submittals, references, tests or section references, unless the text is not required.

(4) REFERENCES TO SPECIFICATION SECTIONS. The Contractor shall be responsible for coordinating references, along with the technical requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

(5) SUBMITTALS. Each section of the specifications includes a submittal paragraph which lists all applicable Contractor submittals: (a) for review and approval by the Contractor's designer and, (b) for "For Approval" or "For Information Only" by Construction field offices. Submittals shall be properly marked as outlined in the Specsintact documentation and in this section. These codings are used for automatic generation of the Submittal Register in the Specsintact Software. These codings must NOT be deleted from the text, unless the submittal is not required. The Submittal Item text between the coding shall be identical (word for word, including punctuation and spacing) to the paragraph text in the reference paragraph(s). Text may be either upper or lower case letters. An example of an submittal paragraph is listed below with text telling what each item stands for directly below each listing.

"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

Fire Sprinkler Design Drawings; G-AE

SD-03 Product Data

Meters; G-RE

Regulators

SD-08 Manufacturer's Instructions

Dielectric Unions

Pressure Reducing Valves

See Section 01330: SUBMITTAL PROCEDURES for the list of Submittal Descriptions and Numbers and for submittal classification and further

explanation of the submittal process.

Submittal Classifications (G-AE, G-RE, and FIO) are as follows:

G-AE - G-AE submittals are limited to those that address design work to be performed by the Construction Contractor, items that are considered extremely critical to the designer, or items that involve life safety issues. These submittals are considered to be an extension of design and must be approved by the Contractor's designer of the responsible design organization. Some examples of G-AE submittal extensions of design would include contract documents which do not show complete details of design, contract documents with performance type requirements, critical materials that would be difficult to access for corrections or when the Contractor intends to deviate or vary from the design. The Government will review all G-AE approved submittals for conformance to the Solicitation. The Government will review all submittals designated as deviating from the Solicitation or completed design.

G-RE - G-RE submittals are those that need to be reviewed for conformance to the contract by the Area or Resident Office (as directed). Some examples of G-RE submittals would include variations from the Solicitation package or 100% Corrected Design and other items as designated by the Contracting Officer's Representative. Submittals shall be reviewed and approved by the Contractor's Quality Control Representative and Designer (if applicable), prior to submittal to the Government.

FIO - For Information Only. FIO submittals are those submittals that demonstrate to the Contractor that subcontractors and suppliers are providing materials, equipment, and installation conforms to the contract requirements. FIO submittals also provide information that the Contractor's Quality Control representative needs to verify that the quality specified in the contract is being incorporated into construction of the project. These submittals shall be approved by the Contractor's Quality Control Representative and/or Designer, prior to submittal to the Contracting Officer's Representative. Some examples of FIO submittals would include reports, records, data, instructions and catalog cuts. NOTE: "FIO" IS ANY SUBMITTAL ITEM THAT DOES NOT HAVE A "G-AE" OR "G-RE" CLASSIFICATION. SEE PARAGRAPH BELOW ON HOW TO CORRECTLY IDENTIFY A FIO SUBMITTAL.

For each submittal requirement in the Guide specification, designers shall indicate a submittal type (G-AE, G-RE, or FIO) or shall delete the requirement for the submittal. For submittals that are preselected in the Guide Specification as G, the designer must evaluate the submittal to determine if it is an extension of design. If so, the designer shall change the G to G-AE. Designers shall delete all Certificates (Submittal Designation (SD-07)) except those preselected in the Guide Specifications or required by regulation, code, or law. The designer shall designate these as FIO. To designate a submittal item as FIO, mark the semi-colon following the submittal item and also the submittal tags up to the Item tag for deletion (i.e. "; [ ], [ ]") Designers shall designate all Instructions (SD-08), Test Reports (SD-09 or SD-06), and Closeout Submittals (SD-11) as FIO. Designers shall identify submittal classifications for all required submittals.

(6) USE OF UFGS SECTIONS

UFGS sections are joint effort of the U.S. Army Corps of Engineers (USACE), the Naval Facilities Engineering Command (NAVFAC) and the Airforce Civil Engineer Support Agency (AFCESA). Unless directed to otherwise, use UFGS sections. Available UFGS sections include sections that have a 5 digit section number with either the letters "A" or "N" following the section number or no letter following the section number. The letters designate the specification proponent ("A" is for USACE and "N" is for NAVFAC). The Contractor shall use sections with the letter "A" following the section number or sections with no letter following the section number. Sections with the letter "N" following the section number shall not be used unless there is no other available section, the solicitation directs the use of these sections or the available sections do not meet the solicitation requirements. Do not use Division 1 Sections that have the letter "N" following the section number. Where UFGS sections include tailoring options for both Army and Navy, use the Army tailoring option. Where conflicts exist that cannot be resolved, the Contracting Officer shall be contacted to resolve the issue.

c. Developing Additional Project Specifications.

If the need should arise for developing project specifications on materials/items not covered in by the UFGS or desginated CEGS, the Contractor shall develop specifications utilizing commercial Construction Specifications Institute (CSI), 16 Division, 3 Part Section Format. These specifications shall conform to the applicable criteria requirements indicated in the solicitation. For these specification sections, write at the Mediumscope level of detail as described in CSI Masterformat. Use Mediumscope level section numbers and titles as identified in CSI Masterformat. Adjust section numbers which conflict with the specifications used in the Project Specifications. Each of these developed specification sections shall be in the same format as the CSI format specifications included in the UFGS (including the submittal paragraph). Commercially available guide specifications such as "SpecText" published by The Construction Specifications Institute and "MasterSpec" published by The American Institute of Architects or Unified Facilities Guide Specifications (UFGS) may be used, subject to the format, coding and submittal paragraph requirements. References to the "Architect/Engineer" and the "Owner" shall be changed to refer to the "Government" or "Contracting Officer," as appropriate. The specifications shall clearly identify, where appropriate, the specific products chosen to meet the requirements of the specifications (manufacturers' brand names and model numbers or similar product information). The Contractor shall be responsible for coordinating references, along with the technical requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

d. Division 1 Sections

Include Division 1 specifications sections (01040 AS-BUILT DRAWINGS, 01200 WARRANTY OF CONSTRUCTION, 01320A PROJECT SCHEDULE, 01330 SUBMITTAL PROCEDURES, 01355 ENVIRONMENT PROTECTION, and 01451A CONTRACTOR QUALITY CONTROL contained in the RFP as part of the project specifications without change. Copies of these sections and other Division 1 specifications included with the RFP will be furnished (upon request) to the successful offeror in Specsintact. No other Division 1 Specifications willl be required, unless specified otherwise in this solicitation or required by the Contractor.

3.2.1 Format for Project Specifications

Submit the project specification, including a Cover page and Table of Contents, printed with a word processor (Using Specintact software) using good quality white paper. For the 60 percent and 100 percent design submittals, editing of the CEGS and UFGS shall be shown as indicated in the Specsintact documentation for text deletions and for text insertions. The corrected 100 percent specifications with review comments incorporated shall be cleaned up (markings for insertion and deletion removed) and submitted in both hard copy and on magnetic media (A Microsoft Windows compatible CD-ROM and compatible with the "Specsintact " micro computer software package.). The Cover page and attachments to specification sections shall be prepared in a Microsoft Word (compatible with Microsoft Word 97) format. Carbon copies are not acceptable.

Format shall be as outlined in the Specsintact documentation.

Each specification section shall include a Section Table of Contents which is combined with the page numbering of the specification section.

The Cover page shall be similar to the RFP Cover page and shall include:

a. Project title, Project Number, activity and location

b. Construction contract number

c. Construction Contractor's name and address

d. Design firm's name and address

e. Names of design team members (Designers of record) responsible for each Contractor prepared technical discipline of the project specification

f. Name and signature of a Principal of the design firm

The Table of Contents shall list the 16 Divisions contained in CSI format and the specification section numbers and titles contained in the project specification.

3.2.2 Reports

The Contractor shall submit the following Specsintact reports with the 100 percent and Corrected 100 percent design submittals: Address Verification, Reference Verification, Section Verification, Bracket Verification, Submittal Verification, Submittal Register and any other reports requested by the Contracting Officer. References shall be reconciled when printing reports. The reports to be submitted for review shall be after the Contractor has corrected the errors generated by these reports. From the errors generated by the reference verification reports, fix only those errors where there is a discrepancy with the issue date of a publication (i.e., NFPA 70, revise to the latest code requirement). Address, Reference and Submittal Reconcilation shall be completed prior to submittal of the 100 percent design.

3.2.3 Construction Submittals

All construction submittals shall be in accordance with Section 01330,

"SUBMITTAL PROCEDURES".

Construction submittal types and products, including the submittal description numbers and data package numbers, shall be included in the specification sections, where required. When appropriate, use specific product terms instead of the generic product terms contained in the specifications sections (e.g., asphalt shingles, built-up roofing, EPDM single ply, etc. vs roof covering; concrete masonry units, brick, metal siding, etc. vs exterior skin; mineral fiber board, block, batt or blanket, polystyrene, polyurethane, polyisocyanurate board vs insulation).

3.2.3.1 Submittals Register (Form)

Prepare and maintain a Submittals Register. The Submittal Register (ENG Form 4288 "Submittal Register" shall be prepared using Specsintact Software. Additional instructions for completing the form are contained in Section 01330, "Submittal Procedures."

Fill in columns "c" through "f" and submit with the 100 percent design submittal. The Submittal Register will be returned to the Contractor along with the reviewed and accepted design.

Resubmit the Submittal Register as a construction submittal as required in Section 01330, "SUBMITTAL PROCEDURES." The Contracor shall provide an electronic copy of the accepted submittal register, generated by the Specsintact software, three (3) working days prior to the pre-construction conference. Remaining columns will be filled in at the appropriate time and by the appropriate authorities during construction.

3.3 DESIGN ANALYSES

Prepare design analyses (basis of design and calculations) for each design discipline. Specific requirements relative to the technical content to be provided are specified herein and in Section 01336 60 PERCENT DESIGN SUBMITTALS and Section 01338 100 PERCENT DESIGN SUBMITTALS. The design analyses shall include a basis of design and calculations for each discipline. The design analyses shall be a presentation of facts to demonstrate that the concept of the project is fully understood and that the design is based on sound engineering. The design analysis for each discipline shall include:

a. A basis of design consisting of:

(1) An introductory description of the project concept which addresses the salient points of the design;

(2) An orderly and comprehensive documentation of criteria, rationale, assumptions and reasoning for system selection.

b. Calculations required to support the design.

c. Project Engineering Considerations and Instructions (ECI) for Final Design Analysis.

The Contractor shall not make reference to the RFP solicitation to avoid stating the requirements for the basis for design.

3.3.1 Format

The design analysis shall include: a cover page indicating the stage of design "PRELIMINARY DESIGN ANALYSIS": for 60 percent design submittal and "FINAL DESIGN ANALYSIS" for 100 percent design submittal, the project title "UPGRADE WATER DISTRIBUTION SYSTEM, PN XQPZ044014", fiscal year and program funding "FY 2002 MCP", location "U.S. AIR FORCE ACADEMY, COLORADO", who prepared the design analysis "Prepared By:" followed by Name of AE and Construction Contractor, location of AE and Construction Contractor Office involved with the design, and construction contract number; table of contents; and tabbed separations for each part of design analysis for quick reference. The cover sheet shall indicate the volume number and total number of volumes for the project. Provide a cover sheet for each volume. Submit design analyses prepared on 8 1/2 by 11 inch white paper. The design analysis for all disciplines shall be bound in one volume, excluding calculations. Multiple volumes for individual disciplines, appropriately numbered, may be provided, when required. For Electronic media requirements, see the NOTES for the Construction Set Distribution (paragraph 3.7.1.6). Narratives shall be provided in decimal paragraph numbering system (i.e. 1, 1.1, 1.1.1, 1.1.1.1 etc.). Narratives shall be an original document that does not copy the text from the RFP document sections, unless directed otherwise and shall be written in the same tense (Past or Present) for the entire design analysis. Organize design analysis narrative into the following parts, as follows:

3.3.1.1 Part 1 - General Description.

This part will provide statements of purpose, authority and applicable criteria. A description of the project and a summary of the economic factors influencing the choice of the civil, structural, electrical, and water supply systems used in the project shall be provided along with an indication of how initial and life costs were considered.

a. Purpose. Include the following statement under the heading of "PURPOSE":

"The purpose of this project is to upgrade the water distribution system in the Cadet Area in order to correct life safey, fire suppression and distribution deficiencies."

b. Authority. Provide the following authorization statement under the heading "AUTHORITY" for the project:

"The preparation of design documents was authorized by Design Directive # 1 dated 27 November 2001."

c. Applicable Criteria. Provide a list of the general criteria that pertains to all disciplines used in the design. Specific criteria used in a particular engineering discipline shall be listed in the text of the appropriate discipline in Part 2 of the design analysis. Such criteria shall be referenced accordingly.

d. Project Description. Provide a description of the project and summary of economic factors influencing the choice of materials and systems used in the project.

3.3.1.2 Part 2 - Design Requirements and Provisions.

This part of the design analysis shall provide statements of factors considered and provided in the design along with supporting justification of design decisions and design calculations. Include narratives for each

of the following areas or disciplines. See Sections 01336 60 PERCENT DESIGN REQUIREMENTS and 01338 100 PERCENT DESIGN REQUIREMENTS for specific requirements.

a. Civil

b. Water Supply and Wastewater

c. Not Used

d. Not Used

e. Structural

f. Not Used

g. Electrical

h. Not Used

i. Environmental Protection, Compliance and Permits

j. Not Used

k. Sustainable Design

3.3.2 Calculations

All calculations shall be placed in separate appendix volume(s). Calculations shall include a cover page similar to the design analysis narrative cover page, a table of contents, index page and a summary of criteria for each appendix on the first pages and the project title, and location identified on every page of the calculations. All calculation pages shall be clearly legible and photo-ready. Each discipline which requires calculations shall be consecutively numbered (Example: A-1, A-2, A-3 etc. for Water Supply and Wastewater Calculations and B-1, B-2, B-3, etc. for Structural Calculations) and the date. Cite criteria from which the calculations, rationale, and formulae are extracted by publication number, title, edition and page number. The cover page and each page of calculations shall also include the names of the persons originating and checking the calculations. The person checking the calculations shall be a registered professional engineer other than the originator. In addition, the signature and seal of the appropriate registered professional engineer responsible for the work shall appear on the cover page of the calculations for each discipline. Each appendix index page shall list subtopics (e.g. for Structural - Loads, Materials, References, Wind Analysis, Footing Design, Wall Design, Column Design, etc.) with pages numbers where each of these subtopics can be found in the calculations.

Computer printouts shall be consecutively page numbered and identified similar to the calculations. Identify the computer program name, source, and version. All schematic models used for computer input shall be provided.

3.3.3 Engineering Considerations and Instructions (ECI) for Field Personnel

3.3.3.1 Separate Appendix

Under a separate appendix in the Final Design Analysis, the Design-Build

Contractor shall include the following items:

a. Features critical to the quality of the final construction product requiring special attention.

b. Submittals requiring special attention during construction.

c. Special user requirements or instructions.

d. Assumed field conditions, pertinent significant aspects, or critical phases of the project used as a basis of project design.

3.3.3.2 Format

Format for ECI's shall include the following information:

"ENGINEERING CONSIDERATIONS AND INSTRUCTIONS

Project Name:_____

Location: _____

Designer Name:_____ Phone:_____

Discipline:_____

Design-Build designers have prepared the following engineering considerations and instructions (ECI). These ECI's should be followed during the construction of the above project. If you have any questions, contact the appropriate Design-Build designer."

3.3.3.3 Distribution of ECI's

In addition to including ECI's in a separate appendix of the final design analysis and after acceptance of the 100 percent corrected design and prior to the start of construction, the design-build Contractor shall e-mail a copy of the ECI's to the appropriate U.S. Army Corps of Engineer's Field representative for his consideration with a copy also sent to the appropriate individual in following office(s): CENWO-CD-QR and CENWO-PM-M. The Government will provide the names and e-mail addresses to the design-build Contractor at either the pre-design or pre-construction conference.

3.3.4 Requests for Information, Meeting Minutes and Comments

Copies of Requests for Information (RFI) made by the Contractor to the Government shall be included as an appendix to the design analysis. An index of each RFI, which documents the RFI number, the date RFI given to Government, the date the RFI is answered and the Action Response provided by the Government.

A copy of all meeting minutes and design review comments (if any) with action responses shall be included as an appendix to the design analysis.

Appendices for RFI's and Meeting Minutes and design review comments shall have page numbering that follows the same format as for Calculations listed above.

3.4 DESIGN CERTIFICATION

The Contractor shall provide certification signed by an officer of the Contractor's company attesting that the drawings, specifications and design analyses prepared for the construction of the facility meet the requirements of the RFP. The certification shall accompany the submission of the design documents along with names and disciplines for the designers of record. This design certification shall include a list of deviations (variations) from the solicitation or accepted final design. Prepare the design certification and transmittal letter in the format shown on Attachment A included at the end of this section.

3.5 60 PERCENT DESIGN SUBMITTALS

See Section 01336 60 PERCENT DESIGN REQUIREMENTS.

3.6 100 PERCENT DESIGN SUBMITTALS

See Section 01338 100 PERCENT DESIGN REQUIREMENTS.

3.7 REVIEW BY GOVERNMENT AGENCIES

3.7.1 Distribution of Design Documents for Conformance Review

(a) Government agencies shall receive review documents thirty (30) days prior to review conferences. The documents will be in their then-present "on-board" design status (except for the 100% design submittal). Agencies reviewing documents, and in the quantities indicated, are listed below. All documents must contain an index of contents. Work shall continue during the review period between the 60% design submission and the 60% design review conference. Work shall be 100% complete when the 100% design is submitted. Design work shall not continue during the review period between the 100% design submission and the 100% design review conference. All submittals shall be transmitted by **express mail.** Originals of transmittal letters should be sent to the Omaha District and copies should accompany each mail package. Transmittal letters shall indicate distribution by use of the "ATTN" code shown in the address. Design document set shall include the items listed below. Some of the Construction submittals are also listed. Design submittals shall be submitted as a complete package. The distribution listed below also applies to all design reviews and design package accepted for construction.

(b) If the Government requires more time than the thirty (30) days given, prior to either of the review conferences, the Contractor will be granted an extension of time equal to the number of calendar days of delay.

3.7.1.1 Submittal Items

The submittal items listed below are intended to identify the different design submittals required throughout the design process and select submittals required during and at the completion of Construction. Each submittal item has an Abbreviation, which will be used in conjunction with the number of required copies. See paragraphs 3.7.1.3 through 3.7.1.7 for required copies for distribution.

SUBMITTAL ITEM - **ABBREVIATION**

Design Analysis Narrative - **DANar**
Design Analysis Calculations - **DACalcs**
Specifications - **Specs**

Specification Error Reports - **SpecER**
Submittal Register - **SubReg**
Drawings (1/2 size) - **Dwg-1/2**
Drawings (Full size) - Dwg-full
Meeting Minutes with Annotated Comments and Other Attachments - **MMin**
As-Built Drawings - **Asblt**
Electronic Media Drawings - **EMDwg**
Electronic Media Specifications - **EMSpecs**
Electronic Media Design Analysis - **EMDA**
Design Certification Letter - **DCLet**
DD Form 1354 - Transfer and Acceptance of Military Real Property - **DD1354**
Environmental Protection Plan - **EP Plan**
Engineering Considerations and Instructions - **ECI**

3.7.1.2 Activity Distribution Addresses

Engineering Division
Attn: CENWO-PM-M (Jay Hodges)
U.S Army Engineer District, Omaha
106 South 15th Street
Omaha, NE 68102-1618

Construction Division
Attn: CENWO-CD-Q
U.S. Army Engineer District, Omaha
106 South 15th Street
Omaha, NE 68102-1618

Rocky Mountain Area Engineer
Attn: CENWO-CD-RM
U.S. Army Corps of Engineers
1050 South Academy Boulevard, Suite 100
Colorado Springs, Co 80914-2370

10th Civil Engineering Group
ATTN: 510CEG/CECX, Ralph Clark
8120 Edgerton Drive, Suite 40
United States Air Force Academy, CO 80840-2400

3.7.1.3 60 Percent Design Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity Submittal Item	CENWO-PM-M	CENWO-CD-Q	CENWO-CD-RM	10 CEG/CECX
DANar-	8	2	4	8
DACalcs-	6	2	2	4
Specs-*(1)	8	2	4	8
Dwg-1/2-	8	2	4	8
MMin-*(2)	8	2	4	8
EMDwg-	1*(3)	-	-	-
DCLet-	8	2	4	8

EP Plan	1	-	1	1

*60 PERCENT SUBMITTAL NOTES:

Specific submittal requirements are identified in Sections 01332 and 01336

*(1) Copy shall show deletions and insertions (Revisions On) for all UFGS and designated CEGS specifications submitted. Process and Print Options for each section furnished shall include the following minimum requirements: Under "Sections" Print/Process Sections and Renumber Paragraphs boxes are checked; Under "Reports" a Section Table of Contents (Include Without Scope and Combine sections and section tables of contents); Under "Options" Section Dates shown, Units of Measure as english, Tags are Hidden, Notes are hidden, Revisions are shown, Start Page Numbering with "1", and Restart for each section box is checked; and Under "Header/Footer" jobtitle and jobname as a Header and Section number and Page number as a footer (similar to format shown on this section of the RFP).
*(2) To be submitted after Review Conference per requirements of this section.
*(3) Electronic Media Drawings:

Fifteen (15) percent of all drawings, representative of all design disciplines, shall be submitted in AutoCAD 2000 on CD-ROM to verify that the CADD standards being specified are complied with.

3.7.1.4 100 Percent Design Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity Submittal Item	CENWO-PM-M	CENWO-CD-Q	CENWO-CD-RM	21 CEG/CECX
DANar-	8	2	4	8
DACalcs-	4	2	2	4
Specs-*(1)	8	2	4	8
SpecER-	1	1	-	-
SubReg-	8	2	2	-
Dwg-1/2-	8	2	4	8
MMin-*(2)	8	2	4	8
EMDwg-*(3)	1	-	-	-
DCLet-	8	2	4	8
EP Plan	1	-	1	1
ECI-	8	2	4	8

*100 PERCENT SUBMITTAL NOTES:

Specific Submittal requirements are addressed in Section 01332 and 01338.

*(1) Copy shall show deletions and insertions (Revisions On) for all UFGS

and designated CEGS specifications submitted. Process and Print Options for each section furnished shall include the following minimum requirements: Under "Sections" Reconcile References, Print/Process Sections and Renumber Paragraphs boxes are checked; Under "Reports" a Section Table of Contents (Include Without Scope and Combine sections and section tables of contents), and Reference Verification, Submittal Verification, Reference Verification, Submittal Verification, Bracket Verification, Section Verification and Submittal Register boxes are checked; Under "Options" Section Dates shown, Units of Measure as english, Tags are Hidden, Notes are hidden, Revisions are shown, Start Page Numbering with "1", and Restart for each section box is checked; and Under "Header/Footer" jobtitle and jobname as a Header and Section number and Page number as a footer (similar to format shown on this section of the RFP).
*(2) To be submitted after Review Conference per requirements of this section.
*(3) Electronic Media Drawings:

Fifteen (15) percent of all drawings, representative of all design disciplines, shall be submitted in AutoCAD 2000 on CD-ROM to verify that the CADD standards being specified are complied with.

3.7.1.5 100 Percent Corrected Design Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity Submittal Item	CENWO-PM-M	CENWO-CD-Q	CENWO-CD-RM	10 CEG/CECX
DANar-	8	2	4	8
DACalcs-	4	2	2	4
Specs-*(1)	8	2	4	8
SpecER-	1	1	-	-
SubReg-	2	2	2	-
Dwg-1/2-	8	2	4	8
EMDwg-*(2)	1	-	-	-
DCLet-	8	2	4	8
EP Plan	1	-	1	1
ECI-	8	2	4	8

*100 PERCENT CORRECTED SUBMITTAL NOTES:

Specific Submittal requirements are addressed in Section 01332 and 01338.

*(1) Copy shall show revisions executed (deletions removed and insertions markings removed) for all specification sections submitted. Process and Print Options for each section furnished shall include the following minimum requirements: Under "Sections" Reconcile References and Addresses, Print/Process Sections and Renumber Paragraphs boxes are checked; Under "Reports" a Section Table of Contents (Include Without Scope and Combine sections and section tables of contents), and Reference Verification,

Submittal Verification, Reference Verification, Submittal Verification, Bracket Verification, Section Verification and Submittal Register boxes are checked; Under "Options" Section Dates shown, Units of Measure as english, Tags are Hidden, Notes are hidden, Revisions are hidden, Start Page Numbering with "1", and Restart for each section box is checked; and Under "Header/Footer" jobtitle and jobname as a Header and Section number and Page number as a footer (similar to format shown on this section of the RFP).
*(2) Electronic Media Drawings (AutoCAD 2000) on CD-ROM shall be submitted to verify that the CADD standards being specified are complied with.

3.7.1.6 Construction Set Distribution

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity Submittal Item	CENWO-PM-M	CENWO-CD-Q	CENWO-CD-RM	10 CEG/CECX
DANar-	8	2	6	8
DACalcs-	4	2	2	4
Specs-*(1)	8	2	6	8
SpecER-	1	1	-	-
SubReg-	2	2	2	-
Dwg-1/2-	8	2	6	8
Dwg-full-	-	-	1	1*(2)
EMDwg-*(3)	4	-	-	-
EMSpecs-*(3)	4	-	-	-
EMDA-*(3)	4	-	-	-
DCLet-	8	2	2	8
ECI-	8	2*(4)	4*(4)	8

*CONSTRUCTION SET SUBMITTAL NOTES:

Specific Submittal requirements are addressed in Section 01332 and 01338.

*(1) Copy shall shall be the same as the 100 pecent Corrected submittal and incorporate any additional comments made to 100 percent corrected design submittal.
*(2) Each drawing sheet shall be stamped (P.E.) by the appropriate Designer.
*(3) Electronic Media Drawings (AutoCAD 2000), Electronic Media Specifications (Specsintact), and Electronic Media Design Analysis (MS Word (compatible with MS Word 97) and Adobe Acrobat 5.0. The Design Analysis Calculations shall be included with the design analysis narrative and shall be scanned and saved in Adobe Acrobat 5.0. The design analysis and calculations shall utilize bookmarks for each chapter of the design analysis and each appendix or calculations.
Electronic Media shall be on CD-ROM (Recordable compact disk with minimum 650 megabyte capacity)
*(4) In addition, the Contractor shall e-mail the designated offices a copy of the ECI per requirements stated in this section.

3.7.1.7 As-Built Submittals

See paragraphs above explaining Submittal Abbreviation Codes and Activity Distribution Addresses. The number of copies required for each submittal item are listed below.

Activity	CENWO-PM-M	CENWO-CD-Q	CENWO-CD-RM	10 CEG/CECX
Submittal Item				
Asblt-	*	-	-	-
DD1354-	1	1	1	1

*NOTES for As-Built Submittals:

*See Section 01040, AS-BUILT DRAWINGS for requirements.

3.7.1.8 Design Submittal Alternative

The design-build Contractor may submit hard copy design analysis, design analysis calculations and appendices, specifications, specification error reports, submittal register, design certification letter, and engineering considerations and instructions on CD-ROM in an Adobe Acrobat 5.0 .pdf format and maximum of 2 hard copies per office per submittal listed above (CD's are substituted for hard copy numbers). If this alternative is selected, each of these documents shall utilize bookmarks with titles, which ease the review of the design. Each design submittal item and submittal item components shall be made easy to find (i.e. each specification section, chapters and appendices of design analysis, and each submittal item). This alternative will only be allowed if the design-build Contractor presents a legible and easy to review design. Failure to meet this requirement on one design submittal will result in requiring all future submittals and resubmittals to be hard copy as required above, at no additional cost to the Government.

3.7.2 Review Comments:

For each design review submittal, the Contractor will be furnished comments from Omaha District and other agencies involved in the review process approximately 21 days after receipt and review conference will be held approximately 30 days after receipt. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he/she shall clearly outline, with justification reasons for noncompliance at the design review conference in order that the comments can be resolved. Annotated comments, including the disposition of all comments shall be furnished in writing by the Contractor within five (5) days of the review conference and shall be recorded in the Contractor prepared Meeting Minutes described in paragraph 3.7.6.1. The written documentation shall be forwarded in the same quantities to the distribution list shown in paragraph: "Distribution of Design Documents for Conformance Review" above.

3.7.3 Using Automated Review Management System:

Conference and post conference action: Government personnel, from the above Government Agencies, will present review comments for discussion and resolution. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the

end of conferences. Valid comments will be incorporated. After receipt of final corrected design documents upon incorporation of all backcheck comments (as many backchecks as are deemed necessary by the Government will be conducted), the Omaha District will recommend acceptance to proceed with construction. The Government intends to utilize the Dr. Checks review system, which is available at: www.buildersnet.org/drchecks, for processing review comments and responses. Access rights will be provided to the Design-Build Contractor after contract award. The Government, however, reserves the right to not accept design document submittals and withhold design payments, 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 Omaha District to resolve conflicts and problems such that documents can be fully accepted. However, if final submittal(s) are incomplete or deficient, requiring correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of $1000.00(for each design discipline requiring resubmittal) per submittal. "Design Disciplines" in this paragraph consist of Structural, Electrical, and Civil/Site work.

3.7.4 Delays

Delays caused by the Contractor in completion of the 60 percent design, the 100 percent design or the 100 percent corrected design will not be considered as valid reason to delay completion of the entire design. The Government may not be held liable for delays caused by re-submittal efforts caused by designs submitted, which are rejected by the reviewers.

3.7.5 Reproduction (For Construction):

Upon the Government's completion of the review of the 100% Corrected Design submittal, the Contractor shall reproduce copies of the design documents (accepted for the purposes of beginning construction), subject to the incorporation of the Corrected 100% design review comments. The Cover Sheet of the Contractor prepared drawings shall bear the stamp or seal and signature of the registered architect or appropriate engineer responsible for the work and proposed to meet the RFP requirements. The date on each drawing shall reflect the month and year that the drawings were cleared for the purposes of beginning construction. The Cover Sheet of the drawings, Cover Sheet of the Specifications, and Cover Sheet of the Design Analysis shall include the date that the design documents were cleared for the purposes of beginning construction. The Contractor shall provide corrected 100 percent specifications in both hard copy and electronic media (Specsintact Software Version 3.1.382 or later). Distribution shall be as indicated above. The originals will be retained by the Contractor for recording of as-built conditions. Upon completion of the project, the accepted design documents corrected to reflect as-built conditions shall be supplied to the Government. See Section 01040 AS-BUILT DRAWINGS for as-built drawing requirements.

3.7.6 Government Design Review and Acceptance

3.7.6.1 Design Review Conference and Post-Design Review Conference Action:

All design review conferences shall be held on U.S. Air Force Academy. Government personnel will forward review comments to the Contractor for discussion and resolution prior to the design review conference. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the design review conference adjourns. Unresolved

problems will be resolved by immediate follow-on action at end of conferences. Valid comments will be incorporated. Upon satisfactory Government review of the 100 percent corrected design documents, the Omaha District will formally provide Government acceptance necessary to initiate construction. The Government, however, reserves the right to not accept design document submittals and to withhold design payments, 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 Omaha District to resolve conflicts and problems such that documents can be fully accepted. However, if final submittal(s) are incomplete or deficient, requiring correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of $1000.00 (for each design discipline requiring resubmittal) per submittal. The Contractor shall submit to the Contracting Officer within five (5) calendar days, two two (2) copies of meeting minutes summarizing major decision points and issues which requires resolution and the action office. Annotated comments shall be attached to these minutes.

3.7.6.2 Complete Design Documents

The Contractor shall submit complete design documents in the same quantity and to the same offices listed above in paragraph **"Distribution of Design Documents for Conformance Review"**, for each corrected 100 percent design submittal (one or more) until the Government is satisfied that all review comments have been addressed and resolved.

3.7.6.3 Accuracy and Completeness of Design

Reviews by the Government of the design documents shall not be construed to be an endorsement of the accuracy or completeness of the design. Design deficiencies or omissions in the accepted design shall be the responsibility of the Contractor.

3.7.7 DD Form 1354, Transfer and Acceptance of Military Real Property

The Contractor shall provide, for acceptance, a completed DD Form 1354 "Transfer and Acceptance of Military Real Property" (Copy attached at the end of this section) with the 100 percent corrected design documents. DD Form 1354 shall be filled out in accordance with Draft Army Pamphlet 405-45 "Real Property Inventory Management", Table B-16 "Preparation of DD Form 1354" (Copy attached) and Army Pamphlet 415-28 "Guide to Army Real Property Codes" (Copy is available at the following website: http://www.usapa.army.mil/gils/). The number of copies of the completed DD Form 1354 shall be same as that required for the 100 percent corrected design documents.

3.8 REVISIONS TO THE ACCEPTED DESIGN

(a) The accepted design will be used by all parties involved in construction and in administration of the contract. Therefore, it is imperative that the design documents be kept up to date and an effective system of making and distributing changes be implemented. Since changes to the design increase risk of construction errors and deplete available administrative resources, every effort shall be made to minimize revisions to the accepted design. One of the measures of the Contractor's effectiveness of management will be how well the goal of minimizing changes to the accepted design is met. The use of effective quality control during design, and utilization of experienced and capable designers are some of the means that are expected to be used to accomplish this goal.

(b) If revisions to the accepted design become necessary, the procedures described in Section 01330 SUBMITTAL PROCEDURES will be used to accomplish the revisions. The revisions will be considered a "Variation" and shall be submitted as a "G-RE" submittal. All the requirements in paragraph: "Variations" in Section 01330 SUBMITTAL PROCEDURES will apply to revisions to the accepted design. All design analysis and calculations necessary to establish that the proposed revision satisfies applicable design requirements shall be included in the submittal.

Attachment A

[Contractor's Letterhead]

[Date: _____]
[Contract No. _____]

[Reviewing Component Address]

Subj: DESIGN CERTIFICATION AND TRANSMITTAL FOR
[Project Title _____]
[Project Location _____]
[Contract No. _____]

Gentlemen

Enclosed are the following documents, which I hereby certify are in compliance with the RFP requirements of the subject construction contract and can be used to commence construction subject to Government approval:

1. Design Drawings

2. Project Specification

3. Design Analysis

   a. Civil
   b. Water Supply
   c. Not Used
   d. Not Used
   e. Structural
   f. Not Used
   g. Not Used
   h. Electrical
   i. Environmental Protection, Compliance and Permits
   j. Not Used
   k. Sustainable Design

4. Submittals Register

[Typed Name and Signature of an Officer of the Contractor's Company]

5. All other Design Submittals

6. Deviations

Copy to:
[As standard with the Contractor]

-- End of Section --

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TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

Form Approved
OMB No. 0704-0188

PAGE OF PAGES

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, Va 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. **FROM** *(Installation/Activity/Serviceand Zip code)*	2. OPERATING UNIT	3. DISTRICT CODE	4. OPERATING AGENCY	5. DATE	6. JOB NUMBER	7. SERIAL NUMBER	8. CONTRACT NUMBER

9. **TO** *(Installation/Activity/Serviceand Zip code)*	10. OPERATING UNIT	11. DISTRICT CODE	12. OPERATING AGENCY	13. ACCOUNTING NUMBER	14. ACCOUNTABLE OFFICE NUMBER	15. TYPE OF TRANSACTION		16. PROJECT NUMBER
						A. ☐ NEW CONSTR. ☐ EXISTING FAC. ☐ CAPITAL IMP. ☐ OTHER *(Specify)*	B. ☐ BENF/O ☐ PHYSICAL COM. ☐ FINAN. COM. ☐ OTHER *(Specify)*	

ITEM NO. 17	CATEGORY CODE 18	FACILITY *(Category description)* 19	NO. OF UNITS 20	TYPE 21	UNIT OF MEAS. 22	TOTAL QUANTITY 23	COST 24	DRAWING NUMBERS 25	REMARKS 26

27. STATEMENT OF COMPLETION: The facilities listed hereon are in accordance with maps, drawings, and specifications and change orders approved by the authorized representative of the using agency except for the deficiencies listed on the reverse side.

TRANSFERRED BY *(Signature)*

DATE

TITLE *(Area Engr./Base Engr./DPWO)*

28. ACCEPTED BY *(Signature)*

DATE

TITLE *(Post Engr./Base Civ. Engr./Navy Rep.)*

29. PROPERTY VOUCHER NUMBER

30. CONSTRUCTION DEFICIENCIES

31. REMARKS

INSTRUCTIONS

This form has been designed and issued for use in connection with the transfer of military real property between the military departments and to or from other government agencies. It supersedes ENG Forms 290 and 290B (formerly used by the Army and Air Force) and NAVDOCKS Form 2317 (formerly used by the Navy).

Existing instructions issued by the military departments relative to the preparation of the three superseded forms are applicable to this form to the extent that the various items and columns on the superseded forms have been retained. Additional instructions, as appropriate, will be promulgated by the military departments in connection with any new items appearing hereon.

With the issuance of this DD form, it is not intended that the departments shall revise and reprint manuals and directives simply to show the number of this DD form. Such action can be accomplished through the normal course of revision for other reasons.

Draft Department of the Army Pamphlet 405-45

Real Property Inventory Management

Table B-16, Preparation of DD Form 1354

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Hammerhead
Gang latrine style constructed mid-1950s to mid-1960s. Has company dining facility at one end, giving T-, or hammer, shape to building.

H-Shape
Gang latrine style constructed in 1950s. Two main sections with connecting piece most commonly constructed in shape of letter H. Sometimes in shape of letter A.

Historic Permanent construction before 1950 (perhaps all were before 1940).
Any permanent construction preceding H-shape.

Other
Post-1950 permanent construction not included in above list

Table B-16
Preparation of DD Form 1354 (Transfer & Acceptance of Military Real Property)

Upon receiving information on a DD Form 1354 the real property office will enter the information in the appropriate fields/screens in the automated real property system. The voucher register will be updated with the information and the DD Form 1354 filed in the real property records.

Purpose. This table provides the procedures for completing DD Form 1354 (Transfer and Acceptance of Military Real Property) by all responsible parties. A DD Form 1354 will be prepared for transfer of construction by the District Engineer, transfer of construction accomplished by the designated facility engineer, acquisitions, construction, disposal, purchased or leased real property, reactivation of excess installations, transfers of real property of non-appropriated fund or non-Army agencies to the government, transfers of accountability for usable research and development and acceptance of other construction, and any other real property accountability action.

Detailed Instructions. DD Form 1354 will be filled in as

follows:

1. From: This block will include the name of the transferring agency: organization, installation, division, etc. It will also include the address and zip code. This information is for those performing the work or making the transfer.

---

2. Operating Unit: For other than Army use.

---

3. District Code: For other than Army use.

---

4. Operating Agency: For other than Army use.

---

5. Date: This is the preparation date of the DD Form 1354.

---

6. Job Number: The job number depends on who initiates the job. If the Director of Engineering and Housing (DEH) or the Director of Public Works (DPW) initiates the job then they will put a job number in this block and it will relate to a special project (for contract) or a DA 4283 job order (in house).

---

7. Serial Number: This is the voucher number at source, e.g., DPW, COE.

---

8. Contract Number: If a project has been let to a contractor then the contract number will be that assigned by the contracting office in the Director of Contracting or the District Engineer contracting office.

---

9. To: This will include the name of the receiving organization, installation, division, etc. where the work has been performed or where the transfer has been made. The address and zip code will also be included.

---

10. Operating Unit: Other than Army Use.

---

11. District Code: Other than Army use.

---

12. Operating Agency: Other than Army Use.

---

13. Accounting Number: Other than Army Use.

---

14. Accountable Officer Number: Other than Army Use.

---

15. Type of Transaction: This will identify whether it is new construction, capital improvement or other. It will also indicate whether it is the final cost of the project, beneficial occupancy or physical completion The District Engineer or in house project officer must indicate on the DD Form 1354 whether cost shown is preliminary (for Beneficial Occupancy/Physical Completion DD Forms 1354) or final cost. If it is a preliminary (estimated cost) the real property officer will create a suspense file to ensure that the district furnishes an updated DD Form 1354 with final construction cost. Update to the database should be handled accordingly. Final costs may take several years if legal claims are involved.

a. Block A: Insert an 'X' in the appropriate box of block A to indicate whether the transaction involves new construction, transfer of existing facilities or capital improvements to existing facilities. If the "Other" box is used, explain the transaction in Item 31, "Remarks" on the back of the DD Form 1354.

b. Block B: If block A has been checked for new construction then use this block to indicate whether transaction is being made at time of beneficial occupancy, physical completion, or financial completion. If the "Other" box is used, explain the transaction in Item 31, "Remarks" on the back of the DD Form 1354.

---

16. Project Number: Enter the project number and code number assigned to identify the project. For construction,

enter the public law authorizing the work.

---

17. Item Number: Identify each entry on the DD Form 1354 by giving it an item number. Each portion of a facility with a unique DA PAM 415-28 category code must be identified with a separate line number.

---

18. Category Code: This column will identify the five-digit design use category code associated with the design of the facility as indicated in the DA PAM 415-28. Each facility may have more than one design use; however, they must be identified as separate items in block 17.

---

19. Facility (Category Description): The description for the facility will be entered as it relates to the category short title in the DA PAM 415-28. Each facility number should be identified in this field as it relates to the construction.

---

20. Number of Units: Self-explanatory.

---

21. Type: This will indicate the type of construction: "P" = Permanent, "T" = Temporary and "S" = Semi-permanent.

---

22. Unit of Measure UM1, UM2: This indicates the gross area or capacity of a facility as it relates to the design use category code of the facility. See DA PAM 415-28.

---

23. Total Quantity: This indicates the total quantity of the facility as it relates to the unit of measure assigned to the facility: e.g., UM1 = square feet (SF), acres (AC) or square yards (SY), UM2 = each (EA), families (FA), etc.

---

24. Cost: Cost for each line item entry must be entered. All engineering, design and inspection costs associated with a project must also be captured on the DD Form 1354.

a. If the cost is the final cost figure for the line

item it will carry an alphabetical suffix of "F" indicating that it is a final cost. If the cost is preliminary it will contain a "P" indicating it to be a preliminary cost and not final.

b. If the cost is a capital improvement to an existing facility previously accounted for, enter only the amount which will increase the cost of the real property, i.e., enter the amount by which the general ledger balance is to be increased.

c. All engineering, design and inspection costs will be entered on the DD Form 1354 for the real property office to capitalize as project costs. These will be identified as a separate entry.

Types of funds are mandatory and will be shown in column 24 or column 26 (i.e.: MCA, Housing, and NAF).

---

25. Drawing Number: Indicates the number assigned to a particular drawing of a construction project as it relates to the different components to a facility: the architectural drawing would be number one, the plumbing would be number two, etc. Using the old manual system the drawing numbers would relate to
each page of the project, however, now that the automated system of CADD is operational at many installations this is not the case.

---

26. Remarks: Self-evident. This field may be used to note any information about the drawing numbers, project number, reason for the DD Form 1354: change in unit of measure, reason for increase/decrease in cost, etc.

---

27. Statement of Completion: Indicates the signature/title of the individual responsible for the transfer of the facility/equipment. The date is self explanatory, however, the date must be prior to or the same as the date of acceptance in item 28 on the 1354.

---

28. Accepted By: Indicates the signature/title of the individual responsible for accepting the transfer of such properties. The date is self-explanatory.

---

29. Property Voucher Number: This number will be assigned sequentially by the receiving real property office to indicate the voucher occurrence that the transaction was accepted/vouchered.

Example: V123-90, This indicates that this is the 123rd voucher for FY 90. When an installation transfers from one to another, the losing installation fills in block 7 and the gaining block 29.

---

30. Construction Deficiencies: This should indicate any deficiencies of the design or construction of the project.

---

31. Remarks: Self-explanatory. If the "Other" box is checked in item 15 an explanation should be noted in the "Remarks" column.

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SECTION 01336

60 PERCENT DESIGN REQUIREMENTS

PART 1 60 PERCENT DESIGN SUBMITTALS

For general submittal requirements, See Section 01332 SUBMITTALS FOR DESIGN.

1.1 SITE PLANNING

1.1.1 Drawings

1.1.1.1 Location Plan and Vicinity Map

The Location Plan and Vicinity Map provided in the Request For Proposal (RFP) shall be updated as necessary and included in the drawings. The Location Plan shall include the Contractor's Access Route, Staging Area, and the Project Site.

1.1.1.2 Removal Plan

The removal plan will show the existing physical features and condition of the site before construction. Each physical feature to be removed shall be hatched as indicated on the standard legend sheet, a legend on the removal plan, and properly noted: to be removed, to remain, or to be reinstalled, or relocated. The Removal Plan shall be prepared at the same drawing scale and use the sheet boundaries as the Site Plan.

1.1.1.3 Site Plan

The Site Plan shall show all the site layout information necessary to field locate the tank, fence, rock surfacing, pavement replacements, and all other appurtenances to be constructed as part of the project. The new water line location will be shown on the Site Plan, but will be located and/or dimensioned by utility drawings. Site work to be constructed will be dimensioned for size and location. The Site Plan will clearly identify all site-related items in accordance with a standard legend sheet or with additional legends or notes. Drawing scales of 1"=20', 1"=30 and 1"=50' are acceptable scales for the Site Plan. The contractor shall consider the project's construction area, drawing legibility, number of sheets required in choosing the drawing scale. The Site Plan, prior to adding the dimensions and notes, should serve as the base sheet to other Plans, such as: Utilities Plan, Grading and Drainage Plans and Landscape Plan. Existing and proposed contours or utility lines shall not be shown on Site Plan. Physical features that will remain after the proposed construction has been completed shall be shown. This plan, or the Location Plan, will also show any free zones, construction limits, etc. Whenever the Site Plan occupies more than one sheet of drawings, a Key Plan shall be included. Additional plans showing specific areas of the site in smaller scales can be included if more detail is necessary.

1.1.1.4 Site Details

The Contractor shall provide designs and details as necessary for any site furnishing that may require replacement due to the water line installation.

1.1.2 Specifications

Provide a listing by title and number of all Technical Specifications proposed for use in the final site design.

1.1.3 Design Analysis Narrative

Design analysis shall include the following:

1.1.3.1 Design References

Design references used in preparing the site design.

1.1.3.2 Basis, Specific Goals, Objectives and Priorities For Site Design

The Design Analysis should give the basis, specific goals, objectives and priorities for site design of the project. Identify, explain and document use of design criteria and how the design meets goals, objectives and priorities. Identify the preferred site development concept. Document pollution prevention measures and other environmental considerations made during design. The 60 percent Design Analysis must be approved and accepted before Final Design.

1.2 CIVIL

1.2.1 Drawings

1.2.1.1 Grading Plan

A preliminary grading of the new water storage tank area shall be provided at the same scale as the site plan. Existing grading contours shall be indicated at 1 foot contour intervals. Tentative new grading contours shall be shown. Indicate proposed finished floor elevation of the water storage tank. Provide location and description of benchmarks and indicate vertical and horizontal datums.

1.2.1.2 Grading Sections

Provide grading sections through the water storage tank site showing finished and existing grades, ditches, slopes of finished grades, finish floor elevations of the new tank, and identification of all main features such fence lines, etc.

1.2.1.3 Typical Pavement Sections

Provide typical pavement and road sections and details showing interface between new and existing pavements.

1.2.2 Specifications

Provide a listing by title and number of all Technical Specifications proposed for use in the final civil design. List shall be coordinated with the requirements of Section 01002 SITE WORK.

1.2.3 Design Analysis Narrative

Design analysis shall include the following:

1.2.3.1 References

Design references used in preparing the civil design.

1.2.3.2 Grading

A narrative of the grading design and criteria used.

1.2.3.3 Basis, Specific Goals, Objectives and Priorities For Civil Design

The Design Analysis should give the basis for the civil design and should establish specific goals, objectives and priorities for civil design of the project. Identify, explain and document use of design criteria and how the design meets goals, objectives and priorities. Identify the preferred site development concept. Document pollution prevention measures and other environmental considerations made during design. The 60 percent Design Analysis must be approved and accepted before Final Design.

1.3 GEOTECHNICAL

See Structural Design Requirements.

1.4 WATER SUPPLY

1.4.1 Drawings

1.4.1.1 Water Supply, and Distribution Systems Plan (including connections to existing building services)

Provide all existing utilities and above ground features which may pose as an obstacle (i.e., water, sewer, gas, electrical, etc.) on the basic site plan layout. Exclude siting notes and dimensions from the plan. Provide all proposed new water lines. Show the proposed locations of all new valves), and connection points.

1.4.2 Specifications

Specifications shall be coordinated with the plans and include all items. Provide a listing of specifications to be provided. Provide a complete copy of special sections to cover those subjects for which no UFGS or designated CEGS guide specifications are used or available.

1.4.3 Design Analysis Narrative

Design analysis shall include the following:

1.4.3.1 References

Provide design references used in preparing the water system design.

1.4.3.2 Water Supply and Distribution Systems

A narrative of the water supply and distribution systems design and applicable criteria used shall be provided. A description of the water distribution system, a listing of allowable piping materials and preliminary calculations necessary to support equipment, piping sizes, fire and domestic demands, etc., shall be provided.

1.4.3.3 Water Storage Tank

A narrative of the water storage tank design, applicable criteria and loads shall be provided. (See paragraph STRUCTURAL.)

1.4.3.4 Chlorination Equipment

A narrative of the chlorine feed equipment design, and applicable criteria used shall be provided.

1.5 NOT USED

1.6 NOT USED

1.7 STRUCTURAL

1.7.1 DRAWINGS

Drawings shall include, soil boring plans and boring logs (see Section 01338 100% Design Submittal Requirements, Geotechnical,) roof framing plans, floor slab plans and foundation plans for the water reservoir, valve vaults, overflow pit and other structures. Roof framing plans shall show sufficient details to clearly indicate the type of framing system used, size and spacing of members and their elevations. The location of all columns shall be shown, and all structural members shall be at least outlined. The sizes, locations and elevations of footings shall be shown. Slab plans shall indicate the locations of sloped slabs and contraction or construction joints. Concrete slab-on-grade thicknesses and sections shall be shown. Proposed treatment of unique or complex features and details shall be shown on the drawings. Elevation views, sections and details necessary to illustrate the design at a 60% level of completion shall be provided. Drawings shall also include overall plan dimensions, north arrows, and design notes. Drawings shall be done at a scale appropriate for the design, in no case however, shall plan type drawings be done at a scale smaller than 1/8-inch = 1 foot or detail type drawings at a scale smaller than 1/2-inch = 1 foot.

1.7.2 SPECIFICATIONS

For this 60% design submittal the Contractor shall provide a listing by title and number of all Technical Specifications proposed for use in the final structural design.

1.7.3 DESIGN ANALYSIS NARRATIVE

Design analysis shall follow the format described in Section 01332 SUBMITTALS DURING DESIGN, Paragraph 3.3, "Design Analyses" and the specific content shall be essentially as outlined below.

1.7.3.1 Design Criteria and References

A list of design criteria references, such as Department of the Air Force Manuals, Army Corps of Engineers Technical Instructions, ACI Standards, AISC Specifications, etc., and any other references which were used in the design of the project shall be included in the narrative.

1.7.3.2 Design Loads and Conditions

A copy of the Contractor's Final Soils Report shall be attached to the

narrative. A list of structural design loads and conditions shall also be provided, including:

- Snow load parameters;
- Wind load parameters, as applicable;
- Seismic design parameters;
- Hydrostatic loads, both internal and external;
- Floatation;
- Roof live loads, including vehicle loads on the tank roof;
- Floor live loads, identifying each loading with usage and the room or space where used, including vibration loads;
- Foundation design criteria, including the design depth for footings, allowable soil bearing pressure, equivalent fluid densities (or lateral earth pressure coefficients) for the design of earth retaining structures and building components, modulus of subgrade reaction, and any other pertinent data derived from the recommendations of the Final Soils Report (See Attachment #2 for Geotechnical Information (Preliminary Soils and Foundation Report, Soils Information Report Addendum, and Geotechnical Analysis Criteria) included as an appendix to this solicitation and the Final Soils Report (as developed by the Contractor after award)), copies of which shall be included as an Appendix to the design analysis.

1.7.3.3 Structural Materials

A list of structural materials shall be provided, together with the stress grades and/or ASTM designations, as applicable, for structural steel, concrete, and reinforcing steel; the series for steel joists; and identification of the proposed use of each material in the structure.

1.7.3.4 Availability of Precast Concrete Units

Where precast concrete units of particular cross section(s) and concrete strength are a part of the structural design, verification of their availability from precast producers in the project vicinity shall be documented. Acceptable documentation consists of letters from the producers or a written statement by the Contractor identifying the name and address of the precaster(s), description of units and concrete strength(s) available, date when availability was verified, and name of Contractor's staff member who obtained the verification.

1.7.3.5 Description of the Structural System

A concise description of the proposed structural systems selected for the building, together with the reasons for its selection, shall be provided. All principal elements of the structural system selected shall be described. Typically, these shall include:

- Primary supporting members for the roof;

- Walls, type of material, and whether load bearing

or non-load bearing, with location of load-bearing walls defined, and

measures taken to compensate for expansion/contraction and crack

control in masonry walls;

- The proposed system for resisting lateral forces (wind, earth, hydrostatic and earthquake) and transferring them to the ground, whether diaphragms, chord bracing, shear walls, braced or moment resisting frame, etc;
- Foundations, description of special designs to accommodate existing site conditions;
- Concrete slab-on-grade floors, description of floor surface finish treatment, accommodation of live loads, and the use, location and types of crack control joints;
- The proposed treatment of any unusual structural loadings, features or unique solutions to structural problems
.
- Identification of any major vibrating elements and measures taken to isolate them;
- Prevention and sealing of cracks and leaks in the reservoir.

1.7.4 DESIGN ANALYSIS CALCULATIONS

The extent of the structural calculations shall be indicative of a design which has reached a 60% level of completion. Computations shall include the determination of snow, wind, seismic, floatation, hydrostatic, vehicle, dead and live loads. Computations shall show sizing and spacing of structural members for roof framing, sidewalls and foundation sizes, as appropriate to the systems to be used for these elements.

1.8 NOT USED

1.9 ELECTRICAL

1.9.1 Drawings

Drawings shall show the following:

1.9.1.1 Power Equipment and Layout

Power equipment and layout such as panelboards, large motor driven items, etc.

1.9.1.2 Communications

Communications shall be shown sufficiently to indicate the designers understanding of the Section 01007 ELECTRICAL REQUIREMENTS.

1.9.1.3 Miscellaneous Details of Special Equipment

Miscellaneous details of special equipment to indicate understanding of 01007 ELECTRICAL REQUIREMENTS.

1.9.2 Specifications

Submit prescriptive specification sections to specify the quality, characteristics, installation procedures and testing requirements for all items of the proposed electrical design.

Specifications shall be provided (to approximately 60 percent completion). See Section 01332 SUBMITTALS DURING DESIGN, paragraph 3.2, SPECIFICATIONS for additional requirements.

1.9.3 Design Analysis Narrative

The design analysis shall contain a description and analysis of the electrical portions of the design. Special features, unusual requirements, etc., should be noted. Narrative must address all technical requirements identified in Section 01007 ELECTRICAL REQUIREMENTS.

1.9.4 Design Analysis Calculations

Backup data shall be furnished to support basic design decisions related to sizing of major equipment and materials. As a minimum the following shall be submitted.

1.9.4.1 Service

Sizing of building services EMD (Estimated Maximum Demand) for all loads.

1.9.4.2 Panelboards

Sizing of panelboards and distribution equipment. If a new panelboard is needed. Otherwise, sizing shall be used to verify the new loads can be handled by the existing panelboard.

1.10 NOT USED

1.11 ENVIRONMENTAL PROTECTION, COMPLIANCE, AND PERMITS

1.11.1 General Requirements

Specification Section 01355, ENVIRONMENTAL PROTECTION, furnished with Division 1 of this RFP, contains requirements presently known to be required for environmental protection, compliance, and permits on this project. It is the Contractor's responsibility to provide any additional requirements to ensure that the project is in full environmental compliance with Federal, State, and local laws and regulations. The Contractor shall include any additional requirements in the 60% Environmental Protection, Compliance, and Permits Design Analysis Chapter and the Environmental Protection Plan for the project.

1.11.2 Design Analysis Chapter

The Contractor shall prepare a chapter in the Design Analysis entitled: "ENVIRONMENTAL PROTECTION, COMPLIANCE, AND PERMITS". This chapter shall include a summary of environmental coordination, compliance, approvals, permits, and etc. required for the project. The Contractor shall include documentations of the persons contacted along with phone numbers, summary

of coordination, discussions, phone conversation records, and/or letters required to assure that the project is in full compliance with all Federal, State, and local environmental laws and regulations. A list of environmental permits, approvals, notifications, etc. that are required for the project shall be included.

1.11.3 Draft Environmental Protection Plan

The Contractor shall prepare and submit a Draft Environmental Protection Plan in accordance with the requirements of Section 01355 ENVIRONMENTAL PROTECTION. If additional environmental compliance plans are identified during the design, the Contractor shall include the additional plans.

1.11.4 Appendix to the Environmental Protection Plan

As an Appendix to the Draft Environmental Protection Plan, the Contractor shall submit copies of the permit applications and associated documents, notices, reviews, and/or approvals that are required for the project. If at 60% Design any permits or approvals have been received, copies of the permits and/or approvals shall be included.

1.12 SUSTAINABLE DESIGN REQUIREMENTS

Provide a list of planned sustainable design features incorporated into the design of this facility.

PART 2 NOT USED

PART 3 NOT USED

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1.6 NOT USED

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PART 2 NOT USED

PART 3 NOT USED

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SECTION 01338

100 PERCENT DESIGN REQUIREMENTS

PART 1 100 PERCENT DESIGN SUBMITTALS

For general submittal requirements, see Section 01332 SUBMITTALS DURING DESIGN.

Drawings shall be provided that are based on using data provided in Colorado State Plane (central) NAD 83.

1.1 SITE PLANNING

1.1.1 Drawings

All drawings shall be completely dimensioned in English units, labeled, and noted. All approved comments from the 60 Percent Design Submittal shall have been incorporated. Cross-reference applicable sheets for items shown. Drawings required:

1.1.1.1 Location Plan and Vicinity Map

1.1.1.2 Removal Plan

1.1.1.3 Site Plan

1.1.1.4 Site Details

1.1.1.5 Landscape Plan

A Landscape Plan shall be prepared showing areas to be seeded and sodded, and trees or shrubs that will require replacement. Areas to receive replacement of decorative mulch or plant bed edging shall be indicated on this Plan. The Contractor shall specify types of plant materials that are locally grown, commercially available and acclimated to the project environment. The Landscape Plan shall include a plant materials schedule or listing. This schedule shall include botanical names, common names, key, size and the method of transplanting. If there are no trees, shrubs requiring replacement, the Landscape Plan may be omitted, and the areas of seeding and sodding shown on the Site Plan.

1.1.1.6 Landscape Details

The Contractor shall verify the methods of planting to meet the project site/installation requirements and provide the necessary Landscape Details to perform the contract design work. Details shall reflect local practices and conditions for installation.

If there are no trees, shrubs requiring replacement, the Landscape Details may be omitted.

1.1.1.7 Irrigation System Replacement Plan

A Irrigation System Replacement Plan shall be prepared showing numbered valves and sprinkler heads being removed and reinstalled (See Section 01002), along with other components and lines of the system that may

require removal and replacement or re-installation. If clarity of the drawing can be preserved, the Irrigation System Replacement Plan may be combined with the Landscape Plan. If there are no intallation or reinstallation items for the Irrigation System, the Irrigation System Replacement Plan may be omitted.

1.1.2 Specifications

a. Provide complete edited specifications for all items. Technical specifications shall be complete and fully coordinated with the drawings. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the technical specification.

b. Specifications shall be coordinated with the plans and include all items including seeding, sodding, trees and shrubs, lawn and plant irrigation. Special sections shall be prepared to cover those subjects for which no pattern guide specifications are available. All UFGS or designated CEGS guide specifications, to be provided, shall be in edited form showing all text to be deleted and added.

1.1.3 Design Analysis Narrative

Design analysis shall include the following:

1.1.3.1 References

Provide design references used in preparing the site design.

1.1.3.2 Basis For Design

The Design Analysis should give the basis, specific goals, objectives and priorities for site design of the project. Identify, explain and document use of design criteria and how the design meets goals, objectives and priorities. Identify the preferred site development concept. Document pollution prevention measures and other environmental considerations made during the design process.

1.1.3.3 Irrigation System Calculations

Include a narrative description of the existing system and the replacement componenets required.

1.2 CIVIL

1.2.1 Drawings

1.2.1.1 Grading Plan

A final grading of the New Water Storage Tank Area plan shall be provided at the same scale as the site plan. New and existing grading contours shall be indicated at 1 foot contour intervals. Indicate the finished floor elevation of all new structures. Uniform grades shall be labeled using slope arrows. Provide spot elevations at building corners, changes in grade, etc.

1.2.1.2 Storm Water Pollution Prevention Plan (SWPPP) Site Map

Provide a site map indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, areas which will not be disturbed, locations of major structural and nonstructural erosion controls identified in the SWPPP, locations where stabilization practices are expected to occur, locations of off-site material, waste, borrow or equipment storage areas, surface waters (including wetlands), and locations where storm water discharges to a surface water.

1.2.1.3 Grading Sections

The preliminary grading sections provided at 60% shall be revised as necessary.

1.2.1.4 Pavement Details

Provide details of concrete curb and gutter, integral curb, typical pavement sections, typical sidewalk section, pavement utility cut details, and interface detail between new and existing pavement.

1.2.1.5 Concrete Pavement Joint Details

Provide concrete pavement joint details. Use Omaha District standard detail drawings.

1.2.1.6 Fence Details

Provide fence details. Use Omaha District standard detail drawings.

1.2.1.7 Erosion Control Details

Provide details of best management practices used to control erosion.

1.2.2 Specifications

Provide complete edited specifications for all items. Technical specifications shall be complete and fully coordinated with the drawings. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the technical specification.

1.2.3 Design Analysis Narrative

Design analysis shall include the following:

1.2.3.1 References

Provide design references used in preparing the civil design.

1.2.3.2 Grading

A narrative of the grading design and criteria used.

1.2.4 Storm Water Pollution Prevention Plan (SWPPP)

The Contractor shall prepare the SWPPP in accordance with Omaha District guide specification Section 01565 (FEDERAL FACILITIES COLORADO) NPDES

PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITE and the EPA Storm Water General Permit For Construction Activities (Permit No. COR10*##F). The SWPPP shall be subject to approval by the Government.

1.3 GEOTECHNICAL

1.3.1 Drawings

1.3.1.1 Boring Location Plan

A boring location plan shall be provided. The boring location plan shall be at the same scale used for the Site Plan. A copy of the preliminary boring location plan issued with this Request for Proposal (RFP) is part of the Geotechnical Information, Attachment No. 2. The Contractor shall provide a final boring plan as part of his Final Soils Report.

1.3.1.2 Boring Log Sheet

Boring logs shall be provided on a separate sheet of the drawings. A copy of the preliminary boring logs issued with the RFP is part of the Preliminary Soils Report included with Attachment No. 2. The Contractor shall provide a final boring log as part of his Final Soils Report.

1.3.2 Design Analysis

A copy of the Preliminary Soils Report included with Attachment No. 2, as well as the Contractor's Final Soils Report shall be included as an appendix to the Design Analysis.

1.4 WATER SUPPLY AND STORAGE

1.4.1 Drawings

Generally, the corrected and approved 60 percent plans may be used as the basis for the final plans. However, all details necessary for complete construction must be included. The 100 percent final design submittal shall include all the information presented in the 60 percent submittal, updated to final design status, corrected to reflect any changes made in response to review comments, and shall include the additional requirements specified hereinafter. Any concerns in developing the final design documents shall be resolved prior to starting the final design stage.

1.4.1.1 Water Supply, and Distribution System Plans (including connections to existing building services)

Provide all existing utilities and above ground features, including sizes and material types, which may pose as an obstacle (i.e., water, sewer, gas, electrical, etc.) on the basic site plan layout. Indicate existing pipe material and sizes where new lines connect along with the type of connection and elevations of connections. Provide all new water lines with sizes. This will include all new service lines, up to within 5 feet of the building line. Locations of all new manholes, fire hydrants, valves (including PIV's), similar appurtenances, and connection points shall be provided. Show contours on plan view. Include stationing on both plan and profile sheets.

1.4.1.2 Water Distribution System Profiles

Profiles of all waterlines shall be provided. Indicate existing pipe

material and sizes where new lines connect. Indicate type of connection and elevation. Include all interference elevations.

1.4.1.3 Water Distribution System Details

Appropriate water and sewer details shall be provided. Use Omaha District standard detail drawings. The standard detail sheets will be furnished if required. For roadway pavement crossings, indicate installation method (open cut, boring, jacking, horizontal drilling, etc.). Include standard casing details.

1.4.2 Specifications

Specifications shall be coordinated with the plans and include all items. Provide special sections to cover those subjects for which no UFGS guide specifications are used or available. These special sections shall include all approved changes from the 60 percent review stage. All UFGS guide specifications, to be provided, shall be in edited form showing all text to be deleted and added.

1.4.3 Design Analysis Narrative

Design analysis shall include the following and all applicable data contained in the 60 percent design analysis narrative shall be repeated. References shall not be made to the previous design analysis. The final design analysis shall be corrected to reflect changes in content made in response to review comments, and shall be expanded to reflect the completed design.

1.4.3.1 References

Provide design references used in preparing the water system design.

1.4.3.2 Water Supply, Distribution and Service Systems

A narrative of the water supply, distribution systems and service lines connections design and applicable criteria used shall be provided. A description of the water distribution system, and complete calculations necessary to support equipment, and piping sizes shall be provided.

1.4.3.3 Water Storage Tank

A narrative of the water storage tank design and applicable criteria used shall be provided. Complete calculations necessary to support equipment, valves and piping connections shall be provided.

1.4.3.4 Chlorination Equipment

A narrative of the chlorine feed equipment design, complete calculations, and applicable criteria used shall be provided.

1.5 NOT USED

1.5.1 [Enter Appropriate Subpart Title Here]1.6 NOT USED

1.7 STRUCTURAL

1.7.1 DRAWINGS

Final drawings shall be complete, thoroughly checked, and fully coordinated with the other disciplines, specifications and all other construction documents. Previous comments and applicable criteria changes shall have been incorporated into the design. The drawings shall be complete with all plan views, elevations, sections, details, schedules, diagrams, and notes necessary for the construction of the project. For structural steel framing, the drawings shall meet the requirements for design drawings set forth in the AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings. All structural steel members and connections shall be fully detailed. Design of structural steel connections shall be the responsibility of the structural design engineer and shall not be delegated to the steel fabricator. For structural concrete, the drawings shall conform to the standards for engineering (design) drawings set forth in the ACI Detailing Manual-1988 (SP-66). Additionally, those items described below which are applicable to the design shall be incorporated into the drawings. Drawings shall be at a scale appropriate for the design, in no case however, shall plan type drawings be done at a scale smaller than 1/8-inch = 1 foot or detail type drawings at scale smaller than 1/2-inch = 1 foot.

1.7.1.1 Grid Systems, Dimensions, and Slab Elevations

Each foundation and slab plan and roof framing plan shall have an alpha-numeric grid system aligned with any columns or with walls as applicable. The same grid system shall be used for all plan views. Each plan view shown shall have all necessary dimensions. On plan views, the dimensions shall define the location of grid lines, offsets, and all structural elements, as well as the overall sizes of the structure. The finish elevation of the floor slab may be indicated as 100, and elevations for all other structural elements numerically referenced to this basic elevation.

1.7.1.2 Plan Sheets

a. Foundation and Slab Plans

Foundation and slab plans shall show the size and location of all foundation elements, such as foundation walls and footings. Elevations for footings shall be indicated on the plan. Plans for slabs-on-grade shall show location and type of joints, slab thicknesses and reinforcing, elevation of slab surfaces, and any other design features, such as equipment bases and areas of depressed or sloped slab surface, which affect the slab design or construction. Also, indicate that slabs are placed over vapor barrier and capillary water barrier where applicable.

b. Roof Plans

Roof plans shall be provided for all parts of the structure. Plans shall show the size, spacing, and location of all roof members, their supporting columns, or walls, all auxiliary members such as bracing and bridging, orientation and extent of coverage of structural roof materials as applicable, and the size, location, and framing/reinforcing of all major openings through the roof.

1.7.1.3 Elevation Views, Sections and Details Sheets

Elevation views, sections and details necessary to illustrate fully the

design shall be provided. Some requirements peculiar to the various structural materials are described below.

a. Concrete

Include elevation views as necessary, plus sections and details to show the outlines of concrete cross-sections, reinforcing bar arrangements, concrete cover for rebar, installation of embedded items, and joint construction. All bend locations, lap splice and embedment lengths for reinforcing bars shall be clearly indicated on the drawings. A

b. Not Used

c. Structural Steel

Structural steel connections shall be fully detailed and shown on the drawings. The anchorage to walls or other bearings, and any extra framing or reinforcement required at openings shall also be detailed. Notes, details, or schedules on the drawings shall indicate steel attachment method to be used. Welded connections shall be detailed using standard weld symbols illustrated in AWS D1.1. All applicable weld sizes, spacing, types, contours and finishes shall be shown. Steel located in valve vaults or water storage tank shall be hot-dip galvanized.

1.7.1.4 Schedules

a. Foundation Schedules

Foundation schedules for footings shall be included, as applicable. The schedule shall include all pertinent information required for the foundation system being used.

b. Framing Schedules

For concrete framing, beam and column schedules shall conform to the requirements of the ACI Detailing Manual. For structural steel framing, provide a column schedule complete with column base plates and design loads at splices, if any, and at column bases.

1.7.1.5 Equipment Loads

All equipment loads which exceed 200 lbs and are not supported by concrete slab-on-grade shall be identified on the drawings by showing equipment locations, total weights, and reaction loads at support points.

1.7.1.6 Notes

a. Design Notes

Under the heading "Designer's Notes," the structural drawings shall contain notes which begin: "The structural design was prepared using the following data:". The data then listed shall include the structural loading criteria used for design, such as roof and floor live loads, vehicle loads, snow load design parameters, wind speed and wind load design parameters, seismic design parameters, allowable soil bearing pressures (as recommended by the Final Soils Report), foundation design depth and other data which may be pertinent to future alterations. Also, to be listed are the ASTM designations and stress grades of the applicable structural materials: steel, concrete for each usage, reinforcing bars, welds, and bolts.

b. General Notes

Other notes, which direct the work to be performed, the materials to be used, etc., shall be grouped under the heading of "General Notes." Included in these notes should be a description of the building's structural system, if necessary.

1.7.2 SPECIFICATIONS

Technical specifications for final design shall be prepared in accordance with the submittal requirements section of this RFP. The technical specifications shall be complete and fully coordinated with the drawings. All specification indexes shall be completely edited to reflect the paragraphs retained in the body of the specification. All references that have not been used in the body of the specification shall be edited from the technical specification.

1.7.3 DESIGN ANALYSIS NARRATIVE

The final design analysis narrative shall repeat and expand upon the basic information presented in the 60% design analysis narrative, and shall be corrected to reflect revisions made for the final design.

1.7.4 DESIGN ANALYSIS CALCULATIONS

Calculations shall be prepared by an experienced structural engineer and shall include an investigation of loading, (gravity, wind, seismic, etc.) shear, moment, wind uplift, floatation, hydrostatic, stability and deflection calculations. The computations shall be systematic and accurate. Similar beams, columns, panels, or connections may be grouped by designing the largest member or connection in the group, but every individual slab, beam, column, footing, connection or other structural member or structural consideration indicated by the plans shall be accounted for by pertinent calculations, statement or reasoning, or reference to source. Design formulas shall be written out in symbols the first time each is used, before the numerical values are supplied. All answers shall be identified by dimensional units. Basic assumptions of loads, working stresses, and methods of analysis must appear in the calculations; these assumptions must be applied consistently to a given problem. The calculations shall be presented in a clear and legible form, incorporating a title page, table of contents, and a tabulation showing all design loads and conditions. Pages shall be numbered consecutively and identified in the table of contents. Cross referencing shall be clear. The source of loading conditions, formulas, and references will be identified. Assumptions and conclusions will be explained. Superseded areas of computations must be ruled out. All computations shall be given a complete numerical and theoretical check within the Contractor's office. Calculation sheets shall carry the names or initials of the developer and the checker, and the dates of calculations and checking. No portion of the design calculations shall be developed and checked by the same individual.

1.7.4.1 Computer Calculation Submittals

All applicable input and output data shall be included in readable printed form as part of the design calculations. Continuous paper such as that used in computer terminals or printers shall be cut into individual pages and shall not be submitted in a continuous roll form. All input and output data shall include a brief synopsis of the computer program(s) stating

required input, method of solution, approximations used, codes and specifications used, output generated, extent of previous usage or certification of the program(s), and program author(s). Generalized flow chart(s) may be used to supplement description of solution process, if desired. All computer generated and long-hand calculation sheets shall be identified by sheet number, indexing and cross-referencing. Each member or structure being analyzed shall be identified, dimensioned and shown in a loading diagram. A separate diagram shall be provided for each load case, such as dead plus live, dead plus wind, etc. Input and output values including intermediate values shall clearly be identified if such values are necessary for evaluation of the submittal.

1.8 NOT USED

1.9 ELECTRICAL

1.9.1 Drawings

Drawings shall be provided as indicated below.

1.9.1.1 Interior Drawings

Drawings shall be complete and accurate in every detail and shall include arrangements and types of light fixtures, receptacles, switching, location of special features, necessary details. Additional drawing requirements for specific equipment or systems have been included in subsequent paragraphs pertaining to the equipment or systems.

1.9.1.2 Exterior Drawings

Drawings shall be complete and accurate in all details and shall include the routing of all feeder and branch circuits and control/communication wiring. Drawings showing the cathodic protection system is also required. The cathodic protection drawings shall be on separate sheets from any other work.

1.9.2 Specifications

All specifications shall be completely edited and fully coordinated with the drawings to accurately and clearly identify the product, installation requirements, and testing methods for this facility.

1.9.3 Design Analysis Narrative

The text of the preliminary design analysis should be expanded to reflect the completed design. Calculations used to develop the design should be included. The document in its final form should conform in all applicable respects to the requirements of Section 01007 ELECTRICAL DESIGN REQUIREMENTS.

1.9.4 Design Analysis Calculations

Calculations may be performed by manual or computerized procedures.

1.9.4.1 Panelboards

Sizing and loading of panelboards and distribution equipment. Verification of existing panel capacity or sizing for new panelboard has applicable.

1.9.4.2 Voltage drop determination

Provide voltage drop calculations in accordance with IEEE 241 to demonstrate that the voltage drop requirements of NFPA 70 are satisfied.

1.10 NOT USED1.11 ENVIRONMENTAL PROTECTION, COMPLIANCE, AND PERMITS

1.11.1 General Requirements

Any additional environmental requirements, identified after submittal of the 60% Design documents, shall be include in the 100% Environmental Protection, Compliance, and Permits Design Analysis Chapter and the Environmental Protection Plan for the project.

1.11.2 Design Analysis Chapter

The Contractor shall update the chapter in the Design Analysis entitled: "ENVIRONMENTAL PROTECTION, COMPLIANCE, AND PERMITS" that was submitted at 60%. The updated chapter shall include additional summaries of environmental coordination, compliance, approvals, permits, and etc. required for the project since 60% submittals. The Contractor shall include additional documentations of the coordination, discussions, phone conversation records, and/or letters required to assure that the project is in full compliance with all Federal, State, and local environmental laws and regulations. The Contractor shall included an updated list of environmental permits, approvals, notifications, etc. that are required for the project which was submitted with the 60% submittal.

1.11.3 Environmental Protection Plan

The Contractor shall prepare and submit a Final Design Environmental Protection Plan in accordance with the requirements of Section 01355 ENVIRONMENTAL PROTECTION and any additional environmental compliance plans that have been identified during the design.

1.11.4 Appendix to the Environmental Protection Plan

As an Appendix to the Final Environmental Protection Plan, the Contractor shall submit copies of the completed permit applications and associated documents, notices, reviews, and/or approvals that are required for the project. Copies of all permits and/or approvals that are required for the project prior to start of construction shall be included in the Appendix. Copies of any additional requirements and/or conditions of the permits/approvals, which are required to be submitted during and/or at completion of construction, shall be included in the Appendix.

1.11.5 NPDES Storm Water Permit

If the project requires coverage under the General NPDES Permit for Storm Water Discharges from a Construction Site, the Contractor shall submit the following.

1.11.5.1 Notice of Intent (NOI)

Parts I and II of the Contractor's NOI shall be completed.

1.11.5.2 Notice of Termination (NOT)

Parts II and III of the NOT shall be completed.

1.11.5.3 Storm Water Pollution Prevention Plan (SWPPP)

Complete the Storm Water Pollution Prevention Plan. A SWPPP outline is available at ftp:\ftp.nwo.usace.army.mil/pub/ae/SWPPP/SWPPP.DOC.

1.12 SUSTAINABLE DESIGN REQUIREMENTS

Provide a list of sustainable design features actually incorporated into the design of this facility.

PART 2 NOT USED

PART 3 NOT USED

-- End of Section --

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SECTION 01355

ENVIRONMENTAL PROTECTION
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PART 1 GENERAL

1.1 REFERENCES

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

U.S. AIR FORCE (USAF)

AFI 32-1053	Pest Management Program

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

33 CFR 328	Definitions
40 CFR 68	Chemical Accident Prevention Provisions
40 CFR 152 - 186	Pesticide Programs
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171 - 178	Hazardous Materials Regulations

U.S. AIR FORCE ACADEMY

SPRP	Spill Prevention Response Procedures Plan
HWMP	Hazardous Waste Management Plan
SWPPP	Storm Water Pollution Prevention Plan

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps on Engineers Safety and Health Requirements Manual

WETLAND MANUAL Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

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

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

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

1.2.4 Installation Pest Management Coordinator

Installation Pest Management Coordinator (IPMC) is the individual officially designated by the Installation Commander to oversee the Installation Pest Management Program and the Installation Pest Management Plan.

1.2.5 Land Application for Discharge Water

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

1.2.6 Pesticide

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

1.2.7 Pests

The term "pests" means arthropods, birds, rodents, nematodes, fungi,

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

1.2.8 Surface Discharge

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

1.2.9 Waters of the United States

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

1.2.10 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

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

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

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

1.6 CERTIFICATION REQUIREMENTS

An environmental agency may require design and construction documents to be certified by a Professional Engineer (PE) registered in the State of Colorado. The Contractor shall comply with the certification requirements

of the environmental regulatory agencies.

1.7 ENVIRONMENTAL COORDINATION, PERMITS, NOTICES, REVIEWS AND/OR APPROVALS

The Contractor shall be responsible for contacting the appropriate Federal, State, Regional, and local environmental agencies to identify all required environmental permits (construction and operating), notices, reviews, and approvals required for the project. Once the requirements are identified, the Contractor shall be responsible for coordinating the requirements with USAF Academy's Environmental Flight and the Contracting Officer in regard to implementation for a Federal Facility project. The Contractor shall ensure that all coordination, permits, notices, reviews and/or approvals are completed and submitted with each applicable phase of the design. Prior to construction starting for any phase, the Contractor shall assure that all permits and/or approvals are received and copies are submitted to the Contracting Officer and the USAF Academy's Environmental Flight. The Contractor shall be responsible for any contract delays resulting from failure to obtain environmental permits, notices, reviews and/or approvals when required.

1.7.1 Applications, Supporting Documents, and Fees

The Contractor shall obtain and complete all environmental permit applications and notices including any documents required for a modification for an existing permit held by the Facility. The Contractor is responsible for preparing all supporting documents, including but not limited to engineering reports, emission surveys, diagrams, pollutant load calculations, etc. If, in lieu of permits, the governing agency requires review and approval of the design, the Contractor shall submit and obtain approval of the design and associated documents. The Contractor shall be responsible for all fees associated with the permits, applications, reviews, approvals, and notices.

1.7.2 Upgrade Water Distribution System Environmental Permits, Notices, Reviews, and/or Approvals

The following is a listing of permits, notices, reviews, and/or approvals which **may be** required for this project. This listing and requirements **are not** to be considered all-inclusive by the Contractor, but is provided as information that may be used in successfully accomplishing the environmental compliances.

a. In the State of Colorado, **EPA** has authority for the National Pollutant Discharge Elimination System (NPDES)program on **Federal Facilities**. **If** construction activities results in disturbance of 5 acres of land or more, coverage under the EPA Storm Water General Permit For Construction Activities (Permit No. COR10*##F) is required. The Contractor and the Omaha District Corps of Engineers shall be co-permittees. The Contractor shall be responsible for editing and applying Specification Section 01565 (FEDERAL FACILITIES COLORADO)NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES and submittal requirements in Section 01338, 100 PERCENT DESIGN REQUIREMENTS. An Endangered Species Act consultation was conducted by the USAF Academy to meet the requirements of the NPDES Construction permit. The Contractor shall be responsible for coordinating the requirements identified in the Contract and for coordination with the USAF Academy's Environmental Flight. See paragraph Preble's

Meadow Jumping Mouse(PMJM)in this section and a copy of the USAF Academy's Endangered Species letter attached Specification Section 01565 (FEDERAL FACILITIES COLORADO) NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES.

b. USAF Academy's existing water distribution and treatment system is permitted under a State of Colorado Permit issued to Pine Valley Water Treatment Plant at Colorado Springs, Permit #PWSID 221845. The Contractor shall be responsible for coordination of submittal requirements including the plan review process with the USAF Academy's Bioenviromental Flight, Pine Valley Water Treatment Plant, and the State of Colorado for approvals and compliance with all Federal, State, and local laws and regulations.

c. A State of Colorado Air Pollution Emission Notice (APEN) for Fugitive Dust Permit for Land Development is required if construction disturbs surface areas of more than 25 contiguous acres **or** if surface areas of more than 1 acre are to remain disturbed more than six months. The Contractor shall be responsible for obtaining the State of Colorado Land Development (**Fugitive Dust**)permit prior to construction commencing. The State of Colorado may take a **maximum of 60-days** to review and issue the permit. The Contractor shall be responsible for completing and submitting the Air Pollutant Emission Notice(APEN)-and-Application for Construction permit including the Land Development-Fugitive Dust Control Plan, Grading Plan, and the Notice of Start-up. The **Notice of Start-up** is required to be submitted a **minimum of 30 days** prior to starting work on the project site but may be submitted with the APEN. A copy of the Fugitive Dust permit and Notice of Start-up shall be submitted to the Academy AFB Environmental Flight, Air Quality through the Contracting Officer prior to construction starting. If any of the information that was submitted is modified, the Contractor shall be responsible for coordinating the modification with the Contracting Officer and the State of Colorado. The Contractor shall not incorporate the modifications until receiving approval from the State of Colorado and the Contracting Officer. The Contractor is responsible for payment of all fees associated with the permit.

d. An El Paso County Construction Activities Permit shall be required **instead** of the State of Colorado Fugitive Dust Permit, **if** the length of the land disturbance will be greater than 1 acre but less than 25 acres **and will not** exceed six months in duration. The Contractor shall be responsible for obtaining the permit and for payment of all fees associated with the permit.

e. The Colorado Department of Public Health and Environment (CDPHE), Air Quality Division, may require an Air Pollutant Emission Notice (APEN) and a Permit-to-Construct for a new stationary source emitting an air pollutant. The USAF Academy has a State of Colorado Synthetic Minor Air Permit. The Contractor shall review the State of Colorado Air Quality laws and regulations for applicability of an APEN and/or Permit-to-Construct requirements and shall coordinate the requirements and submittals with USAF Academy's Environmental Flight, Air Quality Section, and the Contracting Officer.

f. A Section 404 of the Clean Water Act Permit shall be required if the Contractor enters, disturbs, destroys, deposits fill material,

trenches, or allow discharge of contaminants into any wetlands or waters of the US. The Contractor shall be responsible for coordinating and identifying wetlands and waters of the US with the USAF Academy's Environmental Flight. Depending on the amount and type of work in the wetlands or waters of the US, either a Nationwide Section 404 Permit (See http://www.spa.usace.army.mil/reg/nnwpsumCO.htm) or an Individual 404 Permit would be required. If an Individual Section 404 Permit is required, the permit process could require more than **180 days.** The Contractor shall be responsible for coordination with the USAF Academy and for the submittals to the US Army Corps of Engineers Regulatory Division and compliance with Section 404 permit requirements.

g. Under the Clean Water Act, Section 402 National Pollutant Discharge Elimination System program, EPA has authority over Federal Lands in the State of Colorado. EPA does **not** have a General Permit for dewatering and discharging of ground water or ground water mixed with storm water so an Individual NPDES Discharge Permit may be required. An Individual NPDES Discharge permit may require **180 day**s before a permit could be issued. The discharge may be covered under the NPDES Storm Water General Construction Permit (see above) if the discharge meets definition of a permitted discharge and is identified in the Storm Water Pollution Prevention Plan.

1.8 ENVIRONMENTAL PROTECTION PLAN

During the initial design phase, the Contractor shall submit an Environmental Protection Plan for compliance review and acceptance by the Contracting Officer. For each additional submittal phases, the plan shall be updated and submitted for compliance review and acceptance by the Contracting Officer. Prior to construction, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the environmental plan, possible subsequent additions and revisions to the plan including any reporting requirements, and methods for administration of the Contractor's environmental plans. The Contractor shall maintain a current version of the Environmental Protection Plan on site for review by interested parties.

1.8.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, submitting for compliance review, and implementing any additional requirements to be included in the Environmental Protection Plan.

1.8.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

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

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

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

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

e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. The plan shall comply with the USAF Academy's Storm Water Pollution Prevention Plan(SWPPP); a copy can be reviewed at the USAF Academy's Environmental Flight office. A Storm Water Pollution Prevention Plan (SWPPP) may be substituted for this plan.

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

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

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

i. Drawing showing the location of borrow areas.

j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1 and the USAF Academy's Spill Prevention Response Plan (SPRP). This plan shall include as a minimum:

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

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

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

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

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

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

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

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

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site. If a State of Colorado Fugitive Dust Permit or an El Paso County Land Development Permit is required, a copy of the Land Disturbance Dust Control Plan which was submitted to the State of Colorado or to El Paso County for the permit shall be included as an attachment to the plan.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. The plan shall in compliance with the USAF Academy's HWMP. A copy of the USAF Academy'sHWMP shall be made available upon request, to use as a guide in preparing their HWMP. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated. The Contractor shall identify any

"extremely hazardous substances" (40 CFR 355, Appendix A and B) to be used during the execution of the contract and indicate if the amount of the chemical exceeds the execution of the threshold planning quantity.

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

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

q. If applicable, a pesticide treatment plan shall be included and updated, as information becomes available. The plan shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional Installation specific requirements. The Contractor shall follow AFI 32-1053 Sections 3.4.13 and 3.4.14 for data required to be reported to the Installation.

1.8.3 Appendix

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

1.9 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any on site construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including

a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

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

1.11 NOTIFICATION

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

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 LAND RESOURCES

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

3.1.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the

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

3.1.2 Landscape

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

3.1.3 Erosion and Sediment Controls

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

3.1.4 Contractor Facilities and Work Areas

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

3.2 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.2.1 Wetlands

The Contractor shall not enter, disturb, destroy, deposit fill material, trench, or allow discharge of contaminants into any wetlands or waters of

the US without coordination and/or a Section 404 of Clean Water Act Permit with the US Army Corps of Engineers Regulatory Division.

3.3 AIR RESOURCES

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

3.3.1 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 Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

3.3.2 Odors

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

3.3.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise.

3.3.4 Burning

Burning shall be prohibited on the Government premises.

3.4 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

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

3.4.1 Solid Wastes

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

Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.

3.4.2 Chemicals and Chemical Wastes

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

3.4.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262 and shall manage and store hazardous waste in accordance with the Installation hazardous waste management plan. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall be responsible for establishing an Initial Accumulation Point (IAP) and shall coordinate with the Contracting Officer and USAF Academy Environmental Flight prior to establishing the IAP. The Contractor shall accumulate no more than 55 gallons of hazardous waste or no more than one quart of acutely hazardous waste ("P"-listed waste as defined in Federal or State regulations). The Contractor shall transport Contractor generated hazardous waste off Government property within 60 days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. A minimum of three working days prior to transporting hazardous waste off site, the Contractor shall coordinate with the Contracting Officer and the USAF Academy's Environmental Flight. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

3.4.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. There shall be no storage of fuel on the project site. Fuel must be brought to

the project site each day that work is performed.

3.4.5 Waste Water

Disposal of waste water shall be as specified below.

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

b. If dewatering of ground water or storm water mixed with ground water is required to be pumped and discharged, the water shall be land applied, if possible,in accordance with all Federal, State, Regional, and Local laws and regulations for pumping and land applying ground water. See above definition for land application. If the water can not be land applied, the Contractor may discharge the water under the NPDES Storm Water General Construction Permit if the discharge meets the requirements identified in the permit and covered in the Storm Water Pollution Prevention Plan. Otherwise, the Contractor is responsible for obtaining a EPA's NPDES Individual Discharge Permit prior to discharging the water. See above paragraph Environmental Permits, Notices, Review, and/or Approvals for the NPDES Individual Discharge Permit requirements. Although the State of Colorado does not have jurisdiction for the NPDES program on Federal Facilities, the Contractor shall assure that the State of Colorado's Water Quality laws and regulations are not violated when pumping, discharging and/or land applying the water.

c. Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing shall be land applied in accordance with all Federal, State, and local laws and regulations for land application or discharged into the sanitary sewer with prior approval and/or notification to the Waste Water Treatment Plant's Operator.

3.5 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project. The Contractor shall be responsible for coordinating with the USAF Academy Environmental Flight for possible participation in, but not limited to, the following recycling and waste minimization activities to divert non-hazardous solid waste.

a. Cardboard and paper products may be recycled through the USAF Academy

b. Asphalt

c. Wood scraps that are free of contaminates may be recycled tot the compost area on USAF Academy

d. Scrap metal that is free of contaminates

3.6 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

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

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

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

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

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

3.7 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, 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 so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.8 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations. In addition, the Contractor shall not harm or harass any wildlife on the USAF Academy.

3.8.1 Preble's Meadow Jumping Mouse (PMJM)

The Federally Threatened Preble's Meadow Jumping Mouse occurs on the Air Force Academy (AFA). The AFA has a Conservation Agreement with the US Fish and Wildlife Service (USFWS) to protect PMJM and it's habitat and to mitigate any adverse impacts to the habitat. On the AFA, the PMJM's habitat is generally defined as riparian habitat (woody vegetated streams and drainage ways) and upland areas within 300-feet of the 100 year floodplain of a stream. The 100 year flood plain on the Academy is usually along the streams including headwaters of the streams. See the RFP

Drawings the PMJM's habitat. In accordance with the Conservation Agreement, the Contractors, when working in potential PMJM habitat, must comply with the following conditions.

a. The Contractor and Contractor's employees shall be trained by the USAF Academy's Biologist as to the reason for, and importance of, limiting impacts to vegetated habitat outside the work area. The Contractor shall be responsible for coordinating the training with the USAF Academy's Environmental Flight's Biologist.

b. The area of proposed impacts to the PMJM's habitat shall be fenced with aesthetically pleasing snow fence or a similar visible barrier to prevent inadvertent impacts to habitat outside the construction footprint. The Contractor shall be responsible for coordination of the fence or barrier with the Academy's Biologist prior to construction commencing.

3.9 INTEGRATED PEST MANAGEMENT

In order to minimize impacts to existing fauna and flora, the Contractor, through the Contracting Officer, shall coordinate with the Installation Pest Management Coordinator (IPMC) at the earliest possible time prior to pesticide application. The Contractor shall discuss integrated pest management strategies with the IPMC and receive concurrence from the IPMC through the COR prior to the application of any pesticide associated with these specifications. Installation Pest Management personnel shall be given the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.9.1 Pesticide Delivery and Storage

Pesticides shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses. Pesticides shall be stored according to manufacturer's instructions and under lock and key when unattended.

3.9.2 Qualifications

For the application of pesticides, the Contractor shall use the services of a subcontractor whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.9.3 Pesticide Handling Requirements

The Contractor shall formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions and shall use the clothing and personal protective equipment specified on the labeling for use during all phases of the application. Material Safety Data Sheets (MSDS)shall be available for all pesticide products.

3.9.4 Application

Pesticides shall be applied by a State Certified Pesticide Applicator in accordance with EPA label restrictions and recommendation. The Certified Applicator shall wear clothing and personal protective equipment as

specified on the pesticide label. Water used for formulating shall only come from locations designated by the Contracting Officer. The Contractor shall not allow the equipment to overflow. Prior to application of pesticide, all equipment shall be inspected for leaks, clogging, wear, or damage and shall be repaired prior to being used.

3.10 PREVIOUSLY USED EQUIPMENT

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

3.11 MAINTENANCE OF POLLUTION FACILITIES

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

3.12 MILITARY MUNITIONS

In the event the Contractor discovers or uncovers military munitions as defined in 40 CFR 260, the Contractor shall immediately stop work in that area and immediately inform the Contracting Officer.

3.13 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.14 POST CONSTRUCTION CLEANUP

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

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SECTION 01400

SPECIAL SAFETY REQUIREMENTS

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SECTION 01400

SPECIAL SAFETY REQUIREMENTS
05/00 Rev 09/01

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.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1926	Safety and Health Regulations for Construction

ENGINEERING MANUALS (EM)

EM 385-1-1	(1996 and Changes) Safety and Health Requirements Manual

1.2 SUMMARY

1.2.1 General

This section provides guidelines for preparation of accident prevention plans, and to implement the accident prevention clause (this specification) and EM 385-1-1, Safety and Health Requirements Manual. The U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1 is available from U.S. Government bookstores operated by the Government Printing Office [and a copy is included on the CD-ROM issued with this solicitation. Changes to EM 385-1-1 applicable to this contract include only those revisions posted at the following website (all revisions up to the time this solicitation is issued): http://www.hq.usace.army.mil/soh/hqusace_soh.htm ("Changes to EM"). U.S. Government bookstores are located in most major cities including Milwaukee, Chicago, Kansas City, Denver, and Pueblo, Colorado.

1.2.2 Not Used

1.3 PRECONSTRUCTION CONFERENCE

See Contract Clause "PRECONSTRUCTION CONFERENCE". A preconstruction conference will be scheduled prior to beginning of site work. Requirements relative to planning and administration of the overall safety program will be discussed.

1.4 NOT USED

1.5 ACCIDENT PREVENTION PLAN

The Contractor shall submit, prior to the start of on site construction activity, a proposed accident prevention plan which shall be the accident prevention policy to be followed by all of the Contractor's and subcontractor's personnel and supervisory staff during performance of the work.

1.5.1 Requirements

The proposed plan shall be developed after a careful analysis of the work involved and shall be tailored specifically to the conditions of this project. The Contractor's accident prevention plan shall contain, as a minimum, the following general information or procedures for the activity indicated. The Contractor shall submit his plan for review and acceptance prior to commencing work.

1.5.1.1 Responsible Individual(s)

The Contractor shall designate an onsite employee as the individual responsible for insuring the accident prevention plan is implemented and enforced.

1.5.1.2 Subcontractor Supervision

Explain procedures to assure that subcontractor(s) fully comply with the accident prevention plan.

1.5.1.3 Indoctrination of New Employees

The plan shall include provisions for advising workers of the purpose of the accident prevention plan, specific hazards on the job and precautions to be taken, emergency procedures, information concerning tool box safety meetings, required protective equipment, cleanup rules and location of company safety rules (posting or handout).

1.5.1.4 Tool Box Safety Meetings

Hold weekly "Tool Box" safety meetings. Timely safety subjects shall be determined by a responsible individual. Employees will be informed of time, location, who will conduct, and subject. Identify procedures for including subcontractors. The Contractor shall provide a copy of the Weekly Tool Box Meeting and Monthly Supervisor's Safety Meeting to the Contracting Officer.

1.5.1.5 Fire Prevention and Protection

Identify source of fire protection. Insure adequate fire extinguishers, water barrels, or other fire-fighting equipment is located on site. Explain prevention activities to include storage areas and special hazards such as welding and use of flammable liquids, and other special hazards.

1.5.1.6 Housekeeping

Daily cleanup of all debris and waste materials is required. Adequate disposal containers should be placed strategically around the site. Debris shall be removed on a regular basis. Explain procedures that include use of barrels, dumpsters, trash chutes, etc.

1.5.1.7 Mechanical Equipment Inspection

All mechanical equipment (trucks, cranes, forklifts, backhoes, graders, etc.) shall be inspected prior to use and at fixed intervals throughout the life of the contract. Explain how inspections will be accomplished (frequency, by whom, and records to be kept).

1.5.1.8 First Aid and Medical Facilities

First aid facilities shall be made available on the job site. Arrangements for emergency medical attention shall be made prior to start of work. All emergency numbers (doctor, hospital, ambulance, fire department) shall be posted at the project superintendent's office.

1.5.1.9 Sanitation

Include provisions for toilet facilities, drinking water and washing facilities. A sufficient number of toilet facilities as specified in EM 385-1-1 shall be provided unless permission is granted to use existing facilities (portable chemical are authorized). Insure safe drinking water and individual cups are available. For the projects where corrosive or toxic materials are used, separate washing facilities are required.

1.5.1.10 Safety Promotions

The Contractor shall promote accident prevention. Identify method (posters, awards etc.).

1.5.1.11 Accident Reporting

All accidents (employee injuries, vehicle, building, or equipment damage etc.) regardless of their severity, shall be reported to the onsite government representative or to the area engineer, who in turn will advise the Contractor of forms to be submitted and timeframes.

1.5.1.12 Job Hazard Analysis

When job situations change and it is necessary to alter safety requirements, a Job Hazard Analysis will be accomplished, documented, and added as an addendum to the Accident Prevention Plan. Each Job Hazard Analysis shall include, but not be limited to, a description of the work, probable hazards related to that work and positive precautionary measures to be taken to reduce or eliminate each hazard. An example of changing situations may be new subcontractors performing work such as earth moving, trenching, concrete work, roofing, electrical, masonry etc. The onsite government representative will determine the format and amount of detail required of the written plan.

1.6 RADIOLOGICAL EQUIPMENT

In addition to any applicable Nuclear Regulatory Commission, state, local, or other federal licenses or permits, and in accordance with requirements of EM 385-1-1, Safety and Health Requirement Manual, the Contractor is required to obtain a service permit to use, store, operate, or handle a radiation producing machine or radioactive materials on a Department of Defense (DOD) Installation. The service permit shall be obtained from the appropriate U.S. Army or U.S. Air Force Command through the Contracting Officer's representative. The Contractor should notify the Contracting Officer during the prework conference if a radiation producing device will be utilized on a DOD Installation in order to determine the permit

application requirements, and allow a lead time of 45 days for obtaining a permit.

1.7 EXCAVATION AND TRENCHING

The standards for excavation and trenching are outlined in 29 CFR 1926, Subpart P. These standards shall be followed in addition to those outlined in EM 385-1-1.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

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SECTION 01451A

CONTRACTOR QUALITY CONTROL
07/01; Omaha Rev. 10/01

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740	(2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Pricing 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 10 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. The CQC Plan shall be submitted for review a minimum of 10 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Contractor 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 construction person with a minimum of 5 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

A staff shall be maintained under the direction of the CQC system manager to perform all QC activities. The staff must be of sufficient size to ensure adequate QC coverage of all work phases, work shifts, and work crews involved in the construction. These personnel may perform other duties, but must be fully qualified by experience and technical training to perform their assigned QC responsibilities and must be allowed sufficient time to carry out these responsibilities. The QC plan will clearly state the duties and responsibilities of each staff member. It is expected that the CQC staff will be of sufficient nubmer to perform concurrent QC duties at the tank and at all trenching/pipelaying sites.

3.4.4 Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered at each of the four area offices in the Omaha District according to the following revolving training schedule:

Badger Area	First Session	Between 15 & 25 April
	Second Session	Between 15 & 25 October
Point of Contact	Roy Brewer	(608) 388-4780
Black Hills Area	First Session	Between 1 & 10 March
	Second Session	Between 1 & 10 September
Point of Contact	Dwight Pochant	(605) 923-2983
Fort Crook Area	First Session	Between 15 & 25 January
	Second Session	Between 15 & 25 July
Point of Contact	Al Kreisler	(402) 293-2540

Rocky Mountain	First Session	Between 1 & 10 June
	Second Session	Between 1 & 10 December
Point of Contact	Paul Jendzejec	(719) 556-4184

The exact date and location for the sessions will be determined approximately 30 days in advance of the training. The cost of training is presently established at $25 to be paid by each student in advance of the training. For information about a particular session, the best source is the point of contact listed above.

3.4.5 Organizational Changes

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

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

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

3.6.1 Preparatory Phase

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

a. A review of each paragraph of applicable specifications, reference codes, and standards. Prior to the preparatory meeting for each definable feature of work, the Contractor shall provide all technical references (i.e. building codes, life safety codes, etc.) referenced in the project specifications for feature(s) of work being addressed at the preparatory meeting. These technical references shall be onsite and available for use by Contractor and Government personnel before the preparatory meeting is held and maintained until the feature(s) of work is/are accepted by the Government.

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 the actual cost for the recheck 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 Resident or Area Office (as directed).

Coordination for each specific test, exact delivery location, and dates will be made through the Resident or Area (as directed) 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 Contracting Officer's Representative on the first day following the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

Sample forms enclosed at the end of this section.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

_____
(FIRM NAME)

DAILY QUALITY CONTROL REPORT

Daily Report No.: _____ DATE: _____
Contract No. _____
Project Title & Location:
_____
Weather: ____ Precipitation: _____ in. _____ Temp:____ Min. ____ Max. ____

1. Contract/Subcontractors and Area of Responsibility:

NUMBER:	TRADE	HOURS	EMPLOYER	LOCATION/DESCRIPTION WORK

2. Operating Plant or Equipment. (Not hand tools)

Plant/Equipment	Date of Arrival/Departure	Date of Safety Check	Hours Used	Hours Idle	Hours Repair

3. Work Performed Today: (Indicate location and description of work performed by prime and/or subcontractors. When network analysis is used, identify work by NAS activity number).

_____
_____
_____
_____
_____
_____
_____
_____

4. Control Activities Performed:
   Preparatory Inspections: (Identify feature of work and attach minutes).
   Initial Inspections: (Identify feature of work and attach minutes).
   Follow-Up Inspections: (List inspections performed, results of inspection compared to specification requirements, and corrective actions taken when deficiencies are noted).

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5. Tests Performed and Test Results: (Identify test requirement by paragraph number in specifications and/or sheet number in plans).

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_____

6. Material Received: (Note inspection results and storage provided).

_____
_____
_____
_____
_____
_____

7. Submittals Reviewed:

(a) Submittal No.	(b) Spec/Plan Reference	(c) By Whom	(d) Action

8. Offsite Surveillance Activities, Including Action Taken:

_____
_____
_____
_____
_____
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_____
_____

9. Job Safety: (List items checked, results, instructions and corrective actions taken).

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_____

10. Remarks: (Instructions received or given. Conflict(s) in Plans and/or specifications. Delays encountered.).

_____
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_____
_____
_____

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as may be noted above.

_____
CQC System Manager Date

-- End of Section --

ATTACHMENT NO. 1

RESERVED

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<u>ATTACHMENT NO. 2</u>
GEOTECHNICAL INFORMATION

- **Preliminary Soils and Foundation Report Information**
- **Soils Information Report Addendum**
- **Geotechnical Analysis Criteria**

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PRELIMINARY SOILS AND FOUNDATION INFORMATION
WATER STORAGE TANK AND DISTRIBUTION SYSTEM UPGRADE
UNITED STATES AIR FORCE ACADEMY, COLORADO

1. Scope

The results of the field investigation for the new water tank and distribution system upgrade project at the Air Force Academy are presented in this report. Laboratory testing is currently underway to determine soil classifications. The information contained in this report was obtained from borings performed near the tank location and from test pits dug along the distribution line routes. Final laboratory information will be presented following receipt of the lab testing, however no significant changes are anticipated. It is the author's understanding that the information contained in this report will be viewed as preliminary and final design will be based on a subsurface investigation performed by the Contractor.

2. Proposed Construction

This project involves the construction of a new water tank near an existing one located on one of the foothill ridges within the Academy. The tank will be constructed near grade and subsequently buried with soil. A new water distribution pipe will be constructed from the tank, down the hillside and along Academy, Cadet and Faculty Drives. These routes follow existing distribution lines.

3. Subsurface Investigations

3.1. General

The field investigation for the water tank and distribution lines was started on 16 November 2001 and consisted of two borings numbered AF01-1 and AF01-2, and four test pits numbered AFTP01-3 through AFTP01-6. Due to delays in obtaining digging clearance for the pits they were not completed until 29 November. An Omaha District drill crew performed the drilling; the test pits were dug with a backhoe and an operator provided by the installation. A corps field geologist performed the logging. The borings were advanced with a Gus Pech 1100C truck-mounted soil-sampling rig using 4.25-inch inside-diameter (I.D.) hollow stem augers. Both borings were drilled to a depth of 25 feet.

Borings locations were chosen by the corps geotechnical engineer and located and staked in the field by the Corps of Engineers Core Drill Crew. Because of obstructions (trees and boulders), access to the original boring locations was not possible and they had to be offset approximately 200 feet (field geologist's estimate). Base personnel provided utility clearances.

3.2. Standard Penetration Tests

Standard penetration tests were taken in all borings at depth intervals of 2.5 feet for the first 10 feet and every 5 feet for the remaining depth of the boring. The standard penetration samples were obtained in accordance with ASTM D 1586-99 "Penetration Test and Split-Barrel Sampling of Soils", using a 140-pound automatic trip hammer.

3.3. Disturbed Sampling

Representative disturbed samples of the subsoils were taken with a 2.0 - inch O.D. standard steel split spoon sampler using a 140 pound automatic SPT hammer, in accordance with ASTM D 1586-99. Samples were collected every 2.5 feet for the first 10 feet, then every 5 feet for the remaining depth of the hole. Samples were placed in a pint jar and the lid sealed airtight with at least three wraps of electrical tape. Each jar was labeled, denoting the hole number, sample number, depth of sample, date collected, and the project name. The jars were placed in wooden boxes that were subsequently labeled with the appropriate project information.

3.4. Undisturbed Sampling

Due to the granular nature of site soils, undisturbed sampling was not possible.

4. Laboratory Testing

Samples were hand carried to the Omaha District Quality Assurance Facility and transferred to the Terracon Inc. laboratory in Omaha for testing. Tests were performed to determine visual classification, Atterberg Limits, grain size distribution, natural moisture content, sulfate ion content, soil pH and soil resistivity. All tests were conducted in accordance with EM 1110-2-1906 "Laboratory Soils Testing".

Based upon the results of the testing program, the field logs were revised and supplemented as shown on the boring logs. These final logs represent an interpretation and compilation of the content of the field logs and the results of the laboratory tests of the field samples. The stratification lines shown on the boring logs represent the approximate boundaries between soil types and may be gradual. Boring logs are included in the project drawings and are available from the Geotechnical Branch, Soils Section A, of the Omaha District.

5. Site Conditions

5.1. General Geology

The U.S. Air Force Academy is located along the western margin of the Colorado Piedmont Section of the Great Plains Physiographic Province. The section is characterized as an old erosional surface with broadly rolling to scarped, steeply sloping topography. The Rocky Mountains form the western margin of this region. Uplift of the mountains resulted in faulting and folding of adjacent sedimentary formations. Denudation of the igneous core of the mountains (primarily granite) resulted in the subsequent aggradation of numerous pediments along their front. These pediments consist of silty sand and gravel with occasional boulders in the lowermost pediments, increasing in frequency toward the upper ones. Underlying these sediments is the Dawson Formation, which comprises bedrock in the area. The Upper Dawson Formation consists of arkosic conglomerate, sandstone, siltstone and claystone. These beds are light gray, pink or light reddish brown. Individual beds vary in both thickness and consistency throughout the formation.

5.2. Site-Specific Geology

Based on visual descriptions the soil types present at the tank site consist of non-cohesive outwash eroded from the mountains. Silty or clayey sand (SM and SC, respectively)

The test pits encountered mainly sand with clay, however rocks up to 12 inches in diameter were found. Photos of the test pits and soil removed from them are attached at the end of this report.

5.3. Ground Water

Ground water was not encountered in either of the borings nor in the test pits along the pipe line routes. Ground water is not expected given the elevated position of the site and the free-draining soils. Ground water at the installation is typically encountered near the contact with bedrock, generally at approximately 50 feet or greater below the surface in the developed part, and likely at greater depth below the ridges.

5.4. Seismic Evaluation

The Air Force Academy has a spectral response acceleration for short periods (0.2 second) of 0.09g, and a 1.0-second spectral response of 0.058g. These values were derived using guidance from the U.S. Army Corps of Engineers Technical Instructions "Seismic Design for Buildings" TI 809-04, dated 31 December 1998, and the Federal Emergency Management Agency (FEMA) publication "NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures, 1997 Edition". Both accelerations were interpolated from 1:5,000,000 scale maps prepared by the U.S. Geologic Survey (USGS), Building Seismic Safety Council (BSSC), and FEMA for 0.2 Sec. Spectral Response Acceleration (5% of Critical Damping), Site Class B, and 1.0 Sec. Spectral Response Acceleration (5% Critical Damping), Site Class B, respectively. The spectral response accelerations taken from these maps must be adjusted for site class effects using coefficients provided in the aforementioned guidance. For design purposes, the reference site condition is taken as National Earthquake Hazards Reduction Program (NEHRP) site class D.

6. <u>Subsurface Recommendations</u>

6.1. General

Based on visual description, soils at the project site consist primarily of granite-derived sand and gravel with varying, but generally small, amounts of silt and clay. Boulders were present at the surface at the boring locations and at the tank location according to the field geologist. Soils at the test pit locations consisted mainly of sand with clay. Rocks up to 12 inches in diameter were encountered.

6.2. Foundation Recommendations

6.2.1. Water Storage Tank

The subgrade for the storage tank should present no particular difficulties with regard to its foundation if the boulders are removed and the near surface soils are compacted to the density recommended herein.

An analysis was performed to estimate the allowable bearing pressure based on Standard Penetration Test results. The analysis predicted an allowable pressure of 4400 psf. With a maximum depth of 20 feet the water column will exert a pressure of 1250 psf. Assuming the tank is buried to a depth of 5 feet, the soil column pressure is approximately 550 psf. It is assumed that both of these loads will be transmitted to the base of the tank and act on the entire basal area. This leaves a maximum of 2600 psf available for the empty structure - well in excess of what the tank itself will exert. Based on these pressures it is recommended that individual spread footings be designed for a maximum allowable bearing pressure of 2600 psf. This value represents the maximum bearing pressure at the base of the footings in excess of that due to existing surrounding overburden. An additional pressure of 1800 psf will be superimposed on the area by the water and soil columns. If the depth of fill on top of the tank exceeds 5 feet the allowable bearing pressure should be reduced by 110 psf for each foot of fill beyond 5 feet.

The soil below footings and slabs should be removed to a depth of 2.0 feet and compacted to not less than 95 percent of maximum Modified density. Cobbles and boulders should not be left in place within 2.0 feet of the base of slabs or footings. If rock is encountered it should be either removed and the void filled with soil compacted to the above density, or a portion removed so that the top surface of the rock is at least 2.0 feet from the footing or slab. Rocks larger than 3.0 inches in any dimension should not be used as backfill under or against the tank.

Maximum frost penetration at the Air Force Academy is listed in AFM 88-3, Chapter 1 as 38 inches. Since the tank will be buried frost penetration will not be a concern for the foundation.

6.3. Slabs on Grade

Slabs on grade in this soil type would normally be designed for a modulus of subgrade reaction "K" of 250 pci (without frost penetration). A vapor barrier would not be required for this application as the tank is assumed to be water-proof.

6.4. Pavement Design

No pavements are indicated in the project.

6.5. Settlement

Based on the Standard Penetration Test analysis total settlement of spread footings should not exceed 1.5 inch under the outlined loading conditions. Settlement of the tank floor should not exceed 1.0 inch under the same conditions. Therefore, differential settlement should not exceed 0.50 inch under such conditions.

6.6. Cementing Properties

Sulfate ion content tests are being performed on representative samples from site soils. Based on past experience at the installation, sulfate ion content

is expected to be low enough that sulfate-resistant cement will not be needed. Final design criteria will be provided when test results are available.

Due to the potential for alkali-aggregate reactivity within the boundaries of the Omaha District, cement meeting the optional chemical requirements for low alkali cement on Table 2, ASTM C 150 will also be specified for all concrete. The Resource Conservation Recovery Act (RCRA) mandates, where possible, all concrete specifications will also include the option to use pozzolan as a partial replacement for portland cement.

6.7. Corrosion Potential

Soil resistivity tests are being performed on representative samples from site soils. Test results have not been obtained; however, based on past experience at the installation and with similar soil types it is anticipated that a "mild" corrosion potential exists. Final design criteria in accordance with corrosion classifications in the Department of the Army TM 5-811-4 (17 March 1965), "Electrical Design, Corrosion Control", will be provided when test results are available.

6.8. Lateral Earth Pressure

The in situ soils have a density of approximately 110 pcf and an angle of internal friction of approximately 34 degrees. Based on these data the following lateral earth pressures would be predicted, an active coefficient of 0.28, a passive coefficient of 3.5 and an at-rest coefficient of 0.44. A coefficient of friction of soil against formed concrete of 0.35 is typical.

6.9. Water Distribution Lines

Exact conditions between test pits are not known, but are assumed to be similar to those encountered at the pits. Since existing lines are present it is reasonable to believe that installation of new lines adjacent to them will not require unusual procedures. In some cases the test pit walls were unstable, and excavations may require shoring to prevent cave in. Based on the description of soils in the pits lateral earth pressure coefficients outlined in section 6.8 would be appropriate. Ground water was not encountered within the 8-foot depth of exploration. If ground water is encountered during excavation it is almost certainly the result of leaks in the existing lines.

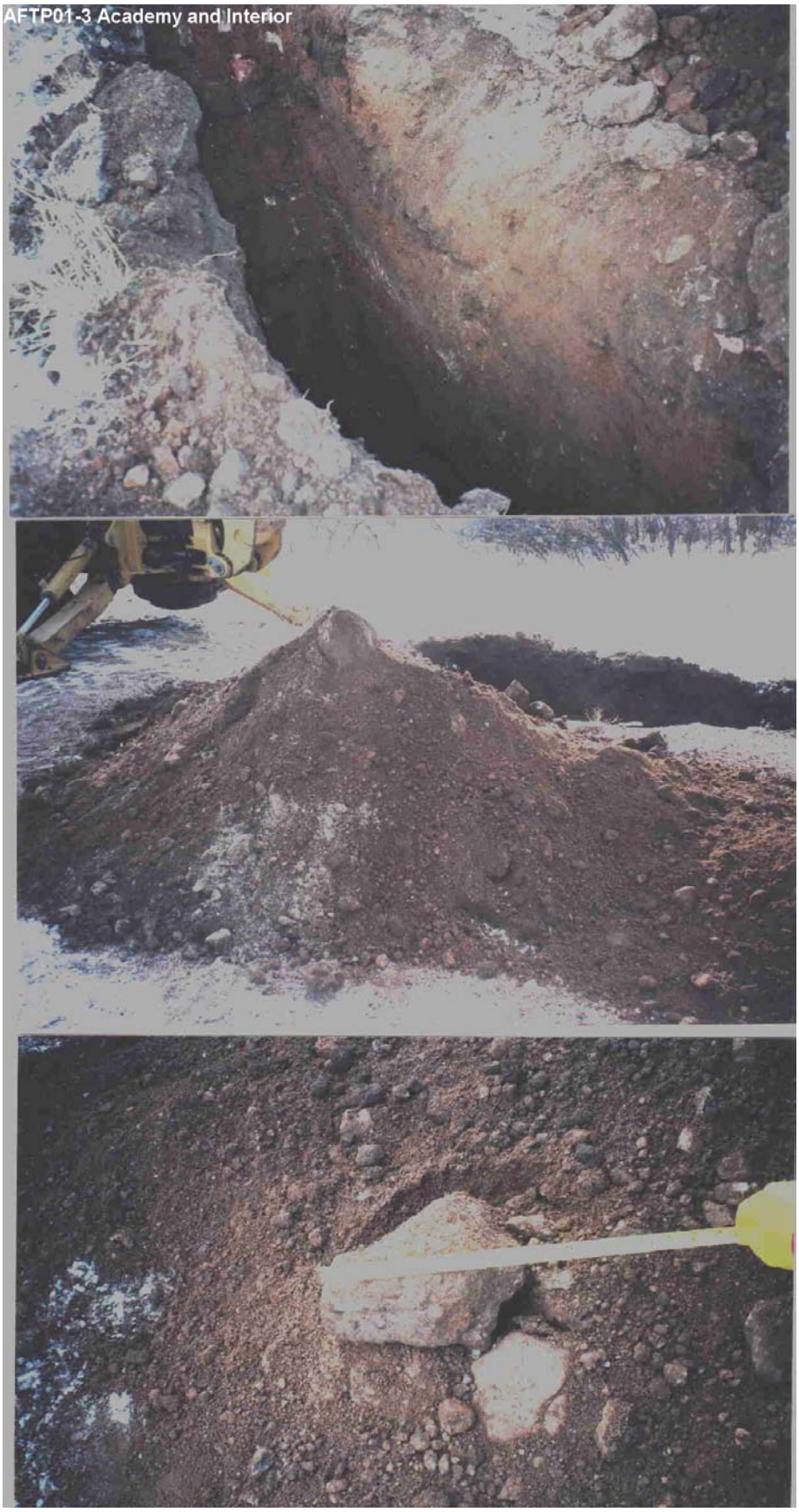
The attached photos show the test pits and soil.
AFTP01-3 at the intersection of Academy Drive and Interior Drive
AFTP01-4 at the intersection of Interior Drive and Faculty Drive
AFTP01-5 along Faculty Drive south of Building 2348
AFTP01-6 in the road cut along Academy Drive south of the intersection with Cadet Drive.

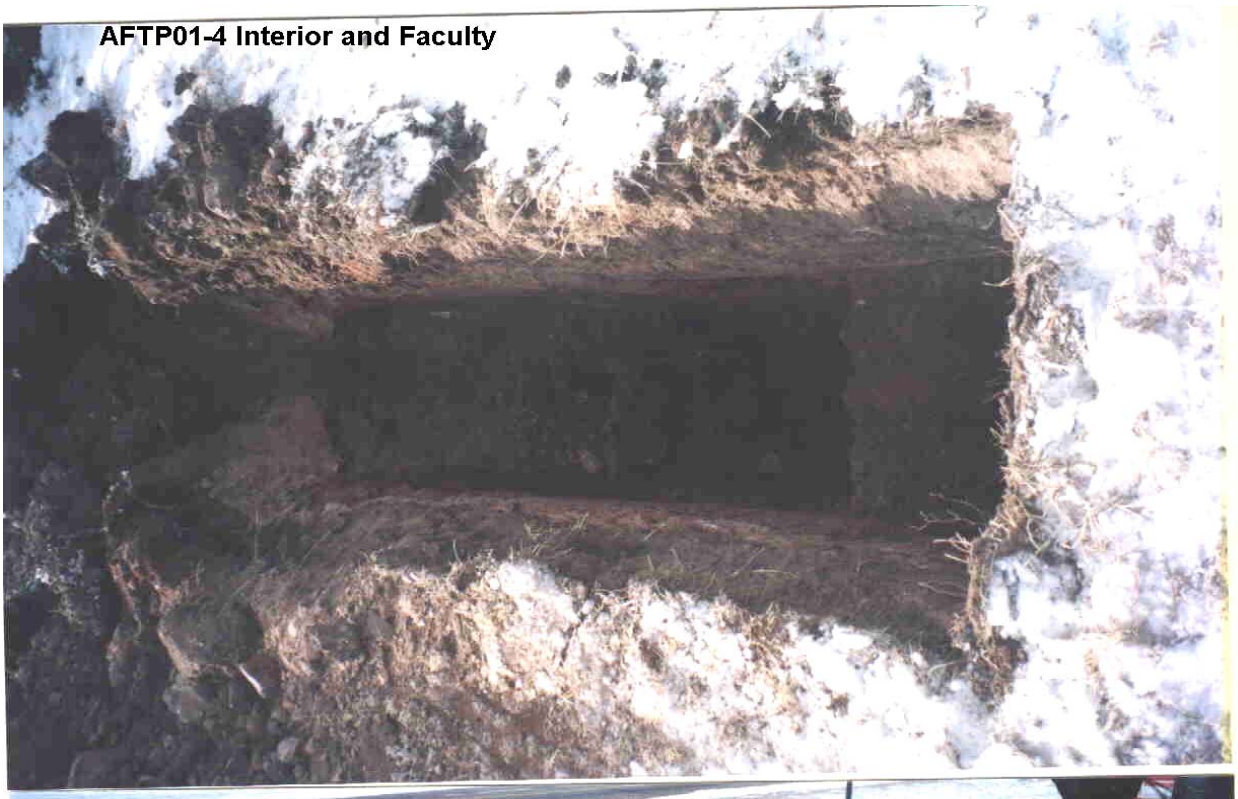
7. Construction Considerations

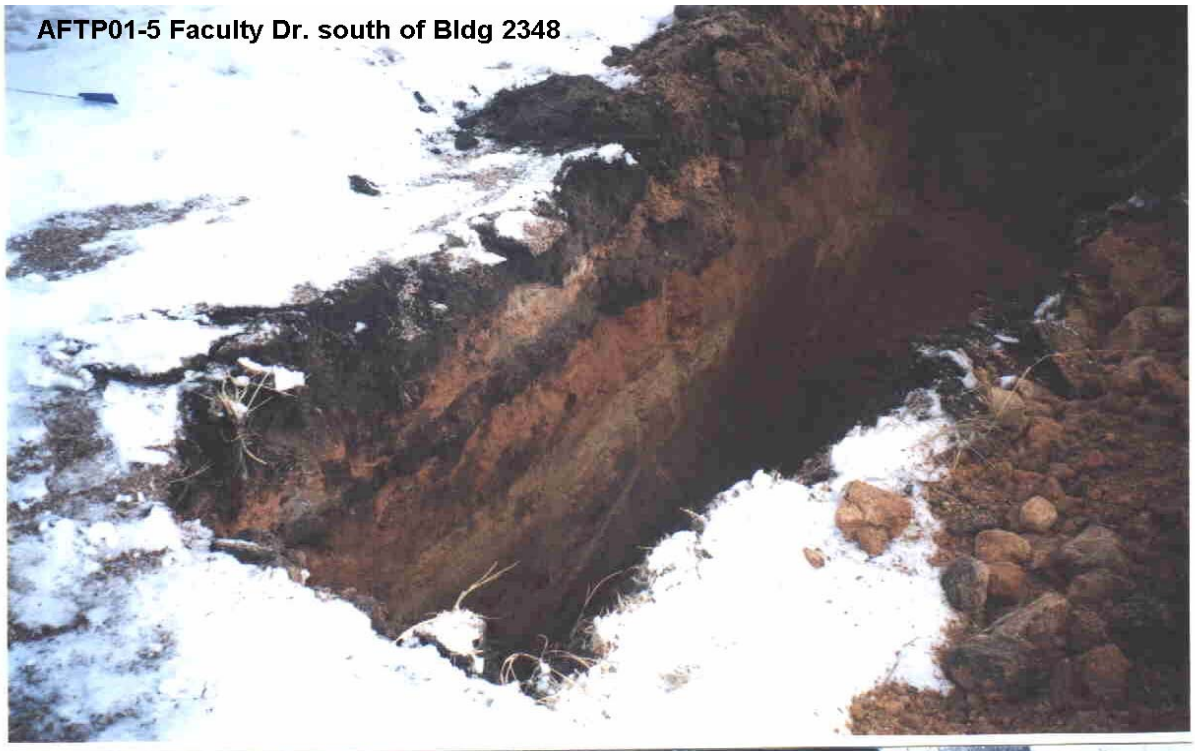
Cobbles and boulders are visible at the surface at the tank site and no doubt are present in the subsurface as well. Although refusal was not encountered

at the drilling sites, it is unknown what the exact rock conditions are at the tank site. It should be expected that boulders will make excavation difficult. Numerous trees were present at the site as well.

The Base directed that no subsurface investigations were to be conducted between the new tank location and where the new distribution line intersects Academy Drive. Thus the author is unaware of the soil and rock conditions on the hillside that the line traverses.


AFTP01-3 Academy and Interior


AFTP01-4 Interior and Faculty


AFTP01-5 Faculty Dr. south of Bldg 2348

AFTP01-6 Academy south of Cadet Dr.

SUBJECT: Preliminary Soils and Foundation Information for the Water Storage Tank and Distribution System Upgrade Project at the United States Air Force Academy, Colorado

1. Enclosed is the Preliminary Soils and Foundation Information report for the design of the Water Storage Tank and Distribution System Upgrade project at the Air Force Academy, Colorado.

2. Questions regarding this report may be directed to Gordon Lewis, CENWO-ED-GA, (402) 221-4306.

Encl
as

JOHN W. MONZINGO, P.E.
Chief, Geotechnical Engineering
and Sciences Branch

Lewis/ggl/4306

Rouse/CENWO-ED-GG

Skeen/CENWO-ED-GG

Ray/CENWO-ED-GA

Monzingo/CENWO-ED-G

CENWO-ED-GA 20 December 2001

MEMORANDUM FOR CENWO-PM-M (Hodges)

SUBJECT: Preliminary Soils and Foundation Information for the Water Storage Tank and Distribution System Upgrade at the United States Air Force Academy, Colorado

1. Enclosed is the Preliminary Soils and Foundation Information report for the design of the Water Storage Tank and Distribution System Upgrade project at the Air Force Academy, Colorado.

2. Questions regarding this report may be directed to Gordon Lewis, CENWO-ED-GA, (402) 221-4306.

Encl
as

JOHN W. MONZINGO, P.E.
Chief, Geotechnical Engineering
and Sciences Branch

CF: CENWO-ED-DF

CENWO-ED-GA (415-10f) 30 January, 2002

MEMORANDUM FOR

CENWO-PM-M (Hodges)

SUBJECT: SOILS INFORMATION REPORT ADDENDUM: SOIL RESISTIVITY, pH, SULFATE ION CONTENT
Project: WATER DISTRIBUTION SYSTEM
Project Location: UNITED STATES AIR FORCE ACADEMY, COLORADO

1. This Addendum reports the results of soil resistivity, pH, and sulfate ion content tests performed on samples obtained during the subsurface investigation. These results are intended as preliminary information. Cathodic protection requirements should be based on the results of the final investigation performed by the Contractor.

2. Sample AF01-1 D-3 was reported to have a soil resistivity of 4350 ohm-cm, a pH of 7.0 and a sulfate ion content of 19 mg/L. Sample AF01-1 D-5 had a soil resistivity of 2660 ohm-cm, a pH of 7.3 and a sulfate ion content of 12 mg/L. Refer to the soil boring logs for the locations of the samples. The resistivity values are somewhat anomalous for the installation; values are typically higher than these results. However the test method utilizes a saturated paste that yields lower values than does dry analysis. The sulfate ion content results are typical for the installation.

3. Foundations & Materials Contact/Ext.: Gordon G. Lewis 402 221-4306

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U.S. ARMY ENGINEER DISTRICT, OMAHA
CORPS OF ENGINEERS

GEOTECHNICAL ANALYSIS CRITERIA

UNITED STATES AIR FORCE ACADEMY
UPGRADE WATER DISTRIBUTION SYSTEM

(From Chapter 4, Omaha District Design Guide)

(INDEX)

1. GENERAL
2. EXPLORATIONS
3. SAMPLING
4. TESTING
5. GEOTECHNICAL REPORT
6. DRAWINGS
7. COMMON DEFICIENCIES
8. REVIEW PROCEDURE
9. EXAMPLE INVESTIGATION SCOPE

Attachment No. 2
Geotechnical Analysis
Criteria

OMAHA DISTRICT DESIGN GUIDE

CHAPTER 4

GEOTECHNICAL ANALYSIS

1. GENERAL. This scope of work involves subsurface explorations (soil borings, test pits, etc.) for structural foundations and water pipe design and installation. This scope presents general instructions for conducting investigations for Government projects and fewer or additional requirements may be required depending on the design needs of the Contractor. An example scope is presented at the end of this chapter. Soil sampling, laboratory testing, analyses and presentation of the subsurface information on 100% (final) drawings is also discussed. Prior to commencing a subsurface investigation, the designer shall submit a proposed soil boring and/or test pit location plan and laboratory testing program for review to this office (Omaha District Corps of Engineers, 106 S. 15th Street, Omaha, NE 68102-1618, Attn: Geotechnical Branch, CEMRO-ED-GA). Reference paragraph REVIEW PROCEDURES for additional information.

The designer shall be responsible for obtaining all utility clearances and a digging permit prior to subsurface work. In addition, the designer shall arrange for security clearances and escorts, if required. If contaminated material is suspected in the investigative area, no subsurface investigation shall be commenced under this scope of work and the Omaha District (reference address above) shall be contacted immediately.

2. EXPLORATIONS. In general, explorations shall consist of machine-powered soil borings or test pits dug with a backhoe or similar equipment. Soil borings shall be made with a drill rig capable of recovering undisturbed samples at least \~3 inches~\\^76 mm^\ in diameter for testing purposes. The depth and number of borings or test pits shall depend on the size and function of the building(s), the anticipated structural loads or design requirements of the project and the complexity of site geology. Soil borings for structures founded at shallow depth shall be advanced to a minimum of \~20 feet~\\^6 m^\. For structures founded at greater depth the minimum depth of borings shall depend on the type and loading of foundation members. The proposed depths shall be included in the investigation scope submitted under paragraph 1 GENERAL. Soil borings for utilities shall be advanced to a minimum depth of \~10 feet~\\^3 m^\ below proposed final grade. Supplemental investigations (e.g. geophysical surveys, trenching, cone penetrometer) may be utilized. The Contractor assumes responsibility for the suitability of the method to provide the information needed for design.

3. SAMPLING. If contaminated material is encountered during any sampling procedure, the investigation shall cease and the Geotechnical Branch (see address in paragraph 1) shall be contacted before further sampling occurs.

3.1. DISTURBED SAMPLES. Disturbed samples typically consist of jar or bulk (bag) samples. Additional means of collecting samples may be employed as warranted.

3.1.1. Jar Samples. Disturbed (jar) samples shall be obtained from split-spoon samplers during standard penetration tests. Standard penetration tests shall be made in all borings in accordance with ASTM D 1586. Standard penetration tests shall be taken every \~2.5 feet~\\^0.76 m^\ for the first \~10 feet~\\^3 m^\, then every \~5 feet~\\^1.5^\ for the remaining depth of the borings, or as required to fully characterize the site. No standard penetration test shall bottom within \~0.5 foot~\\^0.15 m^\ of a potential undisturbed sample zone. If more than one material type is encountered from a split-spoon sample interval, one jar sample shall be obtained of each material type. Jar samples shall be sealed airtight for moisture retention and shall be labeled with the following information: Project name and location; boring or test pit number; sample number; depth; material classification; date; and sampler's initials. When jar samples are obtained for Government use in quality assurance testing or for other purposes, jars shall be \~1-pint~\\^0.5 liter^\ in volume. If no Government QA jars are obtained, sample size shall be sufficient to allow the required tests to be performed; one pint is recommended.

3.2. UNDISTURBED SAMPLES. Representative undisturbed three or five-inch diameter Shelby tube samples shall be taken of representative cohesive soil layers if needed for the Contractor’s design. In most instances 3-inch tubes will be sufficient, however depending on site soils, 5-inch tubes may be required to obtain good-quality samples. Standard penetration tests shall not be taken within \~0.5 foot~\\^0.15 m^\ of an undisturbed sample interval. If the material encountered is not conducive to undisturbed sampling, standard penetration tests shall be taken instead. Shelby tube sampling shall meet requirements of ASTM D 1587.

3.3. REFUSAL. If refusal is encountered during drilling or sampling, an attempt shall be made to identify the material or object causing the refusal (bedrock, boulder, etc).

3.4. FIELD LOGS. A complete and accurate field log for each boring shall be prepared on Standard Corps of Engineer log forms (ENG Form 1836). Each log shall include the following information as a minimum:

- Name of project
- Boring or test pit number
- Type of exploration performed (e.g. boring with \~4.25"~\\^108 mm^\ inside-diameter hollow-stem augers)
- Diameter of boring or dimensions of test pit
- Description of drill rig or other machinery used
- Size and type of bit used
- Location (depth) of each sample
- Standard penetration test numbers
- Water level information (include time-lapse between completion of drilling and measurement)
- Description of all materials encountered
- Description and sketch showing any offset of the boring from the original location

Soil materials shall be classified using the Unified Soil Classification System. Soil descriptions shall follow ASTM D 2488. Rock descriptions shall follow the nomenclature prescribed in ASTM C 294, or as specified in the project Scope of Services if different. Material descriptions shall include

visual classification, consistency, plasticity, moisture content and color, as a minimum.

3.5. GROUND WATER DATA. Ground water information shall be recorded during all subsurface explorations. The depth at which water is first encountered and the water level at completion of each boring or test pit shall be recorded on the field logs. If there are indications of ground water within the boring, it shall be left open for at least 24 hours following completion at which time a final water level measurement shall be taken just prior to backfilling. Borings shall be protected from surface water run-in during the time they are open, and covered to prevent endangering persons. Water levels shall be noted during excavation and immediately following completion of test pits, 24-hour water level readings in the pits are not required unless requested by the designers.

3.6 BACKFILLING. Backfill for borings shall consist of drill cuttings unless state regulation or Base preference requires grout or other materials. The designer shall coordinate with the Base Point of Contact (POC) to ensure compliance with all requirements. Backfilling shall be accomplished in such a manner that settlement of backfill sufficient to pose a safety hazard does not occur. The designer shall be responsible for immediately correcting any conditions resulting from their operations which pose a safety hazard in the opinion of the Government Representative or Base POC. Excess drill cuttings shall be disposed of as approved by the Government Representative or Base POC.

3.7. TRANSPORTATION. Samples shall be delivered in accordance with ASTM D 5079 to a laboratory approved by the Corps of Engineers or a nationally recognized accrediting organization.

3.8. SITE RESTORATION. Upon completion of work, the designer shall return the site to a condition satisfactory to the Government Representative or Base POC before departing the site.

3.9. SAFETY. The designer shall comply with all applicable safety requirements and the Corps of Engineers Safety Manual (EM 385-1-1) dated October 1992.

4. TESTING. Laboratory testing of disturbed and undisturbed samples shall be required to determine engineering characteristics for structural foundation and pavement design. The designer shall determine what testing he requires to fully support the geotechnical aspects of the project.

4.1. DISTURBED SAMPLES. Testing for disturbed samples shall consist of moisture content; classification; resistivity; pH and sulfate ion content, and other testing needed by the designer to fully characterize the site. Classification tests shall include visual, mechanical analyses (including hydrometer as applicable) and Atterberg limit tests. Testing and classification of soils shall be in accordance with the Unified Soil Classification System described in ASTM D 2487. Testing for mechanical analysis and Atterberg Limits shall be done in accordance with ASTM D 422 and ASTM D 4318, respectively. Samples may be grouped visually by appearance with mechanical analysis and Atterberg limits performed on each group. In addition, a representative number of samples shall be tested for soil resistivity, pH and sulfate ion content. Soil resistivity shall be determined in accordance with ASTM G 57, laboratory soil-box method or Wenner four-

electrode array field method. Soil pH shall be determined in accordance with ASTM G 51. Sulfate ion content shall be determined in accordance with CRD C 403.

4.2. UNDISTURBED SAMPLES. Testing for undisturbed samples shall include moisture content; classification; unconfined compressive strength; unconsolidated undrained compressive strength; consolidation; and swell characteristics, as applicable for the material type and information required for design. Unconfined compressive strength; unconsolidated undrained compressive strength; consolidation and swell tests shall be made in accordance with ASTM Standards D 2166, D 2850, D 2435 and D 4546, respectively. Testing shall be performed in sufficient detail to adequately determine the supporting capacity and foundation characteristics of soil beneath structures, pavement and railroads. Classification tests shall consist of visual, mechanical analyses (including hydrometer as applicable) and Atterberg limit tests in accordance with ASTM publications referenced in the preceding paragraph. The designer shall be responsible for determining what information is required to support his design.

5. GEOTECHNICAL REPORT. The geotechnical report shall be based on field observations and laboratory test results of field samples. The report shall document the methods used in arriving at all geotechnical design parameters. A brief discussion of the studies or analyses prepared by the geotechnical engineer to aid in establishing design parameters shall be included in the report. For larger structures, alternative foundation systems shall be presented if more than one system will economically perform the task. Allowable soil bearing values shall be determined for all foundation elements. Soil bearing values shall safely carry the total load with an appropriate factor of safety applied for subsurface variations, construction considerations and other influencing factors. Laboratory test results shall be available or included in the report as an appendix. Each report shall be prepared with consideration given to the following format:

1. Project Scope
2. Proposed Construction
3. Field Investigation
4. Laboratory Testing
5. Site Conditions (geology, ground water, seismic considerations, etc.)
6. Foundation Recommendations (excavation considerations, allowable bearing capacities and other soil parameters for structural foundation, pavement and railroad design)
7. Construction Considerations

Appendices

6. DRAWINGS. The designer shall provide soil boring or test pit logs that depict both field observations and results of laboratory testing on the 100% (final) drawings. Soil boring or test pit locations shall also be shown on the 100% drawings, preferably on the site plan where exploration locations may be referenced to structural features of the project. Elevations of the top of borings and the water table, if encountered, shall be shown on the drawings if they are known. If not known they shall be referenced to the existing ground surface. If feasible, a schematic sketch of new structures with foundation depths noted shall be shown on the boring logs; thus indicating required cut and fill and soil strata on which foundation elements will bear. The level of

drawing presentation for soil borings logs is as shown on the sheet titled "SOIL BORING LOGS AND LOCATION MAP" in the Example Drawing Package.

7. COMMON DEFICIENCIES.

7.2. Failure to incorporate information obtained during the geotechnical investigation into the plans and specifications.

7.3. An inadequate number of, or depth of borings to characterize the site.

7.4. Failure to conduct a sufficient number of field and laboratory tests by prescribed ASTM standards to accurately characterize subsoils for design purposes.

7.5. Failure to accurately note top of bedrock, refusal, ground water elevations, and depth of unsuitable soil layers on field logs and on 100% (final) drawings.

7.6. Incomplete geotechnical calculations as back-up for specific geotechnical recommendations.

7.7. Use of incorrect format for soil boring or test pit logs (i.e. soil descriptions, standard penetration blow counts, laboratory data, ground water information). Reference the SOIL BORING LOGS AND LOCATION MAP included in the Example Drawing Package.

7.8. Incorrect field sampling methods and material handling techniques.

8. REVIEW PROCEDURES.

8.1. The designer shall submit a proposal that outlines the extent of the geotechnical investigation. The proposal shall include approved site and floor plans on which boring locations are identified and depths specified. Sampling intervals shall be included, along with a summary of proposed field and laboratory testing. The proposal shall address prominent geotechnical features of the project and shall be submitted for approval to the Omaha District (reference paragraph 1 for address) at least 7 days prior to commencing field work. The designer may contact David Ray or the project geotechnical engineer from the Omaha District Geotechnical Branch for clarification of this document. Mr. Ray may be reached by telephone at (402) 221-4493.

8.2. Deliverables submitted by the designer typically include the complete geotechnical report with appropriate calculations, project field logs, and the completed soil boring or test pit logs on 100% (final) drawings. The 100% drawings shall include soil boring locations which may be shown on the site plan. This submittal shall be reviewed for completeness and approved by the Omaha District (reference paragraph 1 for address) prior to completion of 100% (final) design.

9.0 EXAMPLE SCOPE.

The example scope is outlined in the Preliminary Soils and Foundation Information report and was based on past experience at the base and on the

need to generate site information for the Request For Proposal (RFP) stage of the project. The investigation scope required to provide the information the design-build Contractor needs for final design of the entire project is his responsibility.

The proposed site for this project is in an area that may present specific geotechnical difficulties based on previous experience, the main one being cobbles and boulders at the surface and in the subsurface. The water storage tank location in its present condition is not easily accessible to heavy equipment if at all. As noted in the Preliminary Site and Foundation Information report the drill rig was unable to reach the site and the borings had to be offset approximately 200 feet. While this yields useful information, the bedrock and overburden conditions at the tank site itself may be different. Therefore the investigation for final design should be conducted within the tank footprint and accomplishing this will likely mean that trees and boulders will have to be removed.

Investigations on and in the hillside from the storage tank to the intersection with Academy Drive were beyond the scope of the preliminary report; a limited investigation was performed at four locations within the developed part of the installation. The Contractor must satisfy himself with regard to gaining sufficient knowledge of the subsurface conditions along the water distribution system route.

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ATTACHMENT NO. 3

INDEX OF UNIFIED FACILITIES GUIDE SPECFICATIONS (UFGS)

This includes UFGS specifications referenced and other UFGS specification sections required in developing the project specifications. Available sections are included on the CD-ROM is with this solicitation (In Specsintact Software). Directory on CD-ROM is "Guides".

List of available UFGS Sections is attached.

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01270A 02/94 MEASUREMENT AND PAYMENT
01310N 09/01 ADMINISTRATIVE REQUIREMENTS
01312A 08/01 QUALITY CONTROL SYSTEM (QCS)
01320A 08/01 PROJECT SCHEDULE
01320N 12/01 CONSTRUCTION PROGRESS DOCUMENTATION
01321N 09/00 NETWORK ANALYSIS SCHEDULES (NAS)
01330 09/01 SUBMITTAL PROCEDURES
01351A 01/01 SAFETY, HEALTH, AND EMERGENCY RESPONSE (HTRW/UST)
01355 10/00 ENVIRONMENTAL PROTECTION
01356A 08/96 STORM WATER POLLUTION PREVENTION MEASURES
01415 09/01 METRIC MEASUREMENTS
01420 12/01 SOURCES FOR REFERENCE PUBLICATIONS
01450A 10/97 CHEMICAL DATA QUALITY CONTROL
01450N 12/01 QUALITY CONTROL
01451A 07/01 CONTRACTOR QUALITY CONTROL
01452A 11/99 SPECIAL INSPECTION FOR SEISMIC-RESISTING SYSTEMS
01500A 02/97 TEMPORARY CONSTRUCTION FACILITIES
01500N 12/01 TEMPORARY FACILITIES AND CONTROLS
01525N 12/01 SAFETY REQUIREMENTS
01572 10/01 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT
01575N 12/01 TEMPORARY ENVIRONMENTAL CONTROLS
01580N 12/01 PROJECT IDENTIFICATION
01670 12/01 RECYCLED / RECOVERED MATERIALS
01770N 08/01 CLOSEOUT PROCEDURES
01780A 11/99 CLOSEOUT SUBMITTALS
01781 12/01 OPERATION AND MAINTENANCE DATA
01810A 08/01 COMMISSIONING AND DEMONSTRATION FOR SOIL VAPOR EXTRACTION (SVE) SYSTEMS
01830A 08/01 OPERATION, MAINTENANCE, AND PROCESS MONITORING FOR SOIL VAPOR EXTRACTION (SVE) SYSTEMS

DIVISION 02 - SITE WORK

02111 09/01 EXCAVATION AND HANDLING OF CONTAMINATED MATERIAL
02115A 12/97 UNDERGROUND STORAGE TANK REMOVAL
02115N 09/99 REMOVAL AND DISPOSAL OF UNDERGROUND STORAGE TANKS
02120A 10/96 TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS
02140A 12/99 SELECT FILL AND TOPSOIL FOR LANDFILL COVER
02150A 08/98 PIPING; OFF-GAS
02151A 03/99 SOIL WASHING THROUGH SEPARATION/SOLUBILIZATION
02160a 10/00 SOLIDIFICATION/STABILIZATION (S/S) OF CONTAMINATED MATERIAL
02180a 09/98 REMEDIATION OF CONTAMINATED SOILS AND SLUDGES BY INCINERATION
02181a 09/98 REMEDIATION OF CONTAMINATED SOILS BY THERMAL DESORPTION
02190a 09/98 BIOREMEDIATION USING LANDFARMING SYSTEMS
02191a 02/98 BIOREMEDIATION OF SOILS USING WINDROW COMPOSTING
02210a 10/95 SUBSURFACE DRILLING, SAMPLING, AND TESTING
02217a 12/92 FOUNDATION PREPARATION
02220N 03/00 SITE DEMOLITION
02220a 05/01 DEMOLITION
02226 11/97 REMOVAL AND SALVAGE OF HISTORIC BUILDING MATERIALS

02230a 06/97 CLEARING AND GRUBBING
02231N 09/99 CLEARING AND GRUBBING
02233a 11/92 CLEARING (TIMBER AND STRUCTURE)
02251a 09/95 FOUNDATION DRILLING AND GROUTING
02260a 09/98 SOIL-BENTONITE SLURRY TRENCH FOR HTRW PROJECTS
02261a 10/92 SOIL-BENTONITE SLURRY TRENCH CUTOFF
02300a 12/97 EARTHWORK
02301N 09/00 EARTHWORK FOR STRUCTURES AND PAVEMENTS
02302N 09/99 EXCAVATION, BACKFILLING, AND COMPACTING FOR UTILITIES
02315N 01/01 EXCAVATION AND FILL
02315a 08/98 EXCAVATION, FILLING AND BACKFILLING FOR BUILDINGS
02316a 11/97 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS
02318a 10/00 TEST FILL
02325N 09/99 DREDGING
02330a 08/94 EMBANKMENT FOR EARTH DAMS
02331a 08/99 LEVEE CONSTRUCTION
02332a 08/99 REINFORCED SOIL SLOPE
02361N 01/02 SOIL TREATMENT FOR SUBTERRANEAN TERMITE CONTROL
02362N 01/02 BASALTIC TERMITE BARRIER
02363N 09/01 TERMITE CONTROL BARRIER SYSTEM
02364a 06/98 TERMITICIDE TREATMENT MEASURES FOR SUBTERRANEAN TERMITE CONTROL
02370a 03/00 SOIL SURFACE EROSION CONTROL
02371a 10/01 WIRE MESH GABIONS [AND MATTRESSES]
02372a 10/01 WASTE CONTAINMENT GEOMEMBRANE
02373 09/01 GEOTEXTILE
02374a 12/99 GEOSYNTHETIC DRAINAGE LAYER
02375a 10/00 GEOGRID SOIL REINFORCEMENT
02376a 03/98 GEOSYNTHETIC CLAY LINER (GCL)
02377a 04/99 CLAY BARRIER LAYER
02378a 05/95 GEOTEXTILES USED AS FILTERS
02380a 10/01 STONE, CHANNEL, SHORELINE/COASTAL PROTECTION FOR STRUCTURES
02390a 07/98 MOORING AND GROUNDING POINTS FOR AIRCRAFT
02395N 09/99 PRESTRESSED CONCRETE FENDER PILING
02396N 09/99 RESILIENT FOAM-FILLED MARINE FENDERS
02397N 09/99 ARCH-TYPE RUBBER MARINE FENDERS
02398N 09/99 PIER TIMBERWORK
02430a 07/95 TUNNEL AND SHAFT GROUTING
02441N 09/99 TRENCHLESS EXCAVATION USING MICROTUNNELING
02453a 10/01 PRESTRESSED CONCRETE PILING FOR CIVIL WORKS
02454a 02/98 PRECAST CONCRETE PILING
02455a 11/97 CAST-IN-PLACE CONCRETE PILES, STEEL CASING
02456N 09/01 PRESTRESSED CONCRETE PILES
02456a 02/98 STEEL H-PILES
02457N 09/99 STEEL SHEET PILES
02457a 02/98 ROUND TIMBER PILES
02458N 09/99 TIMBER PILES
02458a 02/98 PRESTRESSED CONCRETE PILING
02459N 09/99 CAST-IN-PLACE CONCRETE PILES
02459a 02/98 PILING: COMPOSITE, WOOD AND CAST IN-PLACE CONCRETE
02460N 09/99 STEEL H PILES
02461N 09/99 WOOD MARINE PILES
02461a 10/01 ROUND TIMBER PILES FOR HYDRAULIC STRUCTURES
02463a 10/01 STEEL H-PILES FOR CIVIL WORKS
02464a 05/92 METAL SHEET PILING
02465a 11/97 AUGER-PLACED GROUT PILES
02466N 09/99 PRESSURE-INJECTED FOOTINGS
02466a 12/97 DRILLED FOUNDATION CAISSONS (PIERS)
02467N 09/99 AUGER CAST GROUT PILES
02468N 09/99 DRILLED FOUNDATION CAISSONS

02490 12/01 SOIL AND ROCK ANCHORS
02510N 09/00 WATER DISTRIBUTION
02510a 04/98 WATER DISTRIBUTION SYSTEM
02521N 09/99 WATER SUPPLY WELL
02521a 11/99 WATER WELLS
02522a 05/98 GROUND-WATER MONITORING WELLS
02525N 09/99 [EXTRACTION] [MONITORING] WELLS
02525a 09/01 RELIEF WELLS
02530N 09/99 SANITARY SEWERAGE
02531a 04/01 SANITARY SEWERS
02532a 07/98 FORCE MAINS AND INVERTED SIPHONS; SEWER
02551N 08/01 NATURAL GAS DISTRIBUTION
02552N 08/01 EXTERIOR SHALLOW TRENCH STEAM DISTRIBUTION
02552a 12/01 PRE-ENGINEERED UNDERGROUND HEAT DISTRIBUTION SYSTEM
02553N 08/01 EXTERIOR UNDERGROUND STEAM DISTRIBUTION SYSTEM
02553a 12/01 HEAT DISTRIBUTION SYSTEMS IN CONCRETE TRENCHES
02554N 08/01 EXTERIOR ABOVEGROUND STEAM DISTRIBUTION
02554a 12/01 ABOVEGROUND HEAT DISTRIBUTION SYSTEM
02555N 08/01 EXTERIOR FUEL DISTRIBUTION
02555a 12/01 PREFABRICATED UNDERGROUND HEATING/COOLING DISTRIBUTION SYSTEM
02556N 02/01 EXTERIOR BURIED PUMPED CONDENSATE RETURN
02556a 08/01 GAS DISTRIBUTION SYSTEM
02557N 09/99 EXTERIOR BURIED PREINSULATED WATER PIPING
02559N 08/01 VALVE MANHOLES AND PIPING AND EQUIPMENT IN VALVE MANHOLES
02570a 07/01 VALVE MANHOLES AND PIPING AND EQUIPMENT IN VALVE MANHOLES
02582N 09/99 ELECTRICAL MANHOLE AND HANDHOLE
02588N 09/99 CONCRETE POLES
02620a 09/01 SUBDRAINAGE SYSTEM
02621a 01/98 FOUNDATION DRAINAGE SYSTEM
02630N 09/99 STORM DRAINAGE
02630a 03/00 STORM-DRAINAGE SYSTEM
02661 09/99 POND AND RESERVOIR LINERS
02710a 12/97 BITUMINOUS-STABILIZED BASE COURSE, SUBBASE, OR SUBGRADE
02711N 09/99 BITUMINOUS CONCRETE BASE COURSE
02711a 03/98 PORTLAND CEMENT-STABILIZED BASE OR SUBBASE COURSE
02712N 09/99 LEAN CONCRETE BASE COURSE
02712a 12/97 LIME-STABILIZED BASE COURSE, SUBBASE, OR SUBGRADE
02713N 09/99 CEMENT STABILIZED [BASE] [SUBBASE] COURSE AT AIRFIELDS AND ROADS
02713a 08/97 BITUMINOUS BASE COURSE
02714N 09/99 LIME TREATED SUBGRADE [LIME MODIFIED SOILS]
02714a 07/01 DRAINAGE LAYER
02721N 09/99 [BASE COURSE FOR RIGID] [AND SUBBASE COURSE FOR FLEXIBLE] PAVING
02721a 03/97 SUBBASE COURSES
02722N 09/99 GRADED CRUSHED AGGREGATE BASE COURSE FOR FLEXIBLE PAVEMENT
02722a 05/01 AGGREGATE AND/OR GRADED-CRUSHED AGGREGATE BASE COURSE
02723N 09/99 SAND-CLAY [BASE] [SUBBASE] COURSE
02731a 01/98 AGGREGATE SURFACE COURSE
02741N 09/99 BITUMINOUS CONCRETE PAVEMENT
02741a 09/99 HOT-MIX ASPHALT (HMA) FOR ROADS
02742N 09/99 HOT MIX BITUMINOUS PAVEMENT
02742a 07/97 BITUMINOUS BINDER AND WEARING COURSES (CENTRAL-PLANT COLD-MIX)
02743N 09/99 BITUMINOUS PRIME COAT
02744N 09/99 BITUMINOUS TACK COAT
02744a 07/97 BITUMINOUS ROAD-MIX SURFACE COURSE
02745a 07/97 BITUMINOUS SURFACE TREATMENT
02746 02/97 RESIN MODIFIED PAVEMENT SURFACING MATERIAL
02747 01/98 POROUS FRICTION COURSE FOR AIRFIELDS AND ROADS

02748A 01/98 BITUMINOUS TACK AND PRIME COATS
02749 10/01 HOT-MIX ASPHALT (HMA) FOR AIRFIELDS
02751N 05/01 CONCRETE PAVEMENT FOR AIRFIELDS AND OTHER HEAVY DUTY PAVEMENTS
02752N 09/01 PORTLAND CEMENT CONCRETE PAVEMENT FOR ROADS AND SITE FACILITIES
02753A 01/02 CONCRETE PAVEMENT FOR AIRFIELDS AND OTHER HEAVY-DUTY PAVEMENTS
02754a 07/01 CONCRETE PAVEMENTS FOR SMALL PROJECTS
02755a 07/01 ROLLER COMPACTED CONCRETE (RCC) PAVEMENT
02760a 03/97 FIELD MOLDED SEALANTS FOR SEALING JOINTS IN RIGID PAVEMENTS
02761N 10/01 PAVEMENT MARKINGS
02761a 12/00 FUEL-RESISTANT (COAL TAR) SEALER
02762N 09/99 JOINTS, REINFORCEMENT, AND MOORING EYES IN CONCRETE PAVEMENTS
02762a 11/01 COMPRESSION JOINT SEALS FOR CONCRETE PAVEMENTS
02763a 04/01 PAVEMENT MARKINGS
02770a 03/98 CONCRETE SIDEWALKS AND CURBS AND GUTTERS
02780 01/98 CONCRETE BLOCK PAVEMENTS
02785N 09/99 BITUMINOUS SEAL COAT
02785a 07/97 BITUMINOUS SEAL COAT, SPRAY APPLICATION
02786N 09/99 FOG SEAL
02787 09/01 SLURRY SEAL
02787a 04/98 BITUMINOUS REJUVENATION
02788N 09/99 COAL TAR SEAL COAT WITH UNVULCANIZED RUBBER
02789N 09/99 BITUMINOUS SURFACE TREATMENT
02791 06/01 PLAYGROUND PROTECTIVE SURFACING
02811N 08/01 IRRIGATION SPRINKLER SYSTEMS
02811a 06/01 UNDERGROUND SPRINKLER SYSTEMS
02821N 09/99 CHAIN LINK FENCES AND GATES
02821a 07/01 FENCING
02832 08/99 SEGMENTAL CONCRETE BLOCK RETAINING WALL
02840a 04/01 ACTIVE VEHICLE BARRIERS
02841N 08/01 TRAFFIC BARRIERS
02870N 09/99 SITE AND STREET FURNISHINGS
02870a 06/01 SITE FURNISHINGS
02882 06/01 PLAYGROUND EQUIPMENT
02915a 01/02 TRANSPLANTING EXTERIOR PLANT MATERIAL
02921N 09/99 TURF
02921a 01/02 SEEDING
02922a 01/02 SODDING
02923a 01/02 SPRIGGING
02930N 09/00 EXTERIOR PLANTS
02930a 01/02 EXTERIOR PLANTING
02935N 09/99 LANDSCAPE MAINTENANCE
02935a 01/02 EXTERIOR PLANT MATERIAL MAINTENANCE
02951A 08/97 RUNWAY RUBBER REMOVAL
02961N 03/98 COLD-MILLING OF BITUMINOUS PAVEMENT
02964a 03/98 COLD MILLING OF BITUMINOUS PAVEMENTS
02965a 08/97 COLD-MIX RECYCLING
02966a 08/97 HOT IN-PLACE RECYCLING OF BITUMINOUS PAVEMENTS
02967a 04/01 HEATER SCARIFYING OF BITUMINOUS PAVEMENTS
02975a 07/97 SEALING OF CRACKS IN BITUMINOUS PAVEMENTS
02976N 09/99 STRESS-ABSORBING MEMBRANE INTERLAYER
02980a 08/97 PATCHING OF RIGID PAVEMENTS
02981A 11/97 GROOVING FOR AIRFIELD PAVEMENTS
02981N 09/99 RUBBER AND PAINT REMOVAL FROM AIRFIELD PAVEMENTS
02982N 09/99 RESEALING OF JOINTS IN RIGID PAVEMENT
02983N 09/99 PARTIAL DEPTH PATCHING OF RIGID PAVEMENT
02985a 12/97 SLABJACKING RIGID PAVEMENTS

DIVISION 03 - CONCRETE

03100a 05/98 STRUCTURAL CONCRETE FORMWORK
03101a 09/01 FORMWORK FOR CONCRETE
03150a 05/98 EXPANSION JOINTS, CONTRACTION JOINTS, AND WATERSTOPS
03151a 09/01 EXPANSION, CONTRACTION AND CONSTRUCTION JOINTS IN CONCRETE FOR CIVIL WORKS
03200a 09/97 CONCRETE REINFORCEMENT
03201 10/01 STEEL BARS AND WELDED WIRE FABRIC FOR CONCRETE REINFORCEMENT FOR CIVIL WORKS
03230 09/01 STEEL STRESSING TENDONS AND ACCESSORIES FOR PRESTRESSED CONCRETE
03300 11/01 CAST-IN-PLACE STRUCTURAL CONCRETE
03300N 12/01 CAST-IN-PLACE CONCRETE
03301a 09/01 CAST-IN-PLACE STRUCTURAL CONCRETE FOR CIVIL WORKS
03307a 11/01 CONCRETE FOR MINOR STRUCTURES
03311 09/99 MARINE CONCRETE
03330a 03/89 CAST-IN-PLACE ARCHITECTURAL CONCRETE
03340a 06/97 ROOF DECKING, CAST-IN-PLACE LOW DENSITY CONCRETE
03371 09/01 SHOTCRETE
03372 09/01 PREPLACED-AGGREGATE CONCRETE
03373 09/01 CONCRETE FOR CONCRETE CUTOFF WALLS
03410N 03/00 PLANT-PRECAST STRUCTURAL CONCRETE
03410a 05/98 PRECAST/PRESTRESSED CONCRETE FLOOR AND ROOF UNITS
03412N 09/99 PLANT-PRECAST PRESTRESSED STRUCTURAL CONCRETE
03413a 05/98 PRECAST ARCHITECTURAL CONCRETE
03414a 03/89 PRECAST ROOF DECKING
03415a 09/01 PRECAST-PRESTRESSED CONCRETE
03450 09/99 PLANT-PRECAST ARCHITECTURAL CONCRETE
03511a 09/96 GYPSUM PLANK DECKING (CONTRACTOR'S OPTION)
03520N 09/99 LIGHTWEIGHT CONCRETE ROOF INSULATION
03700 07/92 MASS CONCRETE
03701 10/01 ROLLER-COMPACTED CONCRETE FOR MASS CONCRETE CONSTRUCTION
03900 12/97 RESTORATION OF CONCRETE IN HISTORIC STRUCTURES
03930 09/99 CONCRETE REHABILITATION

DIVISION 04 - MASONRY

04200N 09/99 UNIT MASONRY
04200a 10/01 MASONRY
04220a 01/02 NONBEARING MASONRY VENEER/STEEL STUD WALLS
04230N 09/99 REINFORCED MASONRY
04250N 09/99 GLAZED STRUCTURAL CLAY TILE AND PREFACED CONCRETE MASONRY UNITS
04270N 09/99 GLASS MASONRY UNITS
04900 05/97 RESTORATION AND CLEANING OF MASONRY IN HISTORIC STRUCTURES

DIVISION 05 - METALS

05055a 12/92 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS
05090a 09/98 WELDING, STRUCTURAL
05091a 09/98 ULTRASONIC INSPECTION OF WELDMENTS
05092a 09/98 ULTRASONIC INSPECTION OF PLATES
05093a 09/98 WELDING PRESSURE PIPING
05120N 01/01 STRUCTURAL STEEL
05120a 01/02 STRUCTURAL STEEL
05210N 09/00 STEEL JOISTS [AND JOIST GIRDERS]
05210a 01/02 STEEL JOISTS
05300a 01/02 STEEL DECKING
05310N 09/99 STEEL DECKS
05400N 09/99 COLD-FORMED METAL FRAMING
05400a 01/02 COLD-FORMED STEEL FRAMING

05500N 09/99 METAL FABRICATIONS
05500a 01/02 MISCELLANEOUS METAL
05502a 05/92 METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS
05615a 04/93 STOPLOGS
05650N 08/01 RAILROAD TRACK AND ACCESSORIES
05650a 05/01 RAILROADS
05652N 09/99 WELDING CRANE AND RAILROAD RAIL - THERMITE METHOD

DIVISION 06 - WOODS & PLASTICS

06100N 09/99 ROUGH CARPENTRY
06100a 10/01 ROUGH CARPENTRY
06200N 09/99 FINISH CARPENTRY
06200a 11/01 FINISH CARPENTRY
06410a 11/01 LAMINATE CLAD ARCHITECTURAL CASEWORK
06650 10/00 SOLID POLYMER (SOLID SURFACING) FABRICATIONS
06650N 09/99 SOLID POLYMER FABRICATIONS

DIVISION 07 - THERMAL & MOISTURE PROTECTION

07110a 09/98 BITUMINOUS DAMPPROOFING
07112N 09/99 BITUMINOUS DAMPPROOFING
07121N 09/99 BUILT-UP BITUMINOUS WATERPROOFING
07131a 09/98 ELASTOMERIC MEMBRANE WATERPROOFING
07132N 09/01 ELASTOMERIC SHEET WATERPROOFING
07132a 09/98 BITUMINOUS WATERPROOFING
07141N 09/99 FLUID-APPLIED WATERPROOFING
07161N 09/99 METALLIC OXIDE WATERPROOFING
07170N 09/99 BENTONITE WATERPROOFING
07190N 09/99 WATER REPELLENTS
07212N 09/99 MINERAL FIBER BLANKET INSULATION
07214N 09/99 BOARD AND BLOCK INSULATION
07216N 09/00 LOOSE FILL THERMAL INSULATION
07220N 03/00 ROOF AND DECK INSULATION
07220a 10/01 ROOF INSULATION
07240 10/01 EXTERIOR INSULATION AND FINISH SYSTEMS
07310 02/95 SLATE ROOFING
07311N 09/99 ASPHALT SHINGLES
07311a 08/98 ROOFING, STRIP SHINGLES
07320N 09/99 ROOF TILES
07320a 02/95 CLAY TILE ROOFING
07410N 09/99 METAL ROOF AND WALL PANELS
07412a 10/01 NON-STRUCTURAL METAL ROOFING
07413a 10/01 METAL SIDING
07416a 11/01 STRUCTURAL STANDING SEAM METAL ROOF (SSSMR) SYSTEM
07510a 10/01 BUILT-UP ROOFING
07511N 09/99 BUILT-UP ASPHALT ROOFING (AGGREGATE SURFACED)
07512N 09/99 BUILT-UP ASPHALT ROOFING (SMOOTH SURFACED)
07513N 09/99 BUILT-UP ASPHALT ROOFING (MINERAL SURFACED)
07515a 01/02 PROTECTED MEMBRANE ROOFING (PMR)
07530a 09/95 ELASTOMERIC ROOFING (EPDM)
07531N 09/99 CHLOROSULFONATED POLYETHYLENE ROOFING (CSPE)
07532N 09/99 POLYISOBUTYLENE (PIB) ROOFING
07536N 09/99 ETHYLENE PROPYLENE DIENE MONOMER (EPDM) ROOFING
07541N 09/99 POLYVINYL CHLORIDE (PVC) ROOFING
07542N 09/99 THERMOPLASTIC ALLOY (TPA) ROOFING
07548a 08/97 POLYVINYL CHLORIDE (PVC) ROOFING
07550N 09/99 MODIFIED BITUMINOUS MEMBRANE ROOFING

07551a 01/02 MODIFIED BITUMEN ROOFING
07570a 11/01 SPRAYED POLYURETHANE FOAM (SPF) ROOFING
07571N 09/99 FOAMED ROOFING
07572N 09/99 COATINGS FOR FOAMED ROOFING
07580N 09/99 ROLL ROOFING
07600N 09/99 FLASHING AND SHEET METAL
07600a 11/01 SHEET METALWORK, GENERAL
07610 08/94 COPPER ROOF SYSTEM
07611N 09/99 STEEL STANDING SEAM ROOFING
07612N 09/99 ALUMINUM STANDING SEAM ROOFING
07620a 08/99 MESH TERMITE BARRIER
07625a 05/01 COPPER SHEET METAL FLASHING
07720A 04/00 ROOF VENTILATORS, GRAVITY-TYPE
07810N 09/99 SPRAY-APPLIED FIREPROOFING
07810a 07/01 SPRAY-APPLIED FIREPROOFING
07840N 09/99 FIRESTOPPING
07840a 08/00 FIRESTOPPING
07900a 06/97 JOINT SEALING
07920N 09/99 JOINT SEALANTS

DIVISION 08 - DOORS & WINDOWS

08110 05/01 STEEL DOORS AND FRAMES
08120 09/99 ALUMINUM DOORS AND FRAMES
08161 08/01 ALUMINUM SLIDING GLASS DOORS
08162 08/01 SLIDING FIRE DOORS
08165a 11/01 SLIDING METAL DOORS
08181 08/01 METAL STORM DOORS
08210 09/99 WOOD DOORS
08302N 08/01 CORROSION CONTROL HANGAR DOORS
08315N 09/01 BLAST RESISTANT DOORS (OVAL ARCH MAGAZINES)
08330a 06/97 OVERHEAD ROLLING DOORS
08331N 08/01 ROLLING SERVICE [AND FIRE] DOORS
08331a 09/98 METAL ROLLING COUNTER DOORS
08342 03/01 STEEL SLIDING HANGAR DOORS
08361 08/01 SECTIONAL OVERHEAD DOORS
08370 08/01 VERTICAL LIFT DOORS
08390 04/01 BLAST RESISTANT DOORS
08510 08/01 STEEL WINDOWS
08520N 08/01 ALUMINUM WINDOWS
08520a 03/00 ALUMINUM AND ENVIRONMENTAL CONTROL ALUMINUM WINDOWS
08550 08/01 WOOD WINDOWS
08560 08/01 PLASTIC WINDOWS
08581 08/01 BLAST RESISTANT TEMPERED GLASS WINDOWS
08582 08/01 ALUMINUM STORM WINDOWS
08590 08/97 WOOD WINDOWS - REPAIR AND REHABILITATION
08600 08/00 SKYLIGHTS
08710 08/01 DOOR HARDWARE
08745 08/01 ELECTRICAL LOCKING CONTROL FOR BRIGS
08800N 09/99 GLAZING
08810a 05/97 GLASS AND GLAZING
08840a 07/95 PLASTIC GLAZING
08850 07/92 FRAGMENT RETENTION FILM FOR GLASS
08900 09/99 GLAZED CURTAIN WALL

DIVISION 09 - FINISHES

09100N 09/99 METAL SUPPORT ASSEMBLIES
09200a 06/97 LATHING AND PLASTERING

09205N 09/99 FURRING AND LATHING
09212N 09/00 GYPSUM PLASTER, CEMENT PLASTER, AND STUCCO
09215N 09/99 VENEER PLASTER
09215a 11/95 VENEER PLASTER
09225A 11/95 STUCCO
09250 11/01 GYPSUM BOARD
09310A 11/01 CERAMIC TILE
09310N 09/99 CERAMIC TILE, QUARRY TILE, AND PAVER TILE
09331N 09/99 CHEMICAL-RESISTANT QUARRY TILE
09410N 09/99 PORTLAND CEMENT TERRAZZO
09411A 01/96 BONDED TERRAZZO
09421A 11/95 TERRAZZO TILE
09445A 01/96 RESINOUS TERRAZZO FLOORING
09510A 10/01 ACOUSTICAL CEILINGS
09510N 09/99 ACOUSTICAL CEILINGS
09611N 03/01 THIN FILM FLOORING SYSTEM FOR AIRCRAFT MAINTENANCE FACILITIES
09612N 03/01 EPOXY MORTAR FLOORING SYSTEM FOR AIRCRAFT MAINTENANCE FACILITIES
09620A 01/98 RESILIENT ATHLETIC FLOORING
09640A 11/01 WOOD STRIP FLOORING
09641A 04/01 HARDWOOD PARQUET FLOORING
09641N 08/01 WOOD ATHLETIC FLOORING
09643N 08/01 PORTABLE (DEMOUNTABLE) WOOD FLOORING
09645N 08/01 WOOD PARQUET FLOORING
09650A 07/96 RESILIENT FLOORING
09651N 08/01 RESILIENT TILE FLOORING
09655N 08/01 RESILIENT SHEET FLOORING
09656N 08/01 RESILIENT SHEET FLOORING (INSTITUTIONAL)
09660A 01/98 CONDUCTIVE VINYL FLOORING
09670A 04/01 INDUSTRIAL RESIN-BASED FLOORING
09670N 08/01 FLUID-APPLIED FLOORING
09680A 05/01 CARPET
09680N 08/01 CARPET
09685N 08/01 CARPET TILE
09720A 04/01 WALLCOVERINGS
09721N 08/01 VINYL COATED FABRIC WALL COVERING
09840A 11/01 ACOUSTICAL WALL TREATMENT
09900 09/01 PAINTS AND COATINGS
09910N 03/00 MAINTENANCE, REPAIR, AND COATING OF TALL ANTENNA TOWERS
09915 06/93 COLOR SCHEDULE
09963N 09/99 HIGH-BUILD GLAZE COATINGS
09965A 04/01 PAINTING: HYDRAULIC STRUCTURES
09965N 08/01 METALLIC TYPE CONDUCTIVE/SPARK RESISTANT CONCRETE FLOOR FINISH
09967N 09/99 COATING OF STEEL WATERFRONT STRUCTURES
09970N 09/01 INTERIOR COATING OF WELDED STEEL PETROLEUM FUEL TANKS
09971 09/01 EXTERIOR COATING OF STEEL STRUCTURES
09971A 10/00 METALLIZING: HYDRAULIC STRUCTURES
09972 09/01 INTERIOR COATING OF WELDED STEEL WATER TANKS
09973 09/01 INTERIOR COATING OF WELDED STEEL PETROLEUM FUEL TANKS
09974N 09/00 PROTECTION OF BURIED STEEL PIPING AND STEEL BULKHEAD TIE RODS
09980N 09/99 INTERIOR LINING FOR CONCRETE STORAGE TANKS (FOR PETROLEUM FUELS)
09981N 09/98 LINSEED OIL PROTECTION OF CONCRETE SURFACES
09995 01/98 PREPARATION OF HISTORIC WOOD AND METAL SURFACES FOR PAINTING

DIVISION 10 - SPECIALTIES

10100A 11/00 VISUAL COMMUNICATIONS SPECIALTIES
10153N 09/99 TOILET PARTITIONS

10160A 07/98 TOILET PARTITIONS
10191N 08/01 CUBICLE TRACK AND HARDWARE
10201N 09/99 METAL [WALL] [AND] [DOOR] LOUVERS
10260A 12/95 WALL AND CORNER PROTECTION
10260N 09/99 WALL AND CORNER GUARDS
10270A 01/97 RAISED FLOOR SYSTEM
10270N 09/99 ACCESS FLOORING
10400N 09/99 IDENTIFICATION DEVICES
10430A 06/01 EXTERIOR SIGNAGE
10440A 06/01 INTERIOR SIGNAGE
10505N 09/99 STEEL CLOTHING LOCKERS
10605N 09/99 WIRE MESH PARTITIONS
10615A 08/00 DEMOUNTABLE PARTITIONS
10650A 08/00 OPERABLE PARTITIONS
10652N 08/01 OPERABLE PANEL PARTITIONS
10655N 08/01 ACCORDION FOLDING PARTITIONS
10675N 09/99 STEEL SHELVING
10716N 08/01 STORM SHUTTERS
10800A 04/01 TOILET ACCESSORIES
10800N 09/99 TOILET AND BATH ACCESSORIES

DIVISION 11 - EQUIPMENT

11020A 12/97 SECURITY VAULT DOOR
11020N 09/99 SECURITY VAULT DOOR [AND DAY GATE]
11022A 12/88 DOORS; FIRE-INSULATED, RECORD-VAULT
11025 08/01 FORCED ENTRY RESISTANT COMPONENTS
11035 04/00 BULLET-RESISTANT COMPONENTS
11145A 04/01 AVIATION FUELING SYSTEMS
11161N 09/99 DOCK LEVELERS
11162A 08/00 LOADING DOCK LEVELER
11171N 08/01 PACKAGED INCINERATORS
11181A 02/90 INCINERATORS, GENERAL PURPOSE
11182A 08/01 INCINERATORS, MEDICAL WASTE
11191 09/99 DETENTION AND SECURITY WINDOWS
11192 09/99 DETENTION AND SECURITY GLAZING
11193 09/99 DETENTION HOLLOW METAL FRAMES, DOORS, AND DOOR FRAMES
11194 08/01 DETENTION HARDWARE
11195 09/99 DETENTION FURNITURE AND ACCESSORIES
11211A 12/88 PUMPS: WATER, CENTRIFUGAL
11212A 03/89 PUMPS: WATER, VERTICAL TURBINE
11215A 06/01 FANS/BLOWERS/PUMPS; OFF-GAS
11220A 09/97 PRECIPITATION/COAGULATION/FLOCCULATION WATER TREATMENT
11225A 06/01 DOWNFLOW LIQUID ACTIVATED CARBON ADSORPTION UNITS
11226A 04/98 VAPOR PHASE ACTIVATED CARBON ADSORPTION UNITS
11241A 12/88 CHLORINE-FEEDING MACHINES (AUTOMATIC, SEMIAUTOMATIC AND MANUAL)
11242A 12/01 CHEMICAL FEED SYSTEMS
11243A 04/99 CHEMICAL TREATMENT OF WATER FOR MECHANICAL SYSTEMS
11250A 11/01 WATER SOFTENERS, CATION-EXCHANGE (SODIUM CYCLE)
11285A 01/94 MITER GATES
11286A 01/94 SECTOR GATES
11287A 01/94 TAINTER GATES AND ANCHORAGES
11288A 07/93 VERTICAL LIFT GATES
11289A 04/93 CLOSURE GATES
11301A 04/99 AIR STRIPPER
11310A 11/90 PUMPS; SEWAGE AND SLUDGE
11311N 08/01 PARALLEL PLATE [OR VERTICAL TUBE], GRAVITY OIL-WATER SEPARATOR
11312A 04/98 SIPHONS, DOSING
11312N 01/01 PACKAGE [GRINDER PUMP][LIFT] STATION

11313A 04/01 PNEUMATIC SEWAGE EJECTORS
11320N 08/01 GRIT COLLECTING EQUIPMENT
11330A 04/89 SEWAGE BAR SCREEN AND MECHANICAL SHREDDER
11331N 08/01 COMMINUTOR
11334A 01/89 COMMINUTOR
11338N 08/01 CIRCULAR CLARIFIER
11350A 07/01 SLUDGE-COLLECTING EQUIPMENT
11360A 06/01 RECESSED CHAMBER FILTER PRESS SYSTEM
11365A 06/90 TRICKLING FILTER
11375A 11/01 AIR SUPPLY AND DIFFUSION EQUIPMENT FOR SEWAGE TREATMENT
11375N 08/01 AERATION EQUIPMENT
11376 03/93 ULTRAVIOLET DISINFECTION EQUIPMENT
11377 06/01 ADVANCED OXIDATION PROCESSES (AOP)
11378 10/01 THERMAL (CATALYTIC) OXIDATION SYSTEMS
11380 12/89 SLUDGE-DIGESTER GAS, HEATING, AND MIXING SYSTEM
11390 08/01 PREFABRICATED BIOCHEMICAL WASTEWATER TREATMENT PLANT
11391 08/01 CONTINUOUS LOOP REACTOR WASTEWATER TREATMENT SYSTEM
11393 06/01 FILTRATION SYSTEM
11400A 01/02 FOOD SERVICE EQUIPMENT
11400N 09/99 FOOD SERVICE EQUIPMENT
11401N 08/01 ELECTRIC KITCHEN EQUIPMENT
11475 08/01 RADIOGRAPHIC DARKROOM EQUIPMENT
11500A 05/01 AIR POLLUTION CONTROL
11601N 08/01 LABORATORY EQUIPMENT AND FUMEHOODS
11613N 08/01 STILLS AND ASSOCIATED EQUIPMENT
11700N 08/01 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT
11702N 08/01 MEDICAL EQUIPMENT, MISCELLANEOUS
11704N 09/99 [CASEWORK] [AND] [MATERIAL HANDLING UNITS] IN MEDICAL FACILITIES
11706N 09/99 HYDROTHERAPY EQUIPMENT
11707N 08/01 HOSPITAL AND LABORATORY WASHING EQUIPMENT
11708N 09/99 INSTALLATION OF GOVERNMENT-FURNISHED MEDICAL EQUIPMENT
11710A 07/01 WARMING CABINETS, STERILIZERS, AND ASSOCIATED EQUIPMENT
11712N 08/01 STERILIZERS AND ASSOCIATED EQUIPMENT
11744N 09/99 DENTAL EQUIPMENT

DIVISION 12 - FURNISHINGS

12301N 09/99 MANUFACTURED VANITIES
12302N 09/99 WARDROBE STORAGE CABINETS (THREE DRAWER)
12303N 09/99 WARDROBES
12320A 05/98 CABINETS AND COUNTERTOPS
12350A 04/99 CASEWORK FOR MEDICAL AND DENTAL FACILITIES
12351N 03/01 MEDICAL AND DENTAL CASEWORK
12352N 09/99 RESIDENTIAL CASEWORK
12490A 01/98 WINDOW TREATMENT
12490N 09/99 BLINDS, VENETIAN (AND AUDIO VISUAL)
12491N 08/01 CURTAINS AND DRAPES
12600A 01/98 THEATER CHAIRS
12601N 09/99 THEATER SEATING
12705 06/01 FURNITURE SYSTEMS

DIVISION 13 - SPECIAL CONSTRUCTION

13034N 08/01 PREFABRICATED AUDIOMETRIC ROOMS
13038 08/01 COLD-STORAGE ROOMS (PREFABRICATED PANEL TYPE)
13080 04/99 SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT
13090A 01/94 X-RAY SHIELDING
13092N 09/99 X-RAY SHIELDING

13093N 12/01 RADIO FREQUENCY SHIELDED ENCLOSURES, DEMOUNTABLE TYPE
13094N 12/01 RADIO FREQUENCY SHIELDED ENCLOSURES, WELDED TYPE
13095A 07/01 ELECTROMAGNETIC (EM) SHIELDING
13095N 09/99 HEMP SHIELDED DOOR
13100A 07/01 LIGHTNING PROTECTION SYSTEM
13100N 09/99 LIGHTNING PROTECTION SYSTEM
13110A 11/98 CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE)
13110N 09/00 CATHODIC PROTECTION BY GALVANIC ANODES
13111A 11/98 CATHODIC PROTECTION SYSTEM (STEEL WATER TANKS)
13111N 08/01 CATHODIC PROTECTION BY IMPRESSED CURRENT
13112A 11/98 CATHODIC PROTECTION SYSTEM (IMPRESSED CURRENT)
13112N 03/00 CATHODIC PROTECTION SYSTEM (STEEL WATER TANKS)
13113A 09/01 CATHODIC PROTECTION SYSTEMS (IMPRESSED CURRENT)FOR LOCK MITER GATES
13120A 01/02 STANDARD METAL BUILDING SYSTEMS
13121A 01/02 METAL BUILDING SYSTEMS (MINOR REQUIREMENTS)
13121N 08/01 PREENGINEERED METAL BUILDINGS
13202A 05/97 FUEL STORAGE SYSTEMS
13203A 08/93 TIGHTNESS TESTING OF UNDERGROUND FUEL SYSTEMS
13205N 08/01 STEEL TANKS WITH FIXED ROOFS
13206A 11/88 STEEL STANDPIPES AND GROUND STORAGE RESERVOIRS
13208N 09/99 WIRE-WOUND CIRCULAR PRESTRESSED-CONCRETE WATER TANK
13209N 09/00 WATER STORAGE TANKS
13210A 01/89 ELEVATED STEEL WATER TANK
13211A 07/89 PRESSURE VESSELS FOR STORAGE OF COMPRESSED GASES
13216N 09/99 UNDERGROUND PETROLEUM TANKS
13217N 09/99 FIBERGLASS-PLASTIC LINING FOR STEEL TANK BOTTOMS (FOR PETROLEUM)
13219N 09/99 CLEANING PETROLEUM STORAGE TANKS
13234A 04/01 FLOATING COVER FOR SLUDGE-DIGESTION TANKS
13280A 11/01 ASBESTOS ABATEMENT
13281A 04/00 LEAD HAZARD CONTROL ACTIVITIES
13281N 01/02 ENGINEERING CONTROL OF ASBESTOS CONTAINING MATERIALS
13282N 12/01 REMOVAL AND DISPOSAL OF MATERIAL CONTAINING LEAD
13283N 12/01 REMOVAL AND DISPOSAL OF LEAD-CONTAINING PAINT
13284N 09/99 REMOVAL AND DISPOSAL OF POLYCHLORINATED BIPHENYLS (PCBs)
13285N 09/99 REMOVAL AND DISPOSAL OF PCB CONTAMINATED SOILS
13286N 01/01 HANDLING OF LIGHTING BALLASTS AND LAMPS CONTAINING PCBs AND MERCURY
13287N 09/99 RADON MITIGATION
13290A 03/89 COMPOSTING TOILET
13401N 09/99 FLOW MEASURING EQUIPMENT [POTABLE WATER] [SEWAGE TREATMENT PLANT]
13405A 07/01 PROCESS CONTROL
13420A 11/97 SELF-ACTING BLAST VALVES
13451A 03/00 POWER MONITORING SYSTEM
13600A 08/01 SOLAR WATER HEATING EQUIPMENT
13610N 09/99 SOLAR LIQUID FLAT PLATE COLLECTORS
13702N 09/99 BASIC INTRUSION DETECTION SYSTEMS (IDS)
13703N 09/99 COMMERCIAL INTRUSION DETECTION SYSTEMS (IDS)
13720A 05/98 ELECTRONIC SECURITY SYSTEM
13721A 03/97 SMALL INTRUSION DETECTION SYSTEM
13798 09/99 DURESS SIGNAL SYSTEM [FOR BRIG FACILITIES]
13799 09/99 WATCHTOUR SYSTEM [FOR BRIG FACILITIES]
13801A 12/01 UTILITY MONITORING AND CONTROL SYSTEM (UMCS)
13814A 04/89 BUILDING PREPARATION FOR ENERGY MONITORING AND CONTROL SYSTEMS (EMCS)
13820A 04/01 MULTI-BUILDING EXPANSION OF ENERGY MONITORING AND CONTROL SYSTEMS

13850A 08/98 FIRE DETECTION AND ALARM SYSTEM, DIRECT CURRENT LOOP
13851A 08/98 FIRE DETECTION AND ALARM SYSTEM, ADDRESSABLE
13851N 09/99 EXTERIOR FIRE ALARM SYSTEM, CLOSED CIRCUIT TELEGRAPHIC TYPE
13852A 11/97 FIRE ALARM REPORTING SYSTEM, RADIO TYPE
13852N 09/99 INTERIOR FIRE DETECTION AND ALARM SYSTEM
13853A 11/97 CENTRAL FIRE ALARM SYSTEM, DIGITAL ALARM COMMUNICATOR TYPE
13853N 09/99 FIRE ALARM SYSTEM, RADIO TYPE
13854N 08/00 FIRE ALARM REPORTING SYSTEMS - DIGITAL COMMUNICATORS
13855N 03/00 ANALOG/ADDRESSABLE INTERIOR FIRE ALARM SYSTEM
13856N 03/00 CARBON MONOXIDE DETECTORS
13920A 12/01 FIRE PUMPS
13920N 09/99 FIRE PUMPS
13930A 12/01 WET PIPE SPRINKLER SYSTEM, FIRE PROTECTION
13930N 09/99 WET-PIPE FIRE SUPPRESSION SPRINKLERS
13931N 09/99 FIRE EXTINGUISHING SPRINKLER SYSTEMS (RESIDENTIAL)
13935A 12/01 DRY PIPE SPRINKLER SYSTEM, FIRE PROTECTION
13935N 09/99 DRY-PIPE FIRE SPRINKLER SYSTEMS
13945A 12/01 PREACTION AND DELUGE SPRINKLER SYSTEMS, FIRE PROTECTION
13945N 09/99 [DELUGE] [PREACTION] FIRE SPRINKLER SYSTEMS
13955A 12/01 AQUEOUS FILM-FORMING FOAM (AFFF) FIRE PROTECTION SYSTEM
13956N 09/99 FOAM FIRE EXTINGUISHING FOR AIRCRAFT HANGARS
13957N 09/99 FOAM FIRE EXTINGUISHING FOR FUEL TANK PROTECTION
13958N 09/99 FOAM FIRE EXTINGUISHING FOR HAZ/FLAM MATERIAL FACILITY
13961N 09/99 CARBON DIOXIDE FIRE EXTINGUISHING (HIGH PRESSURE)
13962N 09/99 CARBON DIOXIDE FIRE EXTINGUISHING (LOW PRESSURE)
13965A 12/01 WET CHEMICAL FIRE EXTINGUISHING SYSTEM
13966N 09/00 HALON 1301 FIRE EXTINGUISHING
13971N 09/00 WET CHEMICAL FIRE EXTINGUISHING FOR KITCHEN CABINET
13975N 02/01 STANDPIPE SYSTEMS

DIVISION 14 - CONVEYING SYSTEMS

14210A 08/01 ELEVATORS, ELECTRIC
14210N 03/01 ELECTRIC TRACTION ELEVATORS
14211A 01/94 ELEVATORS, ELECTRIC, FOR CIVIL WORKS
14240A 08/01 ELEVATORS, HYDRAULIC
14240N 03/01 HYDRAULIC ELEVATORS
14534N 09/99 MONORAILS WITH MANUAL HOIST
14535N 09/99 MONORAILS WITH AIR MOTOR POWERED HOIST
14580A 08/01 PNEUMATIC-TUBE SYSTEM
14601A 04/94 CRANES, BRIDGE & GANTRY, TOP RUNNING, 30-TON MAXIMUM CAPACITY
14602A 08/95 CRANES, SINGLE-GIRDER BRIDGE, MONORAIL AND JIB
14606N 09/99 PORTAL CRANE TRACK INSTALLATION
14622N 09/99 MONORAILS WITH ELECTRIC POWERED HOISTS
14630A 05/93 OVERHEAD ELECTRIC CRANES
14636N 09/99 CRANES, OVERHEAD ELECTRIC, TOP RUNNING (UNDER 20,000 POUNDS)
14637N 09/99 CRANES, OVERHEAD ELECTRIC, UNDERRUNNING (UNDER 20,000 POUNDS)

DIVISION 15 - MECHANICAL

15005A 12/01 SPEED REDUCERS FOR STORM WATER PUMPS
15010A 12/01 HYDRAULIC POWER SYSTEMS FOR CIVIL WORKS STRUCTURES
15050N 09/01 BASIC MECHANICAL MATERIALS AND METHODS
15070A 01/02 SEISMIC PROTECTION FOR MECHANICAL EQUIPMENT
15070N 09/99 MECHANICAL SOUND, VIBRATION, AND SEISMIC CONTROL
15080A 12/01 THERMAL INSULATION FOR MECHANICAL SYSTEMS
15080N 09/99 MECHANICAL INSULATION
15081N 09/99 EXTERIOR PIPING INSULATION
15131A 12/01 VERTICAL PUMPS, AXIAL-FLOW AND MIXED-FLOW IMPELLER-TYPE

15132A 12/01 SUBMERSIBLE PUMP, AXIAL-FLOW AND MIXED-FLOW TYPE
15133A 12/01 DIESEL/NATURAL GAS FUELED ENGINE PUMP DRIVES
15181A 12/01 CHILLED AND CONDENSER WATER PIPING AND ACCESSORIES
15181N 09/99 CHILLED, CONDENSER, OR DUAL SERVICE WATER PIPING
15182A 12/01 REFRIGERANT PIPING
15182N 09/99 REFRIGERANT PIPING
15183N 09/99 STEAM SYSTEM AND TERMINAL UNITS
15184N 09/99 [HIGH][MEDIUM] TEMPERATURE WATER SYSTEM WITHIN BUILDINGS
15185N 09/99 LOW TEMPERATURE WATER [LTW] HEATING SYSTEM
15190A 12/01 GAS PIPING SYSTEMS
15191N 09/99 FIBERGLASS REINFORCED PLASTIC (FRP) PIPING (FOR PETROLEUM)
15192N 09/99 FUEL OIL PIPING
15193N 09/99 GASOLINE/DIESEL DISPENSING SYSTEMS
15194N 10/01 AVIATION FUEL DISTRIBUTION AND DISPENSING
15195N 09/99 NATURAL GAS AND LIQUID PETROLEUM PIPING
15200A 12/01 PIPELINES, LIQUID PROCESS PIPING
15211N 09/99 LOW PRESSURE COMPRESSED AIR PIPING (NON-BREATHING AIR TYPE)
15212N 09/99 HIGH AND MEDIUM PRESSURE COMPRESSED AIR PIPING
15213N 09/99 LARGE CENTRIFUGAL AIR COMPRESSORS (OVER 200 HP)
15214N 09/99 LARGE NONLUBRICATED RECIPROCATING AIR COMPRESSORS (OVER 300 HP)
15215N 09/99 NONLUBRICATED ROTARY SCREW AIR COMPRESSORS (100 HP AND LARGER)
15216N 09/99 WELDING PRESSURE PIPING
15217N 09/99 MEDICAL GAS AND VACUUM PIPING
15400A 01/02 PLUMBING, GENERAL PURPOSE
15400N 06/01 PLUMBING SYSTEMS
15405A 12/01 PLUMBING, HOSPITAL
15411N 09/99 HOSPITAL PLUMBING FIXTURES
15495A 12/01 HYDRAULIC FLUID POWER SYSTEMS
15500A 12/01 DESICCANT COOLING SYSTEMS
15501N 09/99 STEAM HEATING PLANT WATERTUBE (SHOP ASSEMBLED) COAL/OIL OR COAL
15502N 09/99 STEAM HEATING PLANT WATERTUBE (FIELD ERECTED) COAL/OIL OR COAL
15511N 09/99 WATER-TUBE BOILERS, OIL/GAS OR OIL
15514N 09/99 LOW PRESSURE WATER HEATING BOILERS (UNDER 800,000 BTU/HR OUTPUT)
15515N 09/99 LOW PRESSURE WATER HEATING BOILERS (OVER 800,000 BTU/HR OUTPUT)
15516N 09/99 STEAM BOILERS AND EQUIPMENT (500,000 - 18,000,000 BTU/HR)
15517N 09/99 STEAM BOILERS AND EQUIPMENT (18,000,000 - 60,000,000 BTU/HR)
15532N 09/99 WARM AIR HEATING SYSTEMS
15555A 05/01 CENTRAL HIGH TEMPERATURE WATER (HTW) GENERATING PLANT AND AUXILIARIES
15556A 07/01 FORCED HOT WATER HEATING SYSTEMS USING WATER AND STEAM HEAT EXCHANGERS
15559A 03/89 CENTRAL STEAM-GENERATING SYSTEM, COAL-FIRED
15561A 09/01 CENTRAL STEAM GENERATING SYSTEM - COMBINATION GAS AND OIL FIRED
15562A 07/01 HEATING AND UTILITIES SYSTEMS, CENTRAL STEAM
15565A 12/01 HEATING SYSTEM; GAS-FIRED HEATERS
15566A 12/01 WARM AIR HEATING SYSTEMS
15569A 12/01 WATER AND STEAM HEATING; OIL, GAS OR BOTH; UP TO 20 MBTUH
15601N 05/01 CENTRAL REFRIGERATION EQUIPMENT FOR AIR CONDITIONING
15602N 09/99 REFRIGERATION EQUIPMENT FOR COLD STORAGE
15620A 12/01 LIQUID CHILLERS
15645A 12/01 COOLING TOWER
15652A 12/01 COLD STORAGE REFRIGERATION SYSTEMS
15690A 12/01 EVAPORATIVE COOLING SYSTEMS
15700A 12/01 UNITARY HEATING AND COOLING EQUIPMENT
15720N 09/99 AIR HANDLING UNITS
15721N 09/99 EVAPORATIVE COOLING SYSTEM
15730N 09/99 UNITARY AIR CONDITIONING EQUIPMENT
15741 11/99 VERTICAL GROUND-COUPLED HEAT EXCHANGE SYSTEMS (VGCHES)

15741N 08/00 WATER SOURCE HEAT PUMP SYSTEMS
15751N 09/99 DESICCANT DEHUMIDIFICATION EQUIPMENT
15760N 09/99 TERMINAL HEATING AND COOLING UNITS
15768N 09/99 ELECTRIC SPACE HEATING EQUIPMENT
15801N 09/99 INDUSTRIAL VENTILATION AND EXHAUST
15810N 09/99 DUCTWORK AND DUCTWORK ACCESSORIES
15845A 12/01 ENERGY RECOVERY SYSTEMS
15846A 12/01 HEAT RECOVERY BOILERS
15848A 12/01 THERMAL ENERGY STORAGE UNITS: ICE-ON-COIL
15860a 12/01 CHEMICAL, BIOLOGICAL, AND RADIOLOGICAL (CBR) AIR FILTRATION SYSTEM
15861N 09/99 MECHANICAL CYCLONE DUST COLLECTOR OF FLUE GAS PARTICULATES
15862N 09/99 ELECTROSTATIC DUST COLLECTOR OF FLUE GAS PARTICULATES
15863N 09/99 FABRIC FILTER DUST COLLECTOR OF FLY ASH PARTICLES IN FLUE GAS
15864N 09/99 DUST AND GAS COLLECTOR, DRY SCRUBBER AND FABRIC FILTER TYPE
15895A 01/02 AIR SUPPLY, DISTRIBUTION, VENTILATION, AND EXHAUST SYSTEM
15901N 09/99 SPACE TEMPERATURE CONTROL SYSTEMS
15910N 09/01 DIRECT DIGITAL CONTROL SYSTEMS
15940A 12/01 OVERHEAD VEHICLE TAILPIPE [AND WELDING FUME] EXHAUST REMOVAL SYSTEM(S)
15950A 12/01 HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEMS
15950N 08/00 HVAC TESTING/ADJUSTING/BALANCING
15951A 12/01 DIRECT DIGITAL CONTROL FOR HVAC
15951N 09/99 TESTING INDUSTRIAL VENTILATION SYSTEMS
15990A 12/01 TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS
15995A 12/01 COMMISSIONING OF HVAC SYSTEMS

DIVISION 16 - ELECTRICAL

16050N 02/01 BASIC ELECTRICAL MATERIALS AND METHODS
16070A 04/99 SEISMIC PROTECTION FOR ELECTRICAL EQUIPMENT
16081N 01/01 APPARATUS INSPECTION AND TESTING
16113A 11/92 UNDERFLOOR DUCT SYSTEM
16115A 11/92 UNDERFLOOR RACEWAY SYSTEM (CELLULAR STEEL FLOOR)
16120A 11/91 INSULATED WIRE AND CABLE
16130N 09/99 UNDERFLOOR RACEWAY SYSTEM
16145N 09/99 480 V PIER POWER OUTLET ASSEMBLIES
16221A 11/92 ELECTRIC MOTORS, 3-PHASE VERTICAL INDUCTION TYPE
16222A 09/93 ELECTRIC MOTORS, 3-PHASE VERTICAL SYNCHRONOUS TYPE
16230N 09/99 DIESEL-ELECTRIC GENERATORS (DESIGN 1) 500 TO 2,500 KW - PRIME DUTY
16231N 09/99 DIESEL-ELECTRIC GENERATORS (DESIGN 2) 2,501 KW OR LARGER - PRIME DUTY
16232N 09/00 STANDBY DIESEL-ELECTRIC GENERATORS (DESIGN 3) 301 TO 1,000 KW
16233N 09/99 STANDBY DIESEL-ELECTRIC GENERATORS (DESIGN 4) 1,001 KW OR LARGER
16234N 09/99 DIESEL ENGINE-GENERATOR SETS - PRIME AND STANDBY - 10 TO 500 KW
16236N 09/00 MOTOR-GENERATOR SETS, 400 HERTZ (HZ)
16237N 01/01 SINGLE OPERATION GENERATOR SETS
16261N 09/99 VARIABLE FREQUENCY DRIVE SYSTEMS UNDER 600 VOLTS
16262N 09/99 INSTALLATION OF UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEM
16263A 08/01 DIESEL-GENERATOR SET STATIONARY 100-2500 KW, WITH AUXILIARIES
16264A 08/01 DIESEL-GENERATOR SET, STATIONARY 15-300 KW, STANDBY APPLICATIONS
16265A 09/98 UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEM ABOVE 15 KVA CAPACITY
16268N 03/01 400-HERTZ (HZ) SOLID STATE FREQUENCY CONVERTER
16272N 01/01 THREE-PHASE PAD-MOUNTED TRANSFORMERS
16273N 01/01 SINGLE-PHASE PAD-MOUNTED TRANSFORMERS

16280N 09/99 RADIO FREQUENCY INTERFERENCE POWER LINE FILTERS
16301N 01/01 OVERHEAD TRANSMISSION AND DISTRIBUTION
16302N 09/99 UNDERGROUND TRANSMISSION AND DISTRIBUTION
16311A 05/01 MAIN ELECTRIC SUPPLY STATION AND SUBSTATION
16341N 03/01 SF6 INSULATED PAD-MOUNTED SWITCHGEAR
16360N 01/01 SECONDARY UNIT SUBSTATIONS
16361N 02/01 PRIMARY UNIT SUBSTATION
16370A 05/01 ELECTRICAL DISTRIBUTION SYSTEM, AERIAL
16375A 05/01 ELECTRICAL DISTRIBUTION SYSTEM, UNDERGROUND
16402N 03/01 INTERIOR DISTRIBUTION SYSTEM
16403A 08/95 MOTOR CONTROL CENTERS, SWITCHBOARDS AND PANELBOARDS
16404A 11/92 480-VOLT STATION SERVICE SWITCHGEAR AND TRANSFORMERS
16407N 09/99 MARINA ELECTRICAL WORK
16410A 07/01 AUTOMATIC TRANSFER SWITCH AND BY-PASS/ISOLATION SWITCH
16410N 08/00 AUTOMATIC TRANSFER SWITCHES
16415A 11/01 ELECTRICAL WORK, INTERIOR
16442N 03/01 SWITCHBOARDS AND SWITCHGEAR
16475A 10/96 COORDINATED POWER SYSTEM PROTECTION
16510N 03/01 INTERIOR LIGHTING
16520N 03/01 EXTERIOR LIGHTING
16522N 03/01 AIRFIELD LIGHTING
16525A 09/92 HELIPAD LIGHTING AND VISUAL NAVIGATION AIDS
16526A 08/01 AIRFIELD AND HELIPORT LIGHTING AND VISUAL NAVIGATION AIDS
16528A 05/01 EXTERIOR LIGHTING INCLUDING SECURITY AND CCTV APPLICATIONS
16553N 09/99 SURGICAL LIGHTING FIXTURES
16665A 07/89 STATIC ELECTRICITY PROTECTION SYSTEM
16710A 04/97 PREMISES DISTRIBUTION SYSTEM
16710N 09/99 STRUCTURED TELECOMMUNICATIONS CABLING AND PATHWAY SYSTEM
16711A 11/01 TELEPHONE SYSTEM, OUTSIDE PLANT
16713N 03/01 FIBER OPTIC (FO) OUTSIDE PLANT (OSP) MEDIA
16720N 09/99 ADMINISTRATIVE TELEPHONE EQUIPMENT, INSIDE PLANT
16721A 05/99 INTERCOMMUNICATION SYSTEM
16721N 09/99 TELEPHONE DISTRIBUTION SYSTEM, OUTSIDE PLANT
16722N 09/99 PIER TELEPHONE DISTRIBUTION SYSTEMS
16725N 09/00 NURSE CALL SYSTEM
16750A 07/89 NURSE CALL SYSTEM
16751A 08/20 CLOSED CIRCUIT TELEVISION SYSTEMS
16755A 04/01 RADIO PAGING SYSTEM
16768A 08/94 FIBER OPTIC DATA TRANSMISSION SYSTEM
16770A 07/89 RADIO AND PUBLIC ADDRESS SYSTEMS
16782N 09/99 [MASTER] [COMMUNITY] ANTENNA TELEVISION SYSTEM
16783N 03/01 COMMUNITY ANTENNA TELEVISION (CATV) SYSTEMS
16785a 10/01 TELEVISION SIGNAL RECEPTION SYSTEM
16790A 03/89 STAND-ALONE ONE-WAY RADIO CONTROL SYSTEM
16792A 12/96 WIRE LINE DATA TRANSMISSION SYSTEM
16794A 04/91 COAXIAL CABLE DATA TRANSMISSION MEDIA
16797A 07/94 ONE-WAY FM RADIO CONTROL/UTILITY MONITORING & CONTROL SYSTEM (UMCS)
16798A 03/89 TWO-WAY RADIO DATA TRANSMISSION SYSTEM
16815a 10/01 CABLE TELEVISION PREMISES DISTRIBUTION SYSTEM
16822N 09/99 INTERCOMMUNICATION SYSTEM
16905A 09/93 ELECTRICAL EQUIPMENT FOR GATE HOIST

-- End of Master Table of Contents --

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ATTACHMENT NO. 4

UNEDITED GUIDE SPECIFICATIONS - OMAHA DISTRICT

The following unedited Omaha District guide specifications are attached. Copies of these sections will be furnished to the successful Contractor (in Specsintact software), after Contract Award.

01356	STORM WATER POLLUTION PREVENTION MEASURES
01565	NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUTION SITES
02210	GRADING
02560	(COLORADO) PAVEMENTS FOR SMALL PROJECTS

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SECTION 01356

STORM WATER POLLUTION PREVENTION MEASURES

11/01

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SECTION 01356

STORM WATER POLLUTION PREVENTION MEASURES
11/01

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 448	(1998) Sizes of Aggregate for Road and Bridge Construction
ASTM D 4873	(2001) Identification, Storage, and Handling of Geosynthetic Rolls and Samples

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M 288	(2000) Geotextile for Highway Applications

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 01355 ENVIRONMENTAL PROTECTION, and the requirements of the National Pollution Discharge Elimination System (NPDES) permit specified in Section 01565 (FEDERAL FACILITIES COLORADO) NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not haveing 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

1.4 EROSION AND SEDIMENT CONTROLS

The controls and measures required by the Contractor are described in the Storm Water Pollution Prevention Plans (SWPPP) and to Section 01565 (FEDERAL FACILITIES COLORADO) NPDES PERMIT REQUIREMENTS FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES.

PART 2 PRODUCTS

2.1 COMPONENTS FOR SILT FENCES

2.1.1 Geotextile

The geotextile shall comply with the requirements of AASHTO M 288 for temporary silt fence.

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 3 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 geotextile 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 geotextile.

2.1.4 Identification Storage and Handling

Geotextile shall be identified, stored and handled in accordance with ASTM D 4873.

2.1.5 Support Mesh

Support mesh shall be 14-1/2 gage or heavier steel wire with a mesh spacing of 6 by 6 inch or a prefabricated polymeric mesh of equivalent strength.

2.2 Erosion Control Blankets

Erosion control blankets shall be a machine-produced mat with a biodegradable agricultural straw matrix (approximately 0.50 lb/sq yd) and photodegradable netting on each side. The blanket shall be sewn together with degradable thread. Installation staple patterns shall be clearly marked on the erosion control blanket with environmentally safe paint.

2.3 COMPONENTS FOR SEDIMENT TRAP

Coarse aggregate shall conform to ASTM D 448, Size 3, 357, or 5. Minor variations from the gradations specified will be permitted. Stone for riprap shall consist of field stone or rough unhewn quarry stone of approximately rectangular shape. The stone shall be hard and angular and of such quality that it will not disintegrate on exposure to water or weathering. The specific gravity of individual stones shall be at least 2.5. Riprap stones shall weigh between 50 and 150 pounds each, except that approximately 10 percent may weigh 50 pounds or less. At least 60 percent shall weight more than 100 pounds. Geotextile shall conform to paragraph GEOTEXTILES.

2.4 COMPONENTS FOR INLET PROTECTION

Aggregates for gravel filter should be sized to get the greatest amount of filtering action possible (by using smaller-sized stone), while not creating significant ponding problems.

2.5 STONE CONSTRUCTION ENTRANCE

Aggregate for construction entrance shall conform to ASTM D 448, Size 1. Minor variations from the gradation specified will be permitted. Geotextile shall conform to paragraph GEOTEXTILES.

2.6 ROCK CHECK DAMS

Coarse aggregate shall conform to ASTM D 448 size number 1 or approved equal. Riprap shall consist of field stone or rough unhewn quarry stone of approximately rectangular shape. Riprap shall be hard and angular. The specific gravity of individual stones shall be at least 2.5. Concrete rubble may be used provided it has a density of at least 150 pcf. Individual stones shall have a weight of 50 to 150 lbs except that a maximum of 10 percent of stone may weigh less than 50 lbs. At least 60 percent of stones shall weigh more than 100 lbs.

2.7 GEOTEXTILES

Geotextile for other than silt fence shall comply with the requirements of AASHTO M 288 for a separation geotextile.

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 6 inches wide and 8 inches deep on the upslope side of the location of the silt fence. The 6-inch by 8-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 Sediment Trap

The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat. Fill material for the embankment shall be placed in accordance with Section 02300 EARTHWORK. A geotextile shall be placed between the riprap and subgrade.

3.3 Stone Construction Entrance

The area of the entrance shall be cleared of all vegatation, roots, and other objectionable material. The aggregate layer shall have a minimum total thickness of 6 inches. A geotextile shall be placed beneath aggregate for the full width and length of the entrance. A minimum of 3 inches of the aggregate shall be placed in a cut section to provide stability and secure the geotextile. If conditions on the site are such that the majority of the mud is not removed by the vehicles traveling over the stone, then the tires of the vehicles shall be washed before entering

the road. Wash water must be carried away from the entrance to an approved settling area to remove sediment. A wash rack may also be installed for washing of vehicles.

3.4 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. Maintenance of protective measures shall conform to the requirements in the SWPPP.

3.5 INSPECTIONS

3.5.1 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. Inspection of protective measures shall conform to the requirements in the SWPPP.

3.5.2 Inspections Details

Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures 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.

3.5.3 Inspection Reports

For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention measures, 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.

-- End of Section --

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SECTION 01565

(FEDERAL FACILITIES COLORADO) NPDES PERMIT REQUIREMENTS
FOR STORM WATER DISCHARGES
FROM CONSTRUCTION SITES
03/01

Attachments: Endangered Species/Critical Habitat Letter of Determination
Storm Water General Permit For Construction Activities
Notice of Intent
Notice of Termination

PART 1 GENERAL

1.1 REFERENCES (Not Applicable)

1.2 SUBMITTALS (Not Applicable)

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall be responsible for implementing the terms and requirements of the attached Storm Water General Permit For Construction Activities (Permit No. COR10*##F) as specified below. The Government and the Contractor shall be considered co-permittees. The Government has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications. The Contractor shall have day-to-day operational control of those activities which are necessary to ensure compliance with the requirements specified herein. The Government shall be responsible for all submissions to the EPA. The Government shall retain the official copy of all documents pertaining to compliance with the permit during construction. Designated critical habitat and/or listed species are located in the project area. However, storm water discharges and storm water discharge-related activities are not likely to adversely affect the listed species and/or critical habitat. See Section 01355 ENVIRONMENTAL PROTECTION for additional requirements.

3.2 IMPLEMENTATION

3.2.1 Notice of Intent

The Contractor shall complete and sign a Notice of Intent (NOI) in accordance with NPDES Permit No. COR10*##F. The Contractor's NOI shall be furnished to the Contracting Officer at least 7 calender days prior to the commencement of construction activities. The Government shall submit the Contractor's and Government's NOI's to the EPA. The Government will not submit the NOI's to the EPA until the Storm Water Pollution Prevention Plan has been accepted. The Contractor may not begin land disturbance activities until authorized by the Contracting Officer. The Status of Owner/Operator shall be "F" for both the Contractor and the Government.

The Contractor shall check the box marked (d) concerning eligibility with regard to protection of endangered species.

3.2.2 Storm Water Pollution Prevention Plan

3.2.2.1 General

The Contractor shall be responsible for preparing the Storm Water Pollution Prevention Plan (SWPPP). The Contractor shall be responsible for implementing, maintaining and updating the SWPPP (including Site Map) during construction. Unless otherwise indicated, the Contractor shall be responsible for implementing all measures described in the SWPPP. The Contractor shall maintain the following records and attach to the SWPPP: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated. The Government shall keep the official plan at the site. The SWPPP shall be signed by the Government and the Contractor. If major changes to the SWPPP are required during construction, the SWPPP shall be recertified by the Government and the Contractor.

3.2.2.2 Acceptance of SWPPP

Acceptance of the SWPPP 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 to the SWPPP if the Contracting Officer determines that environmental protection requirements are not being met.

3.2.2.3 Notification of Changes

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

3.2.3 Posting Notice

The Contractor shall indicate the NPDES permit number, name and telephone number of a local contact person, and a brief description of the project near the main entrance of the construction site in accordance with Part IV.B.2 of the general permit.

3.2.4 Inspections and Reporting

The Contractor shall be responsible for all inspections specified in the SWPPP and the general permit. The Contractor shall also prepare and sign all reports summarizing the inspections as required by the SWPPP and the general permit. Copies of inspection reports shall be furnished to the Contracting Officer for attachment to the SWPPP no more than 2 days after each inspection. The Contractor shall notify the Contracting Officer within 24 hours if an inspection identifies any incidents of non-compliance with the SWPPP and the general permit.

3.2.5 Maintenance

The Contractor shall be responsible for maintaining all erosion and sediment control measures and other protective measures identified in the

SWPPP in an effective operating condition. The Government reserves the right to require the Contractor to perform maintenance on erosion and sediment control measures and other protective measures if the Contracting Officer determines that environmental protection requirements are not being met.

3.2.6 Notice of Termination

The Contractor shall notify the Contracting Officer within 24 hours after final stabilization on all portions of the site has been achieved in accordance with Part I.D.2. of the permit. The Contractor shall complete and sign a Notice of Termination (NOT) in accordance with NPDES Permit No. COR10*##F. The Contractor's NOT shall be furnished to the Contracting Officer within 5 calendar days after final stabilization (as defined in the permit) has been achieved on all portions of the site. The Government shall submit the Contractor's and Government's NOTs to the EPA.

3.2.7 Retention of Records

The Government shall be responsible for retaining copies of the SWPPP and all reports in accordance with NPDES Permit No. COR10*##F.

3.2.8 Continuation of Expired Permit

If the current NPDES general permit expires prior to completion of construction, the Contractor shall comply with the conditions of the new permit.

-- End of Section --

DEPARTMENT OF THE AIR FORCE

10TH CIVIL ENGINEER GROUP

USAF ACADEMY COLORADO

28 January 2002

MEMORANDUM FOR COMMANDER
ARMY CORPS OF ENGINEERS, OMAHA DISTRICT,
ATTN: CENWO-ED-DI (DENNIS)
106 SOUTH 15 STREET
OMAHA NE 68102-1618

FROM: 510 CES/CEV
8120 Edgerton Drive, Suite 40
USAF Academy CO 80840-2400

SUBJECT: National Pollution Discharge Elimination System (NPDES)--Consideration of Endangered Species (Upgrade Water Distribution System—Cadet Area (Project SQPZ044014))

1. In compliance with EPA's National Pollution Discharge Elimination System (NPDES) program for Storm Water Discharge General Permits on construction sites with land disturbance greater than five acres, the USAF Academy has completed the following steps regarding listed threatened and endangered species and their critical habitat:

a. Step One. The project site is located in El Paso County, Colorado. The site is not located in or near any designated critical habitat. Critical habitat in the county has only been designated for the Mexican Spotted Owl, and occurs far south of the Academy.

(1) Mexican Spotted Owl (S*trix occidentalis lucida*), listed without critical habitat: 58 FR 14271, 16 March 1993; critical habitat designated in Front Range of eastern Colorado: 66 CFR 8530.

(2) Bald Eagle (*Haliaeetus leucocephalus*), listed without critical habitat: 32 FR 4001, 11 March 1967.

(3) Greenback Cutthroat Trout (*Oncorhynchus clarki stomias*), listed without critical habitat: 32 FR 4001, 11 March 1967.

(4) Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*), listed without critical habitat: 63 FR 92 (pages 26517-26530), 13 May 1998.

(5) Ute Ladies'-Tresses (*Spiranthes diluvialis*), listed without critical habitat: 57 FR 2053, 17 January1992.

b. Step Two. Five listed species are known to occur or are possible in El Paso County, Colorado: Bald Eagle, Mexican Spotted Owl, Greenback Cutthroat Trout, Preble's Meadow

Jumping Mouse (PMJM), and Ute Ladies'-Tresses. The PMJM occurs on the Academy and a Conservation Agreement and Plan have been entered into with the US Fish and Wildlife Service to conserve and protect the species. Remnant experimental populations of the Greenback Cutthroat Trout may occur in non-potable reservoirs #2, #3, and #4. These fish were introduced several years ago as part of the recreational fishery program. Bald eagles likely migrate across the Academy property, but are not a resident species. Surveys have been conducted for Ute Ladies'-tresses, but no plants were identified on the base.

c. Step Three. The Preble's Meadow Jumping Mouse occurs in Lehman Run, which bisects the project area below Academy Drive and Faculty Drive. The reservoirs containing Greenback cutthroat trout are not receiving waters of possible surface discharges from the project site.

c. Step Four. No adverse impacts to the Preble's population in Lehman Run are anticipated from the project. An Endangered Species Act consultation (Biological Opinion dated April 12, 2000) was conducted on the Conservation Agreement and Plan which authorizes infrastructure repair and maintenance activities in mouse habitat. As per the agreement, project impacts will be fully mitigated.

d. Step Five. Compliance with the Conservation Agreement's mitigation plan, and the terms and conditions of the Biological Opinion, will avoid any adverse impacts to Preble's or its habitat.

e. Step Six. All Endangered Species Act consultation requirements were addressed by the April 12, 2000 Biological Opinion (ES/GJ-6-CO-00-F-009).

2. If you have any further questions concerning possible project impacts on listed species, please contact Dr. Brian Mihlbachler at (719) 333-3308.

JOSHUA A. KELLAR
Chief, Environmental Flight
510th Civil Engineer Squadron

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18TH STREET, SUITE 500
DENVER, COLORADO 80202-2466

STORM WATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES

For Federal Facilities in the State of Colorado, except those located on Indian Country Lands

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et.seq.), except as provided in Part I.B.3 of this permit, operators of construction activities located in an area specified in Part I.A. and who submit a Notice of Intent in accordance with Part II, are authorized to discharge pollutants to waters of the United States in accordance with the conditions and requirements set forth herein.

This permit shall become effective on February 17, 1998

This permit and the authorization to discharge shall expire at midnight, February 17, 2003

Signed and issued this 15th day of January, 1998

Kerrigan Clough

Authorized Permitting Official

Kerrigan G. Clough, Assistant Regional Administrator
Office of Pollution Prevention, State and Tribal Assistance
Title

NOTE-THIS PAGE WILL BE REPLACED BY COPY OF SIGNED PAGE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18TH STREET, SUITE 500
DENVER, COLORADO 80202-2466

STORM WATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES

For Federal Facilities in the State of Colorado, except those located on Indian Country Lands

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et.seq.), except as provided in Part I.B.3 of this permit, operators of construction activities located in an area specified in Part I.A. and who submit a Notice of Intent in accordance with Part II, are authorized to discharge pollutants to waters of the United States in accordance with the conditions and requirements set forth herein.

This permit shall become effective on **February 17, 1998**

This permit and the authorization to discharge shall expire at midnight, **February 17, 2003**

Signed and issued this 15th day of January, 1998

_____
Authorized Permitting Official

Kerrigan G. Clough, Assistant Regional Administrator
Office of Pollution Prevention, State and Tribal Assistance
Title

NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Preface

EPA's reissued construction general permits (CGP) were published in the Federal Register on February 17, 1998 (see 63 FR 7857). That document included the conditions for 38 separate permits involving 7 different Regions of EPA. Seven of those permits involve EPA Region VIII and this permit is one of them. In order to make this permit easier to read and understand, it has been reformatted from the style used in the Federal Register and limited to conditions and information that only apply to the area covered by this permit. References, conditions and information pertaining to all other Regions, States and Tribes that were included in the Federal Register, but not applicable to the areas covered by this permit, were removed. The conditions in this permit mimic the permits published in the Federal Register in all other ways. Persons that want CGP information for areas not covered by this permit should refer to the February 17, 1998 Federal Register or one of the other permits prepared by EPA Region VIII.

Part I. COVERAGE UNDER THIS PERMIT

A. Permit Area.

Federal Facilities in the State of Colorado, except those located on Indian Country lands.

B. Eligibility.

1. Permittees are authorized to discharge pollutants in storm water runoff associated with construction activities as defined in 40 CFR 122.26(b)(14)(x) and those construction site discharges designated by the Director as needing a storm water permit under 122.26(a)(1)(v) or under 122.26(a)(9) and 122.26(g)(1)(i). Discharges identified under Part I.B.3 are excluded from coverage. Any discharge authorized by a different NPDES permit may be commingled with discharges authorized by this permit.

2. This permit also authorizes storm water discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:

   a. the support activity is directly related to a construction site that is required to have NPDES permit coverage for discharges of storm water associated with construction activity;

   b. the support activity is not a commercial operation serving multiple unrelated construction projects by different operators, and does not operate beyond the completion of the construction activity at the last construction project it supports; and

   c. appropriate controls and measures are identified in a storm water pollution prevention plan covering the discharges from the support activity areas.

3. Limitations on Coverage.

a. Post Construction Discharges. This permit does not authorize storm water discharges that originate from the site after construction activities have been completed and the site, including any temporary support activity site, has undergone final stabilization. Industrial post-construction storm water discharges may need to be covered by a separate NPDES permit.

b. Discharges Mixed with Non-Storm Water. This permit does not authorize discharges that are mixed with sources of non-storm water, other than those discharges which are identified in Part III.A.2. or 3. (exceptions to prohibition on non-storm water discharges) and are in compliance with Part IV.D.5 (non-storm water discharges).

c. Discharges Covered by Another Permit. This permit does not authorize storm water discharges associated with construction activity that have been covered under an individual permit or required to obtain coverage under an alternative general permit in accordance with Part VI.L.

d. Discharges Threatening Water Quality. This permit does not authorize storm water discharges from construction sites that the Director (EPA) determines will cause, or have reasonable potential to cause or contribute to, violations of water quality standards. Where such determinations have been made, the Director may notify the operator(s) that an individual permit application is necessary in accordance with Part VI.L. However, the Director may authorize coverage under this permit after appropriate controls and implementation procedures designed to bring the discharges into compliance with water quality standards have been included in the storm water pollution prevention plan;

e. Storm water discharges and storm water discharge-related activities that are not protective of Federally listed endangered and threatened ("listed") species or designated critical habitat ("critical habitat").

(1) For the purposes of complying with the Part I.B.3.e. eligibility requirements, "storm water discharge-related activities" include:

(a) activities which cause, contribute to, or result in point source storm water pollutant discharges, including but not limited to: excavation, site development, grading and other surface disturbance activities; and

(b) measures to control storm water including the siting, construction and operation of best management practices (BMPs) to control, reduce or prevent storm water pollution.

(2) Coverage under this permit is available only if the applicant certifies that it meets at least one of the criteria in paragraphs (a)-(d) below. Failure to continue to meet one of these criteria during the term of the permit will render a permittee ineligible for coverage under this permit.

(a) The storm water discharges and storm water discharge-related activities are not likely to adversely affect listed species or critical habitat; or

(b) Formal or informal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service (the "Services") under section 7 of the Endangered Species Act (ESA) has been concluded which addresses the effects of the applicant's storm water discharges and storm water discharge-related activities on listed species and critical

3. Limitations on Coverage. (Continued)

habitat and the consultation results in either a no jeopardy opinion or a written concurrence by the Service(s) on a finding that the applicant's storm water discharges and storm water discharge-related activities are not likely to adversely affect listed species or critical habitat. A section 7 consultation may occur in the context of another Federal action (e.g., a ESA section 7 consultation was performed for issuance of a wetlands dredge and fill permit for the project, or as part of a National Environmental Policy Act (NEPA) review); or

(c) The applicant's construction activities are authorized under section 10 of the ESA and that authorization addresses the effects of the applicant's storm water discharges and storm water discharge-related activities on listed species and critical habitat; or

(d) The applicant's storm water discharges and storm water discharge-related activities were already addressed in another operator's certification of eligibility under Part I.B.3.e.(2)(a), (b), or (c) which included the applicant's project area. By certifying eligibility under Part I.B.3.e.(2)(d), the applicant agrees to comply with any measures or controls upon which the other operator's certification under Part I.B.3.e.(2)(a), (b) or (c) was based.

(3) All applicants must follow the procedures provided at Addendum A of this permit when applying for permit coverage.

(4) The applicant must comply with any applicable terms, conditions or other requirements developed in the process of meeting eligibility requirements of Part I.B.3.e.(2)(a), (b), (c), or (d) above to remain eligible for coverage under this permit. Such terms and conditions must be incorporated in the applicant's storm water pollution prevention plan.

(5) Applicants who choose to conduct informal consultation to meet the eligibility requirements of Part I.B.3.e.(2)(b) are automatically designated as non-Federal representatives under this permit. See 50 CFR 402.08. Applicants who choose to conduct informal consultation as a non-Federal representatives must notify EPA and the appropriate Service office in writing of that decision.

(6) This permit does not authorize any storm water discharges where the discharges or storm water discharge-related activities cause prohibited "take" (as defined under section 3 of the Endangered Species Act and 50 CFR 17.3) of endangered or threatened species unless such takes are authorized under sections 7 or 10 of the Endangered Species Act.

(7) This permit does not authorize any storm water discharges where the discharges or storm water discharge-related activities are likely to jeopardize the continued existence of any species that are listed or proposed to be listed as endangered or threatened under the ESA or result in the adverse modification or destruction of habitat that is designated or proposed to be designated as critical under the ESA.

f. Storm water Discharges and Storm Water Discharge-Related Activities with Unconsidered Adverse Effects on Historic Properties. (Reserved)

C. Obtaining Authorization.

1. In order for storm water discharges from construction activities to be authorized under this general permit, an operator must:

   a. meet the Part I.B eligibility requirements;

   b. except as provided in Parts II.A.5 and II.A.6, develop a storm water pollution prevention plan (SWPPP) covering either the entire site or all portions of the site for which they are operators (see definition in Part IX.N) according to the requirements in Part IV. A "joint" SWPPP may be developed and implemented as a cooperative effort where there is more than one operator at a site; and

   c. submit a Notice of Intent (NOI) in accordance with the requirements of Part II, using an NOI form provided by the Director (or a photocopy thereof, see Addendum C, page 45). Only one NOI need be submitted to cover all of the permittee's activities on the common plan of development or sale (e.g., you do not need to submit a separate NOI for each separate lot in a residential subdivision or for two separate buildings being constructed at a manufacturing facility, provided your SWPPP covers each area for which you are an operator). The SWPPP must be implemented upon commencement of construction activities.

2. Any new operator on site, including those who replace an operator who has previously obtained permit coverage, must submit an NOI to obtain permit coverage.

3. Unless notified by the Director to the contrary, operators who submit a correctly completed NOI in accordance with the requirements of this permit are authorized to discharge storm water from construction activities under the terms and conditions of this permit two (2) days after the date that the NOI is postmarked. The Director may deny coverage under this permit and require submittal of an application for an individual NPDES permit based on a review of the NOI or other information (see Part VI.L).

D. Terminating Coverage.

1. Permittees wishing to terminate coverage under this permit must submit a Notice of Termination (NOT) in accordance with Part VIII of this permit (see Addendum D, page 47). Compliance with this permit is required until an NOT is submitted. The permittee's authorization to discharge under this permit terminates at midnight of the day the NOT is signed.

2. All permittees must submit an NOT within thirty (30) days after one or more of the following conditions have been met:

   a. final stabilization (see definition Part IX.I) has been achieved on all portions of the site for which the permittee is responsible (including if applicable, returning agricultural land to its pre-construction agricultural use);

   b. another operator/permittee has assumed control according to Part VI.G.2.c. over all areas of the site that have not been finally stabilized; or

D. Terminating Coverage. (Continued)

c. for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

Enforcement actions may be taken if a permittee submits an NOT without meeting one or more of these conditions.

Part II. NOTICE OF INTENT REQUIREMENTS

A. Deadlines for Notification.

1. Except as provided in Parts II.A.3, II.A.4, II.A.5 or II.A.6 below, parties defined as operators (see definition in Part IX.N) due to their operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications, must submit a Notice of Intent (NOI) in accordance with the requirements of this Part at least two (2) days prior to the commencement of construction activities (i.e., the initial disturbance of soils associated with clearing, grading, excavation activities, or other construction activities).

2. Except as provided in Parts II.A.3, II.A.4, II.A.5 or II.A.6 below, parties defined as operators (see definition in Part IX.N) due to their day-to-day operational control over activities at a project which are necessary to ensure compliance with a storm water pollution prevention plan or other permit conditions (e.g., general contractor, erosion control contractor) must submit an NOI at least two (2) days prior to commencing work on-site.

3. For storm water discharges from construction projects where the operator changes, including instances where an operator is added after an NOI has been submitted under Parts II.A.1 or II.A.2, the new operator must submit an NOI at least two (2) days before assuming operational control over site specifications or commencing work on-site.

4. Operators are not prohibited from submitting late NOIs. When a late NOI is submitted, authorization is only for discharges that occur after permit coverage is granted. The Agency reserves the right to take appropriate enforcement actions for any unpermitted activities that may have occurred between the time construction commenced and authorization of future discharges is granted (typically 2 days after a complete NOI is submitted).

5. Operators of on-going construction projects as of the effective date of this permit which received authorization to discharge for these projects under the 1992 baseline construction general permit must:

   a. submit an NOI according to Part II.B. within 90 days of the effective date of this permit. If the permittee is eligible to submit a Notice of Termination (e.g., construction is finished and final stabilization has been achieved) before the 90th day, a new NOI is not required to be submitted;

   b. for the first 90 days from the effective date of this permit, comply with the terms and conditions of the 1992 baseline construction general permit they were previously authorized under; and

   c. update their storm water pollution prevention plan to comply with the requirements of Part IV within 90 days after the effective date of this permit.

A. Deadlines for Notification. (Continued)

6. Operators of on-going construction projects as of the effective date of this permit which did **not** receive authorization to discharge for these projects under the 1992 baseline construction general permit must:

   a. prepare and comply with an interim storm water pollution prevention plan in accordance with the 1992 baseline construction general permit prior to submitting an NOI;

   b. submit a NOI according to Part II.B; and

   c. update their storm water pollution prevention plan to comply with the requirements of Part IV within 90 days after the effective date of this permit.

B. Contents of Notice of Intent (NOI).

1. The NOI form shall be signed in accordance with Part VI.G of this permit and shall include the following information:

   a. the name, address, and telephone number of the operator filing the NOI for permit coverage;

   b. an indication of whether the operator is a Federal, State, Tribal, private, or other public entity;

   NOTE: All projects on Federal Facilities in Colorado must have an "F" in the Status of Owner/Operator box on the NOI. Even private contracting companies must put an "F" in that box so that we can tell its a Federal Facility project, thus regulated by EPA not the State of Colorado.

   c. the name (or other identifier), address, county, and latitude/longitude of the construction project or site;

   d. an indication of whether the project or site is located on Indian Country lands;

   e. confirmation that a storm water pollution prevention plan (SWPPP) has been developed or will be developed prior to commencing construction activities, and that the SWPPP will be compliant with any applicable local sediment and erosion control plans. Copies of SWPPPs or permits should not be included with the NOI submission;

   f. optional information: the location where the SWPPP may be viewed and the name and telephone number of a contact person for scheduling viewing times;

   g. the name of nearest named the receiving water(s);

   h. estimates of project start and completion dates, and estimates of the number of acres of the site on which soil will be disturbed (if less than 1 acre, enter "1");

   i. based on the instructions in Addendum A, whether any listed or proposed threatened or endangered species, or designated critical habitat, are in proximity to the storm water discharges or storm water discharge-related activities to be covered by this permit; and

B. Contents of Notice of Intent (NOI). (Continued)

j. under which section(s) of Part I.B.3.e. (Endangered Species) the applicant is certifying eligibility.

Note that as of the effective date of this permit, reporting of information relating to the preservation of historic properties has been reserved and is not required at this time. Such reservation in no way relieves applicants or permittees from any otherwise applicable obligations or liabilities related to historic preservation under State, Tribal or local law. After further discussions between EPA and the Advisory Council on Historic Preservation, the Agency may modify the permit. Any such modification may affect future Notice of Intent reporting requirements.

C. Where to Submit.

1. NOIs must be signed in accordance with Part VI.G. and sent to the following address:

Storm Water Notice of Intent (4203)
US EPA
401 M. Street, SW
Washington, D.C. 20460

Part III. SPECIAL CONDITIONS, MANAGEMENT PRACTICES, AND OTHER NON-NUMERIC LIMITATIONS

A. Prohibition on Non-Storm Water Discharges.

1. Except as provided in Parts I.B.2 or 3 and III.A.2 or 3, all discharges covered by this permit shall be composed entirely of storm water associated with construction activity.

2. Discharges of material other than storm water that are in compliance with an NPDES permit (other than this permit) issued for that discharge may be discharged or mixed with discharges authorized by this permit.

3. The following non-storm water discharges from active construction sites are authorized by this permit provided the non-storm water component of the discharge is in compliance with Part IV.D.5 (non-storm water discharges): discharges from fire fighting activities; fire hydrant flushings; waters used to wash vehicles where detergents are not used; water used to control dust in accordance with Part IV.D.2.c.(2); potable water sources including waterline flushings; routine external building wash down which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated ground water or spring water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

B. Releases in Excess of Reportable Quantities. The discharge of hazardous substances or oil in the storm water discharge(s) from a facility shall be prevented or minimized in accordance with the applicable storm water pollution prevention plan for the facility. This permit does not relieve the permittee of the reporting requirements of 40 CFR 110, 40 CFR 117 and 40 CFR 302. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR 110, 40 CFR 117 or 40 CFR 302, occurs during a 24 hour period:

1. The permittee is required to notify the National Response Center (NRC) (800-424-8802; in the Washington, DC, metropolitan area call 202-426-2675) in accordance with the requirements of 40 CFR 110, 40 CFR 117 and 40 CFR 302 as soon as he or she has knowledge of the discharge;

2. The storm water pollution prevention plan required under Part IV of this permit must be modified within 14 calendar days of knowledge of the release to: provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, the plan must be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and the plan must be modified where appropriate.

C. Spills. This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill.

D. Discharge Compliance with Water Quality Standards. Operators seeking coverage under this permit shall not be causing or have the reasonable potential to cause or contribute to a violation of a water quality standard. Where a discharge is already authorized under this permit and is later determined to cause or have the reasonable potential to cause or contribute to the violation of an applicable water quality standard, the Director will notify the operator of such violation(s). The permittee shall take all necessary actions to ensure future discharges do not cause or contribute to the violation of a water quality standard and document these actions in the storm water pollution prevention plan. If violations remain or

D. **Discharge Compliance with Water Quality Standards.** (Continued)

re-occur, then coverage under this permit may be terminated by the Director, and an alternative general permit or individual permit may be issued. Compliance with this requirement does not preclude any enforcement activity as provided by the Clean Water Act for the underlying violation.

E. **Responsibilities of Operators.** Permittees may meet one or both of the operational control components in the definition of "operator" found in Part IX.N. Either Parts III.E.1 or III.E.2 or both will apply depending on the type of operational control exerted by an individual permittee. Part III.E.3 applies to all permittees.

1. Permittees with operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications (e.g., developer or owner), must:

   a. ensure the project specifications that they develop meet the minimum requirements of Part IV (Storm Water Pollution Prevention Plans (SWPPP)) and all other applicable conditions;

   b. ensure that the SWPPP indicates the areas of the project where they have operational control over project specifications (including the ability to make modifications in specifications), and ensure all other permittees implementing portions of the SWPPP impacted by any changes they make to the plan are notified of such modifications in a timely manner; and

   c. ensure that the SWPPP for portions of the project where they are operators indicates the name and NPDES permit number for parties with day-to-day operational control of those activities necessary to ensure compliance with the SWPPP or other permit conditions. If these parties have not been identified at the time the SWPPP is initially developed, the permittee with operational control over project specifications shall be considered to be the responsible party until such time as the authority is transferred to another party (e.g., general contractor) and the plan updated.

2. Permittee(s) with day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., general contractor) must:

   a. ensure that the SWPPP for portions of the project where they are operators meets the minimum requirements of Part IV (Storm Water Pollution Prevention Plan) and identifies the parties responsible for implementation of control measures identified in the plan;

   b. ensure that the SWPPP indicates areas of the project where they have operational control over day-to-day activities;

   c. ensure that the SWPPP for portions of the project where they are operators indicates the name and NPDES permit number of the party(ies) with operational control over project specifications (including the ability to make modifications in specifications);

3. Permittees with operational control over only a portion of a larger construction project (e.g., one of four homebuilders in a subdivision) are responsible for compliance with all applicable terms and conditions of this permit as it relates to their activities on their portion of the construction site, including protection of endangered species and implementation of BMPs and other controls required by the SWPPP. Permittees shall ensure either directly or through coordination with other permittees, that their activities do not render another party's pollution controls ineffective. Permittees must either implement their portions of a common SWPPP or develop and implement their own SWPPP.

Part IV. STORM WATER POLLUTION PREVENTION PLANS

At least one storm water pollution prevention plan (SWPPP) shall be developed for each construction project or site covered by this permit. For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site to prepare and participate in a comprehensive SWPPP is encouraged. Individual operators at a site may, but are not required, to develop separate SWPPPs that cover only their portion of the project provided reference is made to other operators at the site. In instances where there is more than one SWPPP for a site, coordination must be conducted between the permittees to ensure the storm water discharge controls and other measures are consistent with one another (e.g., provisions to protect listed species and critical habitat).

Storm water pollution prevention plans shall be prepared in accordance with good engineering practices. The SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges from the construction site. The SWPPP shall describe and ensure the implementation of practices which will be used to reduce the pollutants in storm water discharges associated with construction activity at the construction site and assure compliance with the terms and conditions of this permit.

When developing SWPPPs, applicants must follow the procedures in Addendum A of this permit to determine whether listed endangered or threatened species or critical habitat would be affected by the applicant's storm water discharges or storm water discharge-related activities. Any information on whether listed species or critical habitat are found in proximity to the construction site must be included in the SWPPP. Any terms or conditions that are imposed under the eligibility requirements of Part I.B.3.e and Addendum A of this permit to protect listed species or critical habitat from storm water discharges or storm water discharge-related activity must be incorporated into the SWPPP. Permittees must implement the applicable provisions of the SWPPP required under this part as a condition of this permit.

A. <u>Deadlines for Plan Preparation and Compliance.</u> The storm water pollution prevention plan shall:

1. be completed prior to the submittal of an NOI to be covered under this permit (except as provided in Parts II.A.5 and II.A.6) updated as appropriate; and

2. provide for compliance with the terms and schedule of the SWPPP beginning with the initiation of construction activities.

B. <u>Signature, Plan Review and Making Plans Available.</u>

1. The SWPPP shall be signed in accordance with Part VI.G, and be retained on-site at the facility which generates the storm water discharge in accordance with Part V (Retention of Records) of this permit.

2. The permittee shall post a notice near the main entrance of the construction site with the following information:

   a. the NPDES permit number for the project or a copy of the NOI if a permit number has not yet been assigned;

   b. the name and telephone number of a local contact person;

   c. a brief description of the project; and

B. **Signature, Plan Review and Making Plans Available.** (Continued)

d. the location of the SWPPP if the site is inactive or does not have an on-site location to store the plan.

If posting this information near a main entrance is infeasible due to safety concerns, the notice shall be posted in a local public building. If the construction project is a linear construction project (e.g., pipeline, highway, etc.), the notice must be placed in a publicly accessible location near where construction is actively underway and moved as necessary. This permit does not provide the public with any right to trespass on a construction site for any reason, including inspection of a site; nor does this permit require that permittees allow members of the public access to a construction site.

3. The permittee shall make SWPPPs available upon request to the Director, a State, Tribal or local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; or the operator of a municipal separate storm sewer receiving discharges from the site. The copy of the SWPPP that is required to be kept on-site or locally available must be made available to the Director for review at the time of an on-site inspection. Also, in the interest of public involvement, EPA encourages permittees to make their SWPPPs available to the public for viewing during normal business hours.

4. The Director may notify the permittee at any time that the SWPPP does not meet one or more of the minimum requirements of this Part. Such notification shall identify those provision of this permit which are not being met by the SWPPP as well as those requiring modification in order to meet the minimum requirements of this Part. Within seven (7) calendar days of receipt of such notification from the Director (or as otherwise provided by the Director), the permittee shall make the required changes to the SWPPP and shall submit to the Director a written certification that the requested changes have been made. The Director may take appropriate enforcement action for the period of time the permittee was operating under a plan that did not meet the minimum requirements of this permit.

C. **Keeping Plans Current.** The permittee must amend the storm water pollution prevention plan whenever:

1. There is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants to the waters of the United States which has not been addressed in the SWPPP; or

2. Inspections or investigations by site operators, local, State, Tribal or Federal officials indicate the SWPPP is proving ineffective in eliminating or significantly minimizing pollutants from sources identified under Part IV.D.1 of this permit, or is otherwise not achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity.

D. **Contents of Plan.** The storm water pollution prevention plan (SWPPP) shall include the following items:

1. **Site Description.** Each SWPPP shall provide a description of potential pollutant sources and other information as indicated below:

a. a description of the nature of the construction activity;

1. **Site Description.** (Continued)

   b. a description of the intended sequence of major activities which disturb soils for major portions of the site (e.g., grubbing, excavation, grading, utilities and infrastructure installation);

   c. estimates of the total area of the site and the total area of the site that is expected to be disturbed by excavation, grading, or other activities including off-site borrow and fill areas;

   d. an estimate of the runoff coefficient of the site for both the pre-construction and post-construction conditions and data describing the soil or the quality of any discharge from the site;

   e. a general location map (e.g., a portion of a city or county map) and a site map indicating the following: drainage patterns and approximate slopes anticipated after major grading activities; areas of soil disturbance; areas which will not be disturbed; locations of major structural and nonstructural controls identified in the SWPPP; locations where stabilization practices are expected to occur; locations of off-site material, waste, borrow or equipment storage areas; surface waters (including wetlands); and locations where storm water discharges to a surface water;

   f. location and description of any discharge associated with industrial activity other than construction, including storm water discharges from dedicated asphalt plants and dedicated concrete plants, which is covered by this permit;

   g. the name of the receiving water(s) and the areal extent and description of wetland or other special aquatic sites (as described under 40 CFR 230.3(q-1)) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project;

   h. a copy of the permit requirements (attaching a copy of this permit is acceptable); and

   i. information on whether listed endangered or threatened species, or critical habitat, are found in proximity to the construction activity and whether such species may be affected by the applicant's storm water discharges or storm water discharge-related activities.

2. **Controls.** Each SWPPP shall include a description of appropriate control measures (i.e., BMPs) that will be implemented as part of the construction activity to control pollutants in storm water discharges. The SWPPP must clearly describe for each major activity identified in Part IV.D.1.b: **a)** appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented; and **b)** which permittee is responsible for implementation (e.g., perimeter controls for one portion of the site will be installed by Contractor A after the clearing and grubbing necessary for installation of the measure, but before the clearing and grubbing for the remaining portions of the site; and perimeter controls will be actively maintained by Contractor B until final stabilization of those portions of the site up-gradient of the perimeter control; and temporary perimeter controls will be removed by the owner after final stabilization). The description and implementation of control measures shall address the following minimum components:

   a. <u>Erosion and Sediment Controls.</u>

      (1) *Short and Long Term Goals and Criteria*:

         (a) The construction-phase erosion and sediment controls should be designed to retain sediment on site to the extent practicable.

(1) *Short and Long Term Goals and Criteria*: (Continued)

(b) All control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the permittee must replace or modify the control for site situations.

(c) If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts (e.g., fugitive sediment in street could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets).

(d) Sediment must be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%.

(e) Litter, construction debris, and construction chemicals exposed to storm water shall be prevented from becoming a pollutant source for storm water discharges (e.g., screening outfalls, picked up daily).

(f) Offsite material storage areas (also including overburden and stockpiles of dirt, borrow areas, etc.) used solely by the permitted project are considered a part of the project and shall be addressed in the SWPPP.

(2) *Stabilization Practices*: The SWPPP must include a description of interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented. Site plans should ensure that existing vegetation is preserved where attainable and that disturbed portions of the site are stabilized. Stabilization practices may include but are not limited to: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Use of impervious surfaces for stabilization should be avoided.

The following records shall be maintained and attached to the SWPPP: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated.

Except as provided in Parts IV.D.2.a.(2)(a), (b), and (c) below, stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

(a) Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable.

(b) Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of site.

(2) *Stabilization Practices*: (Continued)

(c) In arid areas (areas with an average annual rainfall of 0 to 10 inches), semi-arid areas (areas with an average annual rainfall of 10 to 20 inches), and areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

(3) *Structural Practices*: The SWPPP must include a description of structural practices to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Structural practices may include but are not limited to: silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. Placement of structural practices in floodplains should be avoided to the degree attainable. The installation of these devices may be subject to section 404 of the CWA.

(a) For common drainage locations that serve an area with ten (10) or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a 2 year, 24 hour storm from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. When computing the number of acres draining into an common location it is not necessary to include flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin.

In determining whether installing a sediment basin is attainable, the permittee may consider factors such as site soils, slope, available area on site, etc. In any event, the permittee must consider public safety, especially as it relates to children, as a design factor for the sediment basin and alternative sediment controls shall be used where site limitations would a preclude a safe design. For drainage locations which serve ten (10) or more disturbed acres at one time and where a temporary sediment basin or equivalent controls is not attainable, smaller sediment basins and/or sediment traps should be used. Where neither the sediment basin nor equivalent controls are attainable due to site limitations, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area and for those side slope boundaries deemed appropriate as dictated by individual site conditions. EPA encourages the use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal.

(b) For drainage locations serving less than 10 acres, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction area unless a sediment basin providing storage for a calculated volume

(3) *Structural Practices*: (Continued)

of runoff from a 2 year, 24 hour storm or 3,600 cubic feet of storage per acre drained is provided. EPA encourages the use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal.

b. Storm Water Management. A description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed must be included in the SWPPP. Structural measures should be placed on upland soils to the degree attainable. The installation of these devices may also require a separate permit under section 404 of the CWA. Permittees are only responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site, and are not responsible for maintenance after storm water discharges associated with construction activity have been eliminated from the site. However, post-construction storm water BMPs that discharge pollutants from point sources once construction is completed, may in themselves, need authorization under a separate NPDES permit.

(1) Such practices may include but are not limited to: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff onsite; and sequential systems (which combine several practices). The SWPPP shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels.

(2) Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. no significant changes in the hydrological regime of the receiving water).

c. Other Controls.

(1) No solid materials, including building materials, shall be discharged to waters of the United States, except as authorized by a permit issued under section 404 of the CWA.

(2) Off-site vehicle tracking of sediments and the generation of dust shall be minimized.

(3) The SWPPP shall be consistent with applicable State, Tribal and/or local waste disposal, sanitary sewer or septic system regulations to the extent these are located within the permitted area.

(4) The SWPPP shall include a description of construction and waste materials expected to be stored on-site with updates as appropriate. The SWPPP shall also include a description of controls to reduce pollutants from these materials including storage practices to minimize exposure of the materials to storm water, and spill prevention and response.

(5) The SWPPP shall include a description of pollutant sources from areas other than construction (including storm water discharges from dedicated asphalt plants and dedicated concrete plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

c. Other Controls. (Continued)

(6) The SWPPP shall include a description of measures necessary to protect listed endangered or threatened species, or critical habitat, including any terms or conditions that are imposed under the eligibility requirements of Part I.B.3.e (4) of this permit. Failure to describe and implement such measures will result in storm water discharges from construction activities that are ineligible for coverage under this permit.

d. Approved State, Tribal or Local Plans.

(1) Permittees which discharge storm water associated with construction activities must ensure their storm water pollution prevention plan is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or storm water management site plans or site permits approved by State, Tribal, or local officials.

(2) Storm water pollution prevention plans must be updated as necessary to remain consistent with any changes applicable to protecting surface water resources in sediment and erosion site plans or site permits, or storm water management site plans or site permits approved by State, Tribal or local officials for which the permittee receives written notice..

3. **Maintenance.** All erosion and sediment control measures and other protective measures identified in the SWPPP must be maintained in effective operating condition. If site inspections required by Part IV.D.4. identify BMPs that are not operating effectively, maintenance shall be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of storm water controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable.

4. **Inspections.** Qualified personnel (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site, at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

Where sites have been finally or temporarily stabilized, runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or frozen ground exists), or during seasonal arid periods in arid areas (areas with an average annual rainfall of 0 to 10 inches) and semi-arid areas (areas with an average annual rainfall of 10 to 20 inches) such inspections shall be conducted at least once every month.

Permittees are eligible for a waiver of monthly inspection requirements until one month **before** thawing conditions are expected to result in a discharge if all of the following requirements are met: 1) the project is located in an area where frozen conditions are anticipated to continue for extended periods of time (i.e., more than one month); 2) land disturbance activities have been suspended; and 3) the beginning and ending dates of the waiver period are documented in the SWPPP.

a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Sediment and erosion control measures identified in the SWPPP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to

4. **Inspections.** (Continued)

receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

b. Based on the results of the inspection, the SWPPP shall be modified as necessary (e.g., show additional controls on map required by Part IV.D.1; revise description of controls required by Part IV.D.2) to include additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP shall be completed within 7 calendar days following the inspection. If existing BMPs need to be modified or if additional BMPs are necessary, implementation shall be completed before the next anticipated storm event. If implementation before the next anticipated storm event is impracticable, they shall be implemented as soon as practicable.

c. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWPPP shall be made and retained as part of the SWPPP for at least three years from the date that the site is finally stabilized. Major observations should include: the location(s) of discharges of sediment or other pollutants from the site; location(s) of BMPs that need to be maintained; location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location; and location(s) where additional BMPs are needed that did not exist at the time of inspection. Actions taken in accordance with Part IV.D.4.b of this permit shall be made and retained as part of the storm water pollution prevention plan for at least three years from the date that the site is finally stabilized. Such reports shall identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with Part VI.G of this permit.

5. **Non-Storm Water Discharges.** Except for flows from fire fighting activities, sources of non-storm water listed in Part III.A.2 or 3 of this permit that are combined with storm water discharges associated with construction activity must be identified in the SWPPP. The SWPPP shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

Part V. RETENTION OF RECORDS

A. **Documents.** The permittee shall retain copies of storm water pollution prevention plans and all reports required by this permit, and records of all data used to complete the Notice of Intent to be covered by this permit, for a period of at least three years from the date that the site is finally stabilized. This period may be extended by request of the Director at any time.

B. **Accessibility.** The permittee shall retain a copy of the storm water pollution prevention plan required by this permit (including a copy of the permit language) at the construction site (or other local location accessible to the Director, a State, Tribal or local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; or the operator of a municipal separate storm sewer receiving discharges from the site) from the date of project initiation to the date of final stabilization. Permittees with day-to-day operational control over SWPPP implementation shall have a copy of the SWPPP available at a central location on-site for the use of all operators and those identified as having responsibilities under the SWPPP whenever they are on the construction site.

C. **Addresses.** Except for the submittal of NOIs and NOTs (see Parts II.C and VIII.B, respectively), all written correspondence concerning discharges in any State, Indian Country land or from any Federal facility covered under this permit and directed to the EPA, including the submittal of individual permit applications, shall be sent to the following address:

United States EPA, Region 8
Ecosystems Protection Program (8EPR-EP)
Storm Water Staff
999 18th Street, Suite 500
Denver, CO 80202-2466

Part VI. STANDARD PERMIT CONDITIONS

A. Duty to Comply.

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of CWA and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

2. **Penalties for Violations of Permit Conditions.** The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (Federal Register: December 31, 1996, Volume 61, Number 252, pages 69359-69366, as corrected, March 20, 1997, Volume 62, Number 54, pages 13514-13517) as mandated by the Debt Collection Improvement Act of 1996 for inflation on a periodic basis. This rule allows EPA's penalties to keep pace with inflation. The Agency is required to review its penalties at least once every four years thereafter and to adjust them as necessary for inflation according to a specified formula. The civil and administrative penalties listed below were adjusted for inflation starting in 1996.

   a. Criminal.

      (1) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both.

      (2) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

      (3) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he is placing another person in imminent danger of death or serious bodily injury is subject to a fine of not more than $250,000, or by imprisonment for not more than 15 years, or both.

      (4) *False Statement.* The CWA provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the Act or who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under the Act, shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years, or by both. If a conviction is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or by both. (See section 309.c.4 of the Clean Water Act).

   b. Civil Penalties. The CWA provides that any person who violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed $27,500 per day for each violation.

2. **Penalties for Violations of Permit Conditions.** (Continued)

   c. Administrative Penalties. The CWA provides that any person who violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty, as follows:

      (1) *Class I Penalty.* Not to exceed $11,000 per violation nor shall the maximum amount exceed $27,500.

      (2) *Class II Penalty.* Not to exceed $11,000 per day for each day during which the violation continues nor shall the maximum amount exceed $137,500.

B. **Continuation of the Expired General Permit.** If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedures Act and remain in force and effect. Any permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earlier of:

   1. Reissuance or replacement of this permit, at which time the permittee must comply with the Notice of Intent conditions of the new permit to maintain authorization to discharge; or

   2. the permittee's submittal of a Notice of Termination; or

   3. issuance of an individual permit for the permittee's discharges; or

   4. a formal permit decision by the Director not to reissue this general permit, at which time the permittee must seek coverage under an alternative general permit or an individual permit.

C. **Need to Halt or Reduce Activity not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. **Duty to Provide Information.** The permittee shall furnish to the Director or an authorized representative of the Director any information which is requested to determine compliance with this permit or other information.

F. **Other Information.** When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the Notice of Intent or in any other report to the Director, he or she shall promptly submit such facts or information.

G. **Signatory Requirements.** All Notices of Intent, Notices of Termination, storm water pollution prevention plans, reports, certifications or information either submitted to the Director or the operator of a large or medium municipal separate storm sewer system, or that this permit requires be maintained by the permittee, shall be signed as follows:

   1. All Notices of Intent and Notices of Termination shall be signed as follows:

G. **Signatory Requirements.** (Continued)

a. for a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25,000,000 (in second-quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. for a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

c. for a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (1) the chief executive officer of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. All reports required by this permit and other information requested by the Director or authorized representative of the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. the authorization is made in writing by a person described above and submitted to the Director.

b. the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).

c. Changes to Authorization. If an authorization under Part II.B is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new Notice of Intent satisfying the requirements of Part II.B must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative. The change in authorization must be submitted within the time frame specified in Part II.A.3, and sent to the address specified in Part II.C.

d. Certification. Any person signing documents under Part VI.G shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. **Penalties for Falsification of Reports.** Section 309(c)(4) of the Clean Water Act provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two years, or by both.

I. **Oil and Hazardous Substance Liability.** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the CWA or section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

J. **Property Rights.** The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

K. **Severability.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

L. **Requiring an Individual Permit or an Alternative General Permit.**

1. The Director may require any person authorized by this permit to apply for and/or obtain either an individual NPDES permit or an alternative NPDES general permit. Any interested person may petition the Director to take action under this paragraph. Where the Director requires a permittee authorized to discharge under this permit to apply for an individual NPDES permit, the Director shall notify the permittee in writing that a permit application is required. This notification shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the permittee to file the application, and a statement that on the effective date of issuance or denial of the individual NPDES permit or the alternative general permit as it applies to the individual permittee, coverage under this general permit shall automatically terminate. Applications shall be submitted to the appropriate Regional Office indicated in Part V.C of this permit. The Director may grant additional time to submit the application upon request of the applicant. If a permittee fails to submit in a timely manner an individual NPDES permit application as required by the Director under this paragraph, then the applicability of this permit to the individual NPDES permittee is automatically terminated at the end of the day specified by the Director for application submittal.

2. Any permittee authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual permit. In such cases, the permittee shall submit an individual application in accordance with the requirements of 40 CFR 122.26(c)(1)(ii), with reasons supporting the request, to the Director at the address for the appropriate Regional Office indicated in Part V.C of this permit. The request may be granted by issuance of any individual permit or an alternative general permit if the reasons cited by the permittee are adequate to support the request.

3. When an individual NPDES permit is issued to a permittee otherwise subject to this permit, or the permittee is authorized to discharge under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. When an individual NPDES permit is denied to an owner or operator otherwise subject to this permit, or the owner or operator is denied for coverage under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the date of such denial, unless otherwise specified by the Director.

M. **State/Tribal Environmental Laws.**

1. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State/Tribal law or regulation under authority preserved by section 510 of the Act.

2. No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

N. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of this permit.

O. **Inspection and Entry.** The permittee shall allow the Director or an authorized representative of EPA, the State/Tribe, or, in the case of a construction site which discharges through a municipal separate storm sewer, an authorized representative of the municipal owner/operator or the separate storm sewer receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment).

P. **Permit Actions.** This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Part VII. REOPENER CLAUSE

A. If there is evidence indicating that the storm water discharges authorized by this permit cause, have the reasonable potential to cause or contribute to, a violation of a water quality standard, the permittee may be required to obtain an individual permit or an alternative general permit in accordance with Part I.C of this permit, or the permit may be modified to include different limitations and/or requirements.

B. Permit modification or revocation will be conducted according to 40 CFR 122.62, 122.63, 122.64 and 124.5.

C. EPA may propose a modification to this permit after further discussions between the Agency and the Advisory Council on Historic Preservation for the protection of historic properties.

Part VIII. TERMINATION OF COVERAGE

A. **Notice of Termination.** Permittees must submit a completed Notice of Termination (NOT) that is signed in accordance with Part VI.G of this permit when one or more of the conditions contained in Part I.D.2. (Terminating Coverage) have been met at a construction project. The NOT form found in Addendum D will be used unless it has been replaced by a revised version by the Director. The Notice of Termination shall include the following information:

1. The NPDES permit number for the storm water discharge identified by the Notice of Termination;

2. An indication of whether the storm water discharges associated with construction activity have been eliminated (i.e., regulated discharges of storm water are being terminated) or the permittee is no longer an operator at the site;

3. The name, address and telephone number of the permittee submitting the Notice of Termination;

4. The name of the project and street address (or a description of location if no street address is available) of the construction site for which the notification is submitted;

5. The latitude and longitude of the construction site; and

6. The following certification, signed in accordance with Part VI.G (signatory requirements) of this permit. For construction projects with more than one permittee and/or operator, the permittee need only make this certification for those portions of the construction site where the permittee was authorized under this permit and not for areas where the permittee was not an operator:

   "I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that authorized by a general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Clean Water Act."

   For the purposes of this certification, elimination of storm water discharges associated with construction activity means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized (as defined in Part IX.I) and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time to ensure final stabilization is maintained, or that all storm water discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have otherwise been eliminated from the portion of the construction site where the operator had control.

B. **Addresses.**

1. All Notices of Termination, signed in accordance with Part VI.G of this permit, are to be submitted using the form provided by the Director (or a photocopy thereof), to the address specified on the NOT form.

Part IX. DEFINITIONS

A. "**Best Management Practices**" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

B. "**Control Measure**" as used in this permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the United States.

C. "**Commencement of Construction**" the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

D. "**CWA**" means the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq.

E. "**Director**" means the Regional Administrator of the Environmental Protection Agency or an authorized representative.

F. "**Discharge**" when used without qualification means the "discharge of a pollutant."

G. "**Discharge of Storm Water Associated with Construction Activity**" as used in this permit, refers to a discharge of pollutants in storm water runoff from areas where soil disturbing activities (e.g., clearing, grading, or excavation), construction materials or equipment storage or maintenance (e.g., fill piles, borrow areas, concrete truck washout, fueling), or other industrial storm water directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

H. "**Facility or Activity**" means any NPDES "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

I. "**Final Stabilization**" means that either:

1. All soil disturbing activities at the site have been completed and a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. In some parts of the country, background native vegetation will cover less than 100% of the ground (e.g., arid areas, beaches). Establishing at least 70% of the natural cover of native vegetation meets the vegetative cover criteria for final stabilization (e.g., if the native vegetation covers 50% of the ground, 70% of 50% would require 35% total cover for final stabilization; on a beach with no natural vegetation, no stabilization is required); or

2. For individual lots in residential construction by either: **a)** the homebuilder completing final stabilization as specified above, or **b)** the homebuilder establishing temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization. (Homeowners typically have an incentive to put in landscaping functionally equivalent to final stabilization as quick as possible to keep mud out of their homes and off their sidewalks and driveways.); or

I. "**Final Stabilization**" (continued)

3. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to "waters of the United States," and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria in (1) or (2) above.

J. "**Flow-Weighted Composite Sample**" means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

K. "**Large and Medium Municipal Separate Storm Sewer System**" - means all municipal separate storm sewers that are either:

1. Located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and G of 40 CFR 122); or

2. Located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or

3. Owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the large or medium municipal separate storm sewer system.

L. "**NOI**" means Notice of Intent to be covered by this permit (see Part II of this permit.)

M. "**NOT**" means Notice of Termination (see Part VIII of this permit).

N. "**Operator**" for the purpose of this permit and in the context of storm water associated with construction activity, means any party associated with a construction project that meets either of the following two criteria:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

2. The party has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a storm water pollution prevention plan for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

This definition is provided to inform permittees of EPA's interpretation of how the regulatory definitions of "owner or operator" and "facility or activity" are applied to discharges of storm water associated with construction activity.

O "**Owner or Operator**" means the owner or operator of any "facility or activity" subject to regulation under the NPDES program.

P. "**Point Source**" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Q. "**Pollutant**" is defined at 40 CFR 122.2. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

R. "**Runoff Coefficient**" means the fraction of total rainfall that will appear at the conveyance as runoff.

S. "**Storm Water**" means storm water runoff, snow melt runoff, and surface runoff and drainage.

T. "**Storm Water Associated with Industrial Activity**" is defined at 40 CFR 122.26(b)(14) and incorporated here by reference. Most relevant to this permit is 40 CFR 122.26(b)(14)(x), which relates to construction activity including clearing, grading and excavation activities that result in the disturbance of five (5) or more acres of total land area, or are part of a larger common plan of development or sale.

U. "**Waters of the United States**" means:

1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

2. All interstate waters, including interstate "wetlands";

3. All other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

   a. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
   b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
   c. Which are used or could be used for industrial purposes by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under this definition;

5. Tributaries of waters identified in paragraphs (a) through (d) of this definition;

6. The territorial sea; and

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs 1. through 6. of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds for steam electric generation stations per 40 CFR 423) which also meet the criteria of this definition) are not waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

ADDENDUM A - ENDANGERED SPECIES

I. Instructions for Applicants

A. Background

To meet its obligations under the Clean Water Act and the Endangered Species Act (ESA) and to promote those Acts' goals, the Environmental Protection Agency (EPA) is seeking to ensure the activities regulated by the Construction General Permit (CGP) are protective of endangered and threatened species and critical habitat. To ensure that those goals are met, applicants for CGP coverage are required under Part I.B.3.e. to assess the impacts of their storm water discharges and storm water discharge-related activities on Federally listed endangered and threatened species ("listed species") and designated critical habitat ("critical habitat") by following Steps One through Six listed below. EPA strongly recommends that applicants follow these steps at the earliest possible stage to ensure that measures to protect listed species and critical habitat are incorporated early in the planning process. At minimum, the procedures should be followed when developing the storm water pollution prevention plan.

Permittees and applicants also have an independent ESA obligation to ensure that their activities do not result in any prohibited "takes" of listed species.[1] Many of the measures required in the CGP and in these instructions to protect species may also assist permittees in ensuring that their construction activities do not result in a prohibited take of species in violation of § 9 of the ESA. Applicants who plan construction activities in areas that harbor endangered and threatened species are advised to ensure that they are protected from potential takings liability under ESA § 9 by obtaining either an ESA § 10 permit or by requesting formal consultation under ESA § 7 (as described in more detail in Step Seven below). Applicants who seek protection from takings liability should be aware that it is possible that some specific construction activities may be too unrelated to storm water discharges to be afforded incidental take coverage through an ESA § 7 consultation that is performed to meet the eligibility requirements for CGP coverage. In such instances, applicants should apply for an ESA § 10 permit. Where applicants are not sure whether to pursue a § 10 permit or a § 7 consultation for takings protection, they should confer with the appropriate Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) office.

This permit provides for the possibility of multiple permittees at a construction site. Applicants should be aware that in many cases they can meet the permit eligibility requirements by relying on another operator's certification of eligibility under Part I.B.3.e.(2)(a), (b), or (c). This is allowed under Part I.B.3.e.(2)(d) of the permit. However, the other operator's certification must apply to the applicant's project area and must address the effects from the applicant's storm water discharges and storm water discharge-related activities on listed species and critical habitat. By certifying eligibility under Part I.B.3.e.(2)(d), the applicant agrees to comply with any measures or controls upon which the other operator's certification under Part I.B.3.e.(2)(a), (b) or (c) was based. This situation will typically occur where a developer or primary contractor, such as one for construction of a subdivision or industrial park, conducts a comprehensive assessment of effects on listed species and critical habitat for the entire construction project, certifies eligibility under Part I.B.3.e.(2)(a), (b) or (c), and that certification is relied upon by other operators (i.e., contractors) at the site. However, applicants

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[1] Section 9 of the ESA prohibits any person from "taking" a listed species (e.g., harassing or harming it) unless: 1) the taking is authorized through a "incidental take statement" as part of undergoing ESA § 7 formal consultation; 2) where an incidental take permit is obtained under ESA § 10 (which requires the development of a habitat conservation plan); or 3) where otherwise authorized or exempted under the ESA. This prohibition applies to all entities including private individuals, businesses, and governments.

A. Background (Continued)

that consider relying on another operator's certification should carefully review that certification along with any supporting information. If an applicant does not believe that the operator's certification provides adequate coverage for the applicant's storm water discharges and storm water discharge-related activities or for the applicant's particular project area, the applicant should provide its own independent certification under Part I.B.3.e.(2)(a), (b), or (c).

B. Procedures

To receive coverage under the Construction General Permit, applicants must assess the potential effects of their storm water discharges and storm water discharge-related activities on listed species and their critical habitat. To make this assessment, applicants must follow the steps outlined below prior to completing and submitting Notice of Intent (NOI) form. Applicants who are able to certify eligibility under Parts I.B.3.e.(2)(b), (c) or (d) because of a previously issued ESA § 10 permit, a previously completed ESA § 7 consultation, or because the applicant's activities were already addressed in another operator's certification of eligibility may proceed directly to Step Six.

Note - EPA's new NOI form which is included in Addendum C of this permit (published in the Federal Register on March 6, 1998, 63 FR 11253), requires that applicants provide detailed certification information on listed species. Previous versions of NOI forms should not be used any longer because they do not contain the specific certification provisions relating to listed species and critical habitats at construction projects. Use of the older NOI forms do **not** relieve applicants of their obligation to follow the procedures listed below to determine if their construction storm water discharges or storm water discharge-related activities meet permit eligibility requirements for the protection of listed species and critical habitat. By following these instructions, applicants will have sufficient information on listed species and critical habitat in order to complete the new NOI form (see Addendum C, page 45) and sign the certification statement.

Step One: Determine if the Construction Site Is Found Within Designated Critical Habitat for Listed Species

Some, but not all, listed species have designated critical habitat. Exact locations of such habitat is provided in the Service regulations at 50 CFR Parts 17 and 226. To determine if their construction site occurs within designated critical habitat, applicants should either:

- Contact the nearest Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) Office. A list of FWS and NMFS offices is found in Section II of this Addendum; or

- Contact the State or Tribal Natural Heritage Centers. These centers compile and disseminate information on Federally listed and other protected species. They frequently have the most current information on listed species and critical habitat. A list of these centers is provided in Section III of this Addendum; or

Step One: (Continued)

- Review those regulations (which can be found in many larger libraries).

If the construction site is not located in designated critical habitat, then the applicant does not need to consider impacts to critical habitat when following Steps Two through Six below. If the site is located within critical habitat, then the applicant must look at impacts to critical habitat when following Steps Two through Six. Note that many but not all measures imposed to protect listed species under these steps will also protect critical habitat. Thus, meeting the eligibility requirements of this permit may require measures to protect critical habitat that are separate from those to protect listed species.

Step Two: Determine if Listed Species are Located in the County(ies) Where the Construction Activity Will Occur.

Section IV of the Addendum contains a county-by-county list of listed endangered and threatened species ("listed species"), and proposed endangered and threatened species ("proposed species"). Since the list was current as of September 1, 1997, applicants must also check with other sources for updated species and county information. These sources include: Sections II and III of this Addendum; EPA's Office of Wastewater Management's web page at "http://www.epa.gov/owm" where updates of the county-by-county list will be posted on a periodic basis; Federal Register Notices; State wildlife protection offices; a biologist or similar professional in the environmental field; or any other method which can be reasonably expected to provide this information. Applicants with construction projects located in EPA Region 2 and Region 6 can call the Storm Water General Permits Hotline at (800) 245-6510 for further assistance, while applicants with projects located in EPA Regions 1, 3, 7, 8, 9 and 10 may contact the appropriate EPA Regional Office.

Where a facility is located in more than one county, the lists for all counties should be reviewed. Where a facility discharges into a water body which serves as a border between counties or which crosses a county line which is in the immediate vicinity of the point of discharge, applicants should also review the species list for the county which lies immediately downstream or is across the water body from the point of discharge.

After a review of the available information from the sources mentioned above, if no listed species are located in a facility's county, and the construction site is not located in critical habitat as described under Step One, an applicant is eligible for CGP coverage without further inquiry into the presence of, or effect to, listed species. The applicant must check the appropriate certification item on the NOI form (Part I.B.3.e.(2)(a)).

Once the applicant has determined which listed species are located in his or her facility's county, the applicant must follow Step Three.

Step Three: Determine if any Federally Listed Endangered and Threatened Species May Be Present in the Project Area

The project area consists of:

Step Three: (Continued)

- The areas on the construction site where storm water discharges originate and flow toward the point of discharge into the receiving waters (including areas where excavation, site development, or other ground disturbance activities occur) and the immediate vicinity.

  Example(s)

  1. Where bald eagles nest in a tree that is on or bordering a construction site and could be disturbed by the construction activity.

  2. Where grading causes storm water to flow into a small wetland or other habitat that is on the site which contains listed species.

- The areas where storm water discharges flow from the construction site to the point of discharge into receiving waters.

  Example(s)

  1. Where storm water flows into a ditch, swale, or gully which leads to receiving waters and where listed species (such as amphibians) are found in the ditch, swale, or gully.

- The areas where storm water from construction activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge.

  Example(s)

  1. Where storm water from construction activities discharges into a stream segment that is known to harbor listed aquatic species.

- The areas where storm water BMPs will be constructed and operated, including any areas where storm water flows to and from BMPs.

  Example(s)

  1. Where a storm water retention pond would be built.

The project area will vary with the size and structure of the construction activity, the nature and quantity of the storm water discharges, the storm water discharge-related activities and the type of receiving water. Given the number of construction activities potentially covered by the CGP, no specific method to determine whether listed species may be located in the project area is required for coverage under the CGP. Instead, applicants should use the method which allows them to determine, to the best of their knowledge, whether listed species are located in their project area. These methods may include:

- Conducting visual inspections: This method may be particularly suitable for construction sites that are smaller in size or located in non-natural settings such as highly urbanized areas or industrial parks where there is little or no natural habitat, or for construction activities that discharge directly into municipal storm water collection systems.

Step Three: (Continued)

- Contacting the nearest State or Tribal wildlife agency, the Fish and Wildlife Service (FWS), or the National Marine Fisheries Service (NMFS). Many endangered and threatened species are found in well-defined areas or habitats. Such information is frequently known to State, Tribal, or Federal wildlife agencies. A list of FWS and NMFS offices is provided in Section II of this Addendum below.

- Contacting local/regional conservation groups or the State or Tribal Natural Heritage Centers (see Section III of this Addendum). State and local conservation groups may have location specific listed species information. The Natural Heritage Centers inventory species and their locations and maintain lists of sightings and habitats.

- Submitting a data request to a Natural Heritage Center. Many of these centers will provide site specific information on the presence of listed species in a project area. Some of these centers will charge a fee for researching data requests.

- Conducting a formal biological survey. Larger construction sites with extensive storm water discharges may choose to conduct biological surveys as the most effective way to assess whether species are located in the project area and whether there are likely adverse effects. Biological surveys are frequently performed by environmental consulting firms. A biological survey can be used to follow Steps Four through Six of these instructions.

- Conducting an environmental assessment under the National Environmental Policy Act (NEPA). Some construction activities may require environmental assessments under NEPA. Such assessments may indicate if listed species are in the project area. Coverage under the CGP does not trigger such an assessment because the permit does not regulate any dischargers subject to New Source Performance Standards under Section 306 of the Clean Water Act, and is thus statutorily exempted from NEPA. See CWA § 511(c). However, some construction activities might require review under NEPA because of Federal funding or other Federal involvement in the project.

If no species are found in the project area, an applicant is eligible for CGP coverage. Applicants must provide the necessary certification on the NOI form. If listed species are found in the project area, applicants must indicate the location and nature of this presence in the storm water pollution prevention plan and follow Step Four.

Step Four: Determine if Listed Species or Critical Habitat are likely to be Adversely Affected by the Construction Activity's Storm Water Discharges or Storm Water Discharge-related Activities.

To receive CGP coverage, applicants must assess whether their storm water discharges or storm water discharge-related activities are likely to adversely affect listed species or critical habitat. "Storm water discharge-related activities" include:

- activities which cause, contribute to, or result in point source storm water pollutant discharges, including but not limited to excavation, site development, grading, and other surface disturbance activities; and

Step Four: (Continued)

- measures to control storm water discharges including the siting, construction, operation of best management practices (BMPs) to control, reduce or prevent storm water pollution.

Potential adverse effects from storm water discharges and storm water discharge-related activities include:

- Hydrological. Storm water discharges may cause siltation, sedimentation or induce other changes in receiving waters such as temperature, salinity or pH. These effects will vary with the amount of storm water discharged and the volume and condition of the receiving water. Where a storm water discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely. Construction activity itself may also alter drainage patterns on a site where construction occurs which can impact listed species or critical habitat.

- Habitat. Excavation, site development, grading, and other surface disturbance activities from construction activities, including the installation or placement of storm water BMPs, may adversely affect listed species or their habitat. Storm water may drain or inundate listed species habitat.

- Toxicity. In some cases, pollutants in storm water may have toxic effects on listed species.

The scope of effects to consider will vary with each site. If the applicant is having difficulty in determining whether his or her project is likely to adversely effect a listed specie or critical habitat, then the appropriate office of the FWS, NMFS or Natural Heritage Center listed in Sections II and III of this Addendum should be contacted for assistance. If adverse effects are not likely, then the applicant should make the appropriate certification on the NOI form and apply for coverage under the permit. If adverse effects are likely, applicants must follow Step Five.

Step Five: Determine if Measures Can Be Implemented To Avoid any Adverse Effects

If an applicant makes a preliminary determination that adverse effects are likely, it can still receive coverage under Part I.B.3.e.(2)(a) of the CGP if appropriate measures are undertaken to avoid or eliminate the likelihood of adverse effects prior to applying for permit coverage. These measures may involve relatively simple changes to construction activities such as re-routing a storm water discharge to bypass an area where species are located, relocating BMPs, or by changing the "footprint" of the construction activity. Applicants may wish to contact the FWS and/or NMFS to see what appropriate measures might be suitable to avoid or eliminate the likelihood of adverse impacts to listed species and/or critical habitat. (See 50 CFR 402.13(b)). This can entail the initiation of informal consultation with the FWS and/or NMFS which is described in more detail in Step Six.

Step Five: (Continued)

If applicants adopt measures to avoid or eliminate adverse affects, they must continue to abide by those measures during the course of permit coverage. These measures must be described in the storm water pollution prevention plan and may be enforceable as permit conditions. If appropriate measures to avoid the likelihood of adverse effects are not available to the applicant, the applicant must follow Step Six.

Step Six: Determine if the Eligibility Requirements of Part I.B.3.e.(2)(b)-(d) Can Be Met.

Where adverse effects are likely, the applicant must contact the EPA and FWS/NMFS. Applicants may still be eligible for CGP coverage if any likely adverse effects can be addressed through meeting the criteria of Part I.B.3.e.(2)(b)-(d)of the permit. These criteria are as follows:

1. An ESA Section 7 Consultation is Performed for the Applicant's Activity (See Part I.B.3.e.(2)(b)

   Formal or informal ESA § 7 consultation is performed with the FWS and/or NMFS which addresses the effects of the applicant's storm water discharges and storm water discharge-related activities on listed species and critical habitat. The formal consultation must result in either a "no jeopardy opinion" or a "jeopardy opinion" that identifies reasonable and prudent alternatives to avoid jeopardy which are to be implemented by the applicant. The informal consultation must result in a written concurrence by the Service(s) on a finding that the applicant's storm water discharge(s) and storm water discharge-related activities are not likely to adversely affect listed species or critical habitat (for informal consultation, see 50 CFR 402.13).

   Most consultations are accomplished through informal consultation. By the terms of this permit, EPA has automatically designated applicants as non-Federal representatives for the purpose of conducting informal consultations. See Part I.B.3.e.(5) and 50 CFR 402.08 and 402.13. When conducting informal ESA § 7 consultation as a non-Federal representative, applicants must follow the procedures found in 50 CFR 402 of the ESA regulations.

   Applicants must also notify EPA and the Services of their intention and agreement to conduct consultation as a non-Federal representative. Consultation may occur in the context of another Federal action at the construction site (e.g., where ESA § 7 consultation was performed for issuance of a wetlands dredge and fill permit for the project or where a NEPA review is performed for the project which incorporates a section 7 consultation). Any terms and conditions developed through consultations to protect listed species and critical habitat must be incorporated into the SWPPP. As noted above, applicants may, if they wish, initiate consultation with the Services at Step Five.

   Whether ESA § 7 consultation must be performed with either the FWS, NMFS or both Services depends on the listed species which may be affected by the applicant's activity. In general, NMFS has jurisdiction over marine, estuarine, and anadromous species. Applicants should also be aware that while formal § 7 consultation provides protection from incidental takings liability, informal consultation does not.

Step Six: (Continued)

2. An Incidental Taking Permit Under Section 10 of the ESA is Issued for the Applicants Activity (See Part I.B.3.e.(2)(c))

   The applicant's construction activities are authorized through the issuance of a permit under § 10 of the ESA and that authorization addresses the effects of the applicant's storm water discharge(s) and storm water discharge-related activities on listed species and critical habitat. Applicants must follow FWS and/or NMFS procedures when applying for an ESA Section 10 permit (see 50 CFR § 17.22(b)(1) (FWS) and § 222.22 (NMFS)). Application instructions for Section 10 permits for NMFS species can be obtained by 1) accessing the "Office of Protected Resources" sector of the NMFS Home Page at "http://www.nmfs.gov" or by contacting the National Marine Fisheries Service, Office of Protected Resources, Endangered Species Division, F/PR3, 1315 East-West Highway, Silver Spring, Maryland 20910; telephone (301) 713-1401, fax (301) 713-0376.

3. The Applicant Is Covered Under the Eligibility Certification of Another Operator for the Project Area (See Part I.B.3.e.(2)(d))

   The applicant's storm water discharges and storm water discharge-related activities were already addressed in another operator's certification of eligibility under Part I.B.3.e.(2)(b), or (c) which also included the applicant's project area. By certifying eligibility under Part I.B.3.e.(2)(d), the applicant agrees to comply with any measures or controls upon which the other operator's certification under Part I.B.3.e.(2)(a), (b) or (c) was based. Certification under Part I.B.3.e.(2)(d) is discussed in more detail in Section I.A. of this addendum.

   The applicant must comply with any terms and conditions imposed under the eligibility requirements of paragraphs I.B.3.e(2)(a), (b), (c), (d) to ensure that its storm water discharges and storm water discharge-related activities are protective of listed species and/or critical habitat. Such terms and conditions must be incorporated in the project's SWPPP. If the eligibility requirements of Part I.B.3.e.(2)(a)-(d) cannot be met, then the applicant may not receive coverage under the CGP. Applicants should then consider applying to EPA for an individual permit.

II. LIST OF FISH AND WILDLIFE SERVICE OFFICES

A. U.S. FISH AND WILDLIFE SERVICE OFFICES

National Website For Endangered Species Information

Endangered Species Home page:
http://www.fws.gov/~r9endspp/endspp.html

Regional, State, Field and Project Offices Applicable to This Permit.

Region Six - Regional Office	
Division Chief, Endangered Species U.S. Fish and Wildlife Service ARD-Ecological Services P.O. Box 25486, DFC Denver, CO 80225	
State, Field, and Project Offices (Region Six)	
Field Supervisor U.S. Fish and Wildlife Service Colorado Field Office 730 Simms, Suite 290 Golden, CO 80401-4798	Field Supervisor U.S. Fish and Wildlife Service Western Colorado Field Office 764 Horizon Drive South, Annex A Grand Junction, CO 81506-3946
E.S. Coordinator U.S. Fish and Wildlife Service Rocky Mountain Arsenal National Wildlife Area, Building 111 Commerce City, CO 80022-1748	Colorado River Recovery Coordinator U.S. Fish and Wildlife Service P.O. Box 25486, DFC Denver, CO 80225

III. NATURAL HERITAGE CENTER

The Natural Heritage Network comprises 85 biodiversity data centers throughout the Western Hemisphere. These centers collect, organize, and share data relating to endangered and threatened species and habitat. The network was developed to inform land-use decisions for developers, corporations, conservationists, and government agencies and is also consulted for research and educational purposes. The centers maintain a **Natural Heritage Network Control Server Website (http://www.heritage.tnc.org)** which provides website and other access to a large number of specific biodiversity centers. The center located in Colorado is listed below:

Colorado Natural Heritage Program
Colorado State University
254 General Services Building
Fort Collins, CO 80523
970/491-1309 Fax: 970/491-3349

IV. COUNTY LIST OF ENDANGERED AND THREATENED SPECIES IN COLORADO

[The following list identifies federally listed or proposed U.S. species by State and County. It has been updated through September 1, 1997.]

Note: Species listed below with a status of both E and T are generally either endangered or threatened within the specified county. The assignment of two status designations for a species in a specific county is a function of the data set used to develop this list. For purposes of this permit, however, the obligation to assess the impact of storm water discharges on listed species does not vary based on which of the two statuses (e.g., endangered threatened) is assigned (see Addendum A Instructions). Designation of critical habitat (CH) does not mean that the county constitutes critical habitat, only that critical habitat has been designated for that species (see Addendum A Instructions).

State/County	Group name	Inverse name	Scientific name	Action/ Status
COLORADO				
ADAMS	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
ALAMOSA	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
ARCHULETA	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
BACA	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
BENT	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
BOULDER	FISHES	TROUT, GREENBACK CUTTHROAT	Salmo clarki stomias	L,T
	PLANTS	LADIES'-TRESSES, UTE	Spiranthes diluvialis	L,T
CHAFFEE	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	INSECTS	BUTTERFLY, UNCOMPAHGRE FRITILLARY	Boloria acrocnema	L,E
CHEYENNE	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
CLEAR CREEK	FISHES	TROUT, GREENBACK CUTTHROAT	Salmo clarki stomias	L,T
CONEJOS	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
COSTILLA	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
CUSTER	BIRDS	FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	FISHES	TROUT, GREENBACK CUTTHROAT	Salmo clarki stomias	L,T
DELTA	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
	FISHES	SQUAWFISH, COLORADO	Ptychocheilus lucius	L,CH
		SUCKER, RAZORBACK	Xyrauchen texanus	L,E,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
	PLANTS	CACTUS, SPINELESS HEDGEHOG	Echinocereus triglochidiatus var. inermis	L,E
		CACTUS, UINTA BASIN HOOKLESS	Sclerocactus glaucus(=Echinocactus g.,S. whipplei)	L,T
		WILD-BUCKWHEAT, CLAY-LOVING	Eriogonum pelinophilum	L,E,CH
DOLORES	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
DOUGLAS	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
	FISHES	TROUT, GREENBACK CUTTHROAT	Salmo clarki stomias	L,T
	INSECTS	SKIPPER, PAWNEE MONTANE	Hesperia leonardus (=pawnee) montana	L,T
EAGLE	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
	INSECTS	BUTTERFLY, UNCOMPAHGRE FRITILLARY	Boloria acrocnema	L,E
EL PASO	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH

Key: L - Listed, P - Proposed, E - Endangered, T - Threatened, CH - Critical Habitat

IV. COUNTY/SPECIES LIST CONTINUED

The following list identifies federally listed or proposed U.S. species by State and County. It has been updated through September 1, 1997.

State/County	Group name	Inverse name	Scientific name	Action/ Status
	FISHES	TROUT, GREENBACK CUTTHROAT	Salmo clarki stomias	L,T
	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
FREMONT	BIRDS	OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
GARFIELD	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
	FISHES	SQUAWFISH, COLORADO	Ptychocheilus lucius	L,CH
		SUCKER, RAZORBACK	Xyrauchen texanus	L,E,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
	PLANTS	CACTUS, UINTA BASIN HOOKLESS	Sclerocactus glaucus(=Echinocactus g.,S. whipplei)	L,T
GRAND	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
	PLANTS	BEARDTONGUE, PENLAND	Penstemon penlandii	L,E
		MILK-VETCH, OSTERHOUT	Astragalus osterhoutii	L,E
GUNNISON	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
	INSECTS	BUTTERFLY, UNCOMPAHGRE FRITILLARY	Boloria acrocnema	L,E
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
HINSDALE	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	INSECTS	BUTTERFLY, UNCOMPAHGRE FRITILLARY	Boloria acrocnema	L,E
HUERFANO	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	FISHES	TROUT, GREENBACK CUTTHROAT	Salmo clarki stomias	L,T
JACKSON	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
	PLANTS	PHACELIA, NORTH PARK	Phacelia formosula	L,E
JEFFERSON	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
	INSECTS	SKIPPER, PAWNEE MONTANE	Hesperia leonardus (=pawnee) montana	L,T
	PLANTS	LADIES'-TRESSES, UTE	Spiranthes diluvialis	L,T
KIOWA	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
LA PLATA	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
	PLANTS	CACTUS, KNOWLTON	Pediocactus knowltonii	L,E
LAKE	BIRDS	OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	FISHES	TROUT, GREENBACK CUTTHROAT	Salmo clarki stomias	L,T
	INSECTS	BUTTERFLY, UNCOMPAHGRE FRITILLARY	Boloria acrocnema	L,E
LARIMER	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
	FISHES	TROUT, GREENBACK CUTTHROAT	Salmo clarki stomias	L,T
LAS ANIMAS	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
LINCOLN	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
LOGAN	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
MESA	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
	FISHES	CHUB, BONYTAIL	Gila elegans	L,E,CH
		CHUB, HUMPBACK	Gila cypha	L,E,CH
		SQUAWFISH, COLORADO	Ptychocheilus lucius	L,CH
		SUCKER, RAZORBACK	Xyrauchen texanus	L,E,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
	PLANTS	CACTUS, SPINELESS HEDGEHOG	Echinocereus triglochidiatus var. inermis	L,E
		CACTUS, UINTA BASIN HOOKLESS	Sclerocactus glaucus(=Echinocactus g.,S. whipplei)	L,T
MOFFAT	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	FISHES	CHUB, BONYTAIL	Gila elegans	L,E,CH
		CHUB, HUMPBACK	Gila cypha	L,E,CH

Key: L - Listed, P - Proposed, E - Endangered, T - Threatened, CH - Critical Habitat

IV. COUNTY/SPECIES LIST CONTINUED

The following list identifies federally listed or proposed U.S. species by State and County. It has been updated through September 1, 1997.

State/County	Group name	Inverse name	Scientific name	Action/ Status
		SQUAWFISH, COLORADO	Ptychocheilus lucius	L,CH
		SUCKER, RAZORBACK	Xyrauchen texanus	L,E,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
MONTEZUMA	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	FISHES	SQUAWFISH, COLORADO	Ptychocheilus lucius	L,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
	PLANTS	CACTUS, MESA VERDE	Sclerocactus mesae-verdae (=Pediocactus m.)	L,T
		MILK-VETCH, MANCOS	Astragalus humillimus	L,E
MONTROSE	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
	PLANTS	CACTUS, SPINELESS HEDGEHOG	Echinocereus triglochidiatus var. inermis	L,E
		CACTUS, UINTA BASIN HOOKLESS	Sclerocactus glaucus(=Echinocactus g.,S. whipplei)	L,T
		WILD-BUCKWHEAT, CLAY-LOVING	Eriogonum pelinophilum	L,E,CH
MORGAN	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
	PLANTS	LADIES'-TRESSES, UTE	Spiranthes diluvialis	L,T
OTERO	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
OURAY	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	INSECTS	BUTTERFLY, UNCOMPAHGRE FRITILLARY	Boloria acrocnema	L,E
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
PARK	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
	FISHES	TROUT, GREENBACK CUTTHROAT	Salmo clarki stomias	L,T
	INSECTS	SKIPPER, PAWNEE MONTANE	Hesperia leonardus (=pawnee) montana	L,T
	PLANTS	MUSTARD, PENLAND ALPINE FEN	Eutrema penlandii	L,T
PITKIN	INSECTS	BUTTERFLY, UNCOMPAHGRE FRITILLARY	Boloria acrocnema	L,E
PROWERS	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
PUEBLO	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
RIO BLANCO	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
	FISHES	SQUAWFISH, COLORADO	Ptychocheilus lucius	L,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
	PLANTS	BLADDERPOD, DUDLEY BLUFFS	Lesquerella congesta	L,T
		TWINPOD, DUDLEY BLUFFS	Physaria obcordata	L,T
RIO GRANDE	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
ROUTT	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
SAGUACHE	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	INSECTS	BUTTERFLY, UNCOMPAHGRE FRITILLARY	Boloria acrocnema	L,E
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
SAN JUAN	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
SAN MIGUEL	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
		FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	INSECTS	BUTTERFLY, UNCOMPAHGRE FRITILLARY	Boloria acrocnema	L,E
	MAMMALS	FERRET, BLACK-FOOTED	Mustela nigripes	L,E
	PLANTS	CACTUS, SPINELESS HEDGEHOG	Echinocereus triglochidiatus var. inermis	L,E
SEDGWICK	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T

Key: L - Listed, P - Proposed, E - Endangered, T - Threatened, CH - Critical Habitat

IV. COUNTY/SPECIES LIST CONTINUED

The following list identifies federally listed or proposed U.S. species by State and County. It has been updated through September 1, 1997.

State/County	Group name	Inverse name	Scientific name	Action/ Status
SUMMIT	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
	PLANTS	MUSTARD, PENLAND ALPINE FEN	Eutrema penlandii	L,T
TELLER	BIRDS	FALCON, PEREGRINE	Falco peregrinus	L,E
		OWL, MEXICAN SPOTTED	Strix occidentalis lucida	L,T,CH
	INSECTS	SKIPPER, PAWNEE MONTANE	Hesperia leonardus (=pawnee) montana	L,T
WASHINGTON	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T
WELD	BIRDS	CRANE, WHOOPING	Grus americana	L,E,CH
		EAGLE, BALD	Haliaeetus leucocephalus	L,T
	PLANTS	LADIES'-TRESSES, UTE	Spiranthes diluvialis	L,T
YUMA	BIRDS	EAGLE, BALD	Haliaeetus leucocephalus	L,T

ADDENDUM B - HISTORIC PROPERTIES (RESERVED)

Instructions related to historic preservation have not been included in the permit at this time. EPA may modify the permit to include such provisions at a later date. This does not relieve applicants or permittees of their responsibility to comply with applicable State, Tribal or local laws for the protection of historic properties.

THIS FORM REPLACES PREVIOUS FORM 3510-6 (8-98)
See Reverse for Instructions

Form Approved. OMB No. 2040-0188

NPDES FORM

United States Environmental Protection Agency
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with CONSTRUCTION ACTIVITY Under a NPDES General Permit

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a NPDES permit issued for storm water discharges associated with construction activity in the State/Indian Country Land identified in Section II of this form. Submission of this Notice of Intent also constitutes notice that the party identified in Section I of this form meets the eligibility requirements in Part I.B. of the general permit (including those related to protection of endangered species determined through the procedures in Addendum A of the general permit), understands that continued authorization to discharge is contingent on maintaining permit eligibility, and that implementation of the Storm Water Pollution Prevention Plan required under Part IV of the general permit will begin at the time the permittee commences work on the construction project identified in Secion II below. IN ORDER TO OBTAIN AUTHORIZATION, ALL INFORMATION REQUESTED MUST BE INCLUDED ON THIS FORM. SEE INSTRUCTIONS ON BACK OF FORM.

I. Owner/Operator (Applicant) Information

Name: Phone:

Address: Status of Owner/Operator: ☐

City: State: Zip Code: –

II. Project/Site Information

Is the facility located on Indian Country Lands? Yes ☐ No ☐

Project Name:

Project Address/Location:

City: State: Zip Code: –

Latitude: Longitude: County:

Has the Storm Water Pollution Prevention Plan (SWPPP) been prepared? Yes ☐ No ☐

Optional: Address of location of SWPPP for viewing ☐ Address in Section I above ☐ Address in Section II above ☐ Other address (if known) below:

SWPPP Address: Phone:

City: State: Zip Code: –

Name of Receiving Water:

Month Day Year Estimated Construction Start Date

Month Day Year Estimated Completion Date

Estimate of area to be disturbed (to nearest acre):

Estimate of Likelihood of Discharge (choose only one):

1. ☐ Unlikely
2. ☐ Once per month
3. ☐ Once per week
4. ☐ Once per day
5. ☐ Continual

Based on instruction provided in Addendum A of the permit, are there any listed endangered or threatened species, or designated critical habitat in the project area?

Yes ☐ No ☐

I have satisfied permit eligibility with regard to protection of endangered species through the indicated section of Part I.B.3.e.(2) of the permit (check one or more boxes):

(a) ☐ (b) ☐ (c) ☐ (d) ☐

III. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: Date:

Signature: _____

Instructions – EPA Form 3510-9

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity to be Covered Under a NPDES Permit

Form Approved. OMB No. 2040-0188

Who Must File a Notice of Intent Form

Under the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et.seq.; the Act), except as provided by Part I.B.3 the permit, Federal law prohibits discharges of pollutants in storm water from construction activities without a National Pollutant Discharge Elimination System Permit. Operator(s) of construction sites where 5 or more acres are disturbed, smaller sites that are part of a larger common plan of development or sale where there is a cumulative disturbance of at least 5 acres, or any site designated by the Director, must submit an NOI to obtain coverage under an NPDES Storm Water Construction General Permit. If you have questions about whether you need a permit under the NPDES Storm Water program, or if you need information as to whether a particular program is administered by EPA or a State agency, write to or telephone the Notice of Intent Processing Center at (703) 931-3230.

Where to File NOI Form

NOIs must be sent to the following address:

Storm Water Notice of Intent (4203)
USEPA
401 M. Street, SW
Washington, D.C. 20460

Do not send Storm Water Pollution Prevention Plans (SWPPPs) to the above address. For overnight/express delivery of NOIs, please include the room number 2104 Northeast Mall and phone number (202) 260-9541 in the address.

When to File

This form must be filed at least 48 hours before construction begins.

Completing the Form

OBTAIN AND READ A COPY OF THE APPROPRIATE EPA STORM WATER CONSTRUCTION GENERAL PERMIT FOR YOUR AREA. To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, call the Notice of Intent Processing Center at (703) 931-3230.

Section I. Facility Owner/Operator (Applicant) Information

Provide the legal name, mailing address, and telephone number of the person, firm, public organization, or any other entity that meet either of the following two criteria: (1) they have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) they have the day-to-day operational control of those activities at the project necessary to ensure compliance with SWPPP requirements or other permit conditions. Each person that meets either of these criteria must file this form. Do not use a colloquial name. Correspondence for the permit will be sent to this address.

Enter the appropriate letter to indicate the legal status of the owner/operator of the project: F = Federal; S = State; M = Public (other than federal or state); P = Private.

Section II. Project/Site Information

Enter the official or legal name and complete street address, including city, county, state, zip code, and phone number of the project or site. If it lacks a street address, indicate with a general statement the location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for permit coverage to be granted.

The applicant must also provide the latitude and longitude of the facility in degrees, minutes, and seconds to the nearest 15 seconds. The latitude and longitude of your facility can be located on USGS quadrangle maps. Quadrangle maps can be obtained by calling 1-800 USA MAPS. Longitude and latitude may also be obtained at the Census Bureau Internet site: http://www.census.gov/cgi-bin/gazetteer.

Latitude and longitude for a facility in decimal form must be converted to degrees, minutes and seconds for proper entry on the NOI form. To convert decimal latitude or longitude to degrees, minutes, and seconds, follow the steps in the following example.

Convert decimal latitude 45.1234567 to degrees, minutes, and seconds.

1) The numbers to the left of the decimal point are degrees.
2) To obtain minutes, multiply the first four numbers to the right of the decimal point by 0.006. 1234 x .006 = 7.404.
3) The numbers to the left of the decimal point in the result obtained in step 2 are the minutes: 7'.
4) To obtain seconds, multiply the remaining three numbers to the right of the decimal from the result in step 2 by 0.06: 404 x 0.06 = 24.24. Since the numbers to the right of the decimal point are not used, the result is 24".
5) The conversion for 45.1234 = 45° 7' 24".

Indicate whether the project is on Indian Country Lands.

Indicate if the Storm Water Pollution Prevention Plan (SWPPP) has been developed. Refer to Part IV of the general permit for information on SWPPPs. To be eligible for coverage, a SWPPP must have been prepared.

Optional: Provide the address and phone number where the SWPPP can be viewed if different from addresses previously given. Check appropriate box.

Enter the name of the closest water body which receives the project's construction storm water discharge.

Enter the estimated construction start and completion dates using four digits for the year (i.e. 05/27/1998).

Enter the estimated area to be disturbed including but not limited to: grubbing, excavation, grading, and utilities and infrastructure installation. Indicate to the nearest acre; if less than 1 acre, enter "1." Note: 1 acre = 43,560 sq. ft.

Indicate your best estimate of the likelihood of storm water discharges from the project. EPA recognizes that actual discharges may differ from this estimate due to unforeseen or chance circumstances.

Indicate if there are any listed endangered or threatened species, or designated critical habitat in the project area.

Indicate which Part of the permit that the applicant is eligible with regard to protection of endangered or threatened species, or designated critical habitat.

Section III. Certification

Federal Statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner of the proprietor, or

For a municipality, state, federal, or other public facility: by either a principal executive or ranking elected official. An unsigned or undated NOI form will not be granted permit coverage.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 3.7 hours. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Director, OPPE Regulatory Information Division (2137), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, D.C. 20460. Include the OMB control number on any correspondence. Do not send the completed form to this address.

THIS FORM REPLACES PREVIOUS FORM 3510-7 (8-92)

Please See Instructions Before Completing This Form

Form Approved. OMB No. 2040-0086
Approval expires: 8-31-98

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Termination (NOT) of Coverage Under a NPDES General Permit for Storm Water Discharges Associated with Industrial Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the NPDES program. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. Permit Information

NPDES Storm Water General Permit Number: _____

Check Here if You are No Longer the Operator of the Facility: ☐

Check Here if the Storm Water Discharge is Being Terminated: ☐

II. Facility Operator Information

Name: _____ Phone: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

III. Facility/Site Location Information

Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Latitude: _____ Longitude: _____ Quarter: _____ Section: _____ Township: _____ Range: _____

IV. Certification:

I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by a NPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

Print Name: _____ Date: _____

Signature: _____

Instructions for Completing Notice of Termination (NOT) Form

Who May File a Notice of Termination (NOT) Form

Permittees who are presently covered under an EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit (including the 1995 Multi-Sector Permit) for Storm Water Dicharges Associated with Industrial Activity may submit a Notice of Termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at 40 CFR 122.26(b)(14), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with industrial activity from the construction site that are authorized by a NPDES general permit have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Where to File NOT Form

Send this form to the the following address:

Storm Water Notice of Termination (4203)
401 M Street, S.W.
Washington, DC 20460

Completing the Form

Type or print, using upper-case letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, telephone or write the Notice of Intent Processing Center at (703) 931-3230.

Instructions - EPA Form 3510-7
Notice of Termination (NOT) of Coverage Under The NPDES General Permit for Storm Water Discharges Associated With Industrial Activity

Section I Permit Information

Enter the existing NPDES Storm Water General Permit number assigned to the facility or site identified in Section III. If you do not know the permit number, telephone or write your EPA Regional storm water contact person.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box:

If there has been a change of operator and you are no longer the operator of the facility or site identified in Section III, check the corresponding box.

If all storm water discharges at the facility or site identified in Section III have been terminated, check the corresponding box.

Section II Facility Operator Information

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Section III Facility/Site Location Information

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code. If the facility lacks a street address, indicate the state, the latitude and longitude of the facility to the nearest .15 seconds, or the quarter, section, township, and range (to the nearest quarter section) of the approximate center of the site.

Section IV Certification

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, State, Federal, or other public facility: by either a principal executive officer or ranking elected official.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

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12/88

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SECTION 02210

GRADING
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PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 422	(1963; R 1990) Particle-Size Analysis of Soils
ASTM D 1556	(1990; R 1996) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1991) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu.m.))
ASTM D 2167	(1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D 2216	(1992) Laboratory Determination of Water (Moisture) Content of Soil, and Rock
ASTM D 2487	(1993) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2488	(1993) Description and Identification of Soils(Visual-Manual Procedure)
ASTM D 2922	(1996) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1996) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 4318	(1996) Liquid Limit, Plastic Limit, and Plasticity Index of Soils

1.2 UNIT PRICE

1.2.1 MEASUREMENT

1.2.1.1 Excavation

The unit of measurement for excavation will be the cubic yard computed by the average end-area method from cross sections taken before and after the excavation and borrow operations. The yardage paid for will be the number

of cubic yards of material, measured in its original position and removed from the excavation and borrow areas, including the excavation for ditches, gutters, and channel changes, which material is acceptably utilized or disposed of as herein specified. The measurement will include the excavation below grade of unsuitable material where ordered, and allowance will be made on the same basis for selected backfill ordered as replacement. The measurement will not include the yardageexcavated without authorization or the yardage of any material used for other than directed purposes. Yardage of overburden stripped from borrow pits, unless used as borrow material, will not be paid for. The measurement will not include the yardage of any excavation performed prior to the taking of elevations and measurements of the undisturbed grade.

1.2.1.2 Topsoil

Separate excavation, hauling, and spreading or piling of topsoil and all miscellaneous operations attendant thereto will be considered subsidiary obligations of the Contractor, covered under the contract unit price for excavation.

1.2.1.3 Overhaul

The unit of measurement for overhaul will be the station yard. The number of station yards of overhaul to be paid for will be the product of the number of cubic yards of overhaul materials, measured in the original position, multiplied by the overhaul distance measured in stations of 100 feet. The overhaul distance will be the distance in stations between the center of volume of the overhauled material in its original position and the center of volume after placing, minus the free-haul distance in stations. The haul distance will be measured along the shortest route determined as feasible and satisfactory.

1.2.2 PAYMENT

1.2.2.1 Excavation

Excavation will be paid for at the contract unit price per cubic yard for "Excavation."

1.2.2.2 Overhaul

Overhaul will be paid for at the contract unit price per station yard for "Overhaul."

1.3 DEFINITIONS

1.3.1 Suitable Materials

Suitable materials are materials that classify according to ASTM D 2487 as GW, GP, GC, GM, SW, [SP,]SC, SM, CL, [CH,]and ML. Lime and flyash shall also be considered as suitable materials when used as stabilizing agents.

1.3.2 Unsuitable Materials

Unsuitable materials include all materials that are not defined above as suitable materials. In addition, unsuitable materials are materials that classify according to ASTM D 2487 as MH, OH, [CH,]Pt, [SP,]and OL. Unsuitable materials also include all material that contains debris, refuse, roots, organic matter, frozen material, fine grained sedimentary

rocks (i.e., shale, claystone, siltstone, mudstone, and marl) even though they may be intensely weathered, contamination from hazardous, toxic, biological or radiological substances, stone having a maximum dimension larger than 3 inches in any dimension, or other materials that are determined by the Contracting Officer as unsuitable for providing a stable subgrade or stable foundation for pavement. Otherwise suitable material which has excess moisture content shall not be classified as unsuitable material unless it cannot be dried by manipulation, aeration, or blending with other materials as determined by the Contracting Officer.

1.3.3 Cohesionless and Cohesive Materials

Cohesionless materials include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic.

1.3.4 Expansive Soils

Expansive soils are defined as soils that have a plasticity index greater than 24 and a liquid limit greater than 49 when tested in accordance with ASTM D 4318.

1.3.5 Non-expansive Soils

Non-expansive soils are defined as soils with a plasticity index less than or equal to 24 and a liquid limit less than or equal to 49 when tested in accordance with ASTM D 4318.

1.3.6 Overhaul

Overhaul is the authorized transportation of suitable excavation or borrow materials in excess of the free-haul limit of [_____] stations. Overhaul is the product of the quantity of materials hauled beyond the free-haul limit and the distance such materials are hauled beyond the free-haul limit, expressed in station yards.

1.3.7 Acceptable Topsoil

Acceptable topsoil is defined as selectively excavated natural, friable soil that is representative of soils in the vicinity that produce heavy growths of crops, grass or other vegetation and is reasonably free from underlying subsoil, clay lumps, objectionable weeds, litter, brush, matted roots, toxic substances or any material that might be harmful to plant growth or be a hindrance to grading, planting or maintenance operations. Soil from ditch bottoms, drained ponds, eroded areas, or soil which is excessively wet or saturated is not acceptable. Topsoil shall not contain more than five percent by volume of stones, stumps or other objects larger than 1 inch in any dimension for field seeded areas and 1/2 inch in any dimension for lawn seeded areas. [Topsoil shall not be excessively acid or alkaline (pH value 6.0 to 7.5). Topsoil shall contain 5 to 20 percent organic matter as determined by the organic carbon 6A chemical analysis method described in USDA Soil Survey Investigation Report No. 1.] Topsoil shall be approved by the Contracting Officer. [See Section 02921 SEEDING for additional requirements.]

1.3.8 Spot Subgrade Reinforcement Material

Spot subgrade reinforcement material includes sound, tough, durable crushed

stone, slag or gravel, consisting of pieces varying from 1 inch to 3-1/2 inches in diameter, or other approved material, with necessary filler. When a finer material is necessary for filler, broken stone chips, screened gravel, or sand may be used to completely fill all voids.

1.3.9 Pavements

Pavements shall include all roads, walk areas, graveled parking or walk areas, or any other type of surfaced area for driving or walking.

1.3.10 Standard Frame and Grate or Cover

Standard frame and grate or cover shall mean heavy-duty type frame and grate or cover as a minimum.

1.3.11 Degree of Compaction

Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittal

Disposal Facility; G-[_____].

Location of disposal facility and appropriate documentation.

SD-07 Certificates

Field Testing Control

Qualifications of the commercial testing laboratory who will be performing all testing in accordance with paragraph FIELD TESTING CONTROL.

SD-06 Test Reports

Field Testing Control

Suitable Materials

Certified test reports and analysis certifying that the suitable materials proposed for use at the project site conform to the specified requirements, and for all tests conducted in accordance with paragraph FIELD TESTING CONTROL.

Borrow material; G-D1.

For each type of material[, with the exception of material reused from on-site excavation,] the following tests shall be performed:

Compaction curve, ASTM D 1557

Liquid limit, ASTM D 4318

Plastic limit, ASTM D 4318

Insitu moisture content, ASTM D 2216

Visual description of material, ASTM D 2488

Particle-size analysis, ASTM D 422

Soil classification, ASTM D 2487

PART 2 PRODUCTS

2.1 BORROW MATERIAL

Borrow material shall be selected to meet requirements and conditions of the particular fill for which it is to be used. Necessary clearing, grubbing, disposal of debris, and satisfactory drainage of borrow pits shall be performed by the Contractor as incidental operations to the borrow excavation.

2.1.1 Selection

Borrow materials shall be obtained from [the borrow areas shown][or] [sources outside the limits of Government-controlled land][or][sources within the limits of Government-controlled land, subject to approval]. Borrow materials shall be subject to approval. [Borrow material from approved sources on Government-controlled land may be obtained without payment of royalties. Unless specifically provided, no borrow shall be obtained within the limits of the project site without prior written approval.][The source of borrow material shall be the Contractor's responsibility. Unless otherwise provided in the contract, the Contractor shall obtain from the owners the right to procure material, shall pay all royalties and other charges involved, and shall bear all the expense of developing the sources, including rights-of-way for hauling.][Spot subgrade reinforcement material [and _____] shall be obtained from approved sources outside the limits of Government-controlled land at the Contractor's expense.]

2.1.2 Borrow Pits

[The Contractor shall notify the Contracting Officer sufficiently in advance of the opening of any excavation or borrow pit to permit elevations and measurements to be taken of the undisturbed ground surface.] Except as otherwise permitted, borrow pits shall be excavated to afford adequate drainage. Overburden and other spoil material shall be disposed of or used for special purposes. Borrow pits shall be neatly trimmed [and left in such shape as will facilitate taking accurate measurements] after the excavation is completed.

PART 3 EXECUTION

3.1 CONSERVATION OF TOPSOIL

Topsoil shall be removed [_____] inches, without contamination with subsoil, and stockpiled convenient to areas for later application or at locations specified. Topsoil shall be removed and stored separate from other excavated materials and piled free of roots, stones, and other undesirable materials. Any surplus of topsoil from excavations and grading shall be [stockpiled in locations indicated] [removed from the site].

3.2 EXCAVATION

Excavation of every description, regardless of material encountered, within the grading limits of the project shall be performed to the lines and grades indicated [including removal of existing bituminous surface course, concrete pavement and integral curb, pavement subcourses to the full depth, concrete walk, culverts, storm drains, subdrains, and storm drain and subdrain structures]. Suitable excavated material shall be transported to and placed in fill areas within the limits of the work. Unsuitable material encountered within the limits of the work shall be excavated below the grade shown and replaced with suitable material as directed. Such material excavated and the selected material ordered as replacement will be paid for by an equitable adjustment of the contract price under the clause of the CONTRACT CLAUSES of the contract entitled "Changes." Unsuitable material [and surplus excavated material not required for fill] shall be disposed of by the Contractor at his own expense and responsibility outside the limits of Government-controlled land. [Surplus excavated material not required for fill shall be disposed of by the Contractor in [designated waste areas] [areas approved for surplus material storage at his own expense and responsibility outside the limits of Government-controlled land].] [in designated [waste] area[s] [or in areas approved for surplus material storage] [at his own expense and responsibility outside of the limit of Government-controlled lands]]. [Disposal of materials outside Government-controlled lands shall be in accordance with federal, state, and local regulations. The location of any disposal facility located outside of the limit of Government-controlled lands shall be submitted to the Contracting Officer prior to removal from the project site. The Contractor shall submit documentation from the disposal facility to verify that it is licensed to accept the material. No material shall be removed from the project site without prior approval from the Contracting Officer. The Contractor shall notify the Contracting Officer if any material to be disposed of is found to contain hazardous, toxic, biological or radiological substances.] During construction, excavation and filling shall be performed in a manner and sequence that will [utilize all suitable material from required excavation prior to obtaining material from borrow and will] provide drainage at all times. [Material required for fills in excess of that produced by excavation within the grading limits shall be excavated from [the borrow areas indicated] [or from other] [approved areas selected by the Contractor, and approved by the Contracting Officer as specified below]].

3.3 EXCAVATION OF DITCHES

Ditches shall be cut accurately to the cross sections and grades indicated. All roots, stumps, rock and foreign matter in the sides and bottom of ditches shall be cut to conform to the slope, grade, and shape of the

section shown. Care shall be taken not to excavate ditches below the grades indicated. Excessive ditch excavation shall be backfilled to grade with suitable, thoroughly compacted material as directed. All ditches excavated under this section shall be maintained until final acceptance of the work. Suitable material excavated from ditches shall be placed in fill areas as directed. Unsuitable and excess excavated material shall be disposed of as specified above. No excavated material shall be deposited closer than 3 feet from the edges of the ditches.

3.4 UTILIZATION OF EXCAVATED MATERIALS

Suitable material removed from required excavation under this section [and any excess material from building excavation] shall be utilized in the formation of embankments, [subgrades,][shoulders,] slopes, [bedding,] backfill for [culverts and other] structures, and for such other purposes as directed. No excavated material shall be wasted without the authorization of the Contracting Officer. Material authorized to be wasted shall be disposed of as directed and in such manner as not to obstruct the flow characteristics of any stream or to impair the efficiency or appearance of any structure. No excavated material shall be deposited at any time in a manner that may endanger a partly finished structure by direct pressure, by overloading banks contiguous to the operations, or that may in any other way be detrimental to the completed work.

3.5 BACKFILL ADJACENT TO STRUCTURES

Backfill adjacent to structures shall be placed and compacted uniformly in such manner as to prevent wedging action or eccentric loading upon or against the structures. Slopes bounding or within areas to be backfilled shall be stepped or serrated to prevent sliding of the fill. During backfilling operations and in the formation of embankments, equipment that will overload the structure in passing over and compacting these fills shall not be used. [Backfill for [culverts,][storm drains][and] [subdrains], including the bedding, shall conform to the additional requirements as specified in Section 02630 STORM-DRAINAGE SYSTEM and Section 02620 SUBDRAINAGE SYSTEM.] Backfill for structures [other than [culverts][storm drains][and][subdrains]] shall conform to the additional requirements in Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS.

3.6 PREPARATION OF GROUND SURFACE FOR FILL

All vegetation, such as roots, brush, heavy sods, heavy growth of grass, and all decayed vegetable matter, rubbish, and other unsuitable material within the area upon which fill is to be placed, shall be stripped or otherwise removed before the fill is started. In no case will unsuitable material remain in or under the fill area. Stumps, logs and roots more than 1-1/2 inch in diameter shall be excavated and removed to a depth not less than 18 inches below the original ground surface. Sloped ground surfaces steeper than one vertical to four horizontal on which fill is to be placed shall be plowed, stepped, or broken up, as directed, in such manner that the fill material will bond with the existing surface. Prepared surfaces on which compacted fill is to be placed shall be wetted or dried as may be required to obtain the specified moisture content and density.

3.7 FILLS AND EMBANKMENTS

Fills and embankments herein designated as fills shall be constructed at

the locations and to lines and grades indicated on the drawings. The completed fill shall correspond to the shape of the typical sections shown on the drawings and shall meet the requirements of the particular case. Suitable material removed from the excavation shall be used in forming the necessary fill. Where otherwise suitable material is too wet, it shall be aerated or dried to provide the moisture content specified for compaction. The material shall be placed in successive horizontal layers of 8 inches to 12 inches in loose depth for the full width of the cross section, and compacted. Each layer shall be compacted before the overlaying lift is placed.

3.8 COMPACTION

Compaction shall be accomplished by means specified and to the following densities for various parts of the work. Deficiencies in construction shall be corrected by the Contractor at no additional cost to the Government.

3.8.1 Over-all or Overlot Areas

Each layer of fills constructed under this section [except for topsoil] shall be compacted to at least 90 percent of the maximum density as determined in paragraph Degree of Compaction. Cohesive soils shall be at a moisture content between [1][_____] percent below and [4][_____] percent above optimum moisture when compacted. Cohesionless soils shall be compacted at a moisture content as required to facilitate compaction without bulking.

3.8.2 Areas to Receive [Pavements][Railroads]

All fills for paved areas shall be compacted as specified for OVER-ALL OR OVERLOT AREAS, with the following exception. The upper layer forming the subgrade for [pavements][railroads] in both cut and fill areas, shall be compacted to at least 95 percent of maximum density as determined in paragraph Degree of Compaction.

3.8.2.1 Subgrade Preparation

The subgrade shall be shaped to line, grade and cross section with approved compaction equipment so as to provide a minimum compacted subgrade thickness of [_____] inches. This operation shall include any reshaping, aeration, wetting, or drying required. [The subgrade in cut sections shall be scarified and excavated for the full depth of compacted subgrade indicated on the drawings, and the excavated material shall be windrowed and bladed successively until thoroughly blended, then relaid and compacted. The subgrade in fill sections shall be windrowed and bladed successively until thoroughly blended, then compacted.][Expansive cohesive soils shall be at a moisture content between 3 and 8 percent above optimum moisture when compacted.] The moisture content of [non-expansive] cohesive soils shall be adjusted within the range 1 percent below to 3 percent above optimum moisture when compacted. Cohesionless soils shall be compacted as required to facilitate compaction without bulking. All unsuitable material shall be removed and replaced with suitable material from excavation [or borrow] or, if so directed, with spot subgrade reinforcement material, all as approved by the Contracting Officer. Spot subgrade reinforcement, if required, will be paid for by an equitable adjustment of the contract price under the clause Entitled "Changes" of the CONTRACT CLAUSES. All boulders or ledge stone encountered in the excavation shall be removed or broken off to a depth of not less than 6 inches below the subgrade. The resulting

area and all other low sections, holes, or depressions shall be brought to the required grade with suitable material and the entire subgrade shaped to line, grade and cross section and thoroughly compacted as herein provided. [Subgrade compaction shall be extended to include the shoulders.]

3.8.2.2 Spot Subgrade Reinforcement

The use of spot subgrade reinforcement material shall be at the direction of and subject to the approval of the Contracting Officer. Unsuitable subgrade materials shall be removed, the bottom of the resulting excavation shaped uniformly and compacted firmly to the density specified for subgrade, and the required provisions for adequate drainage shall be made. The subgrade reinforcement material shall then be placed in the prepared excavation, in layers of not more than 8 inches, which shall be spread and rammed until level with the surrounding subgrade surface. The voids shall then be filled with necessary finer selected material and the area rolled, or tamped if inaccessible to the roller. The filling and rolling or tamping shall be continued until the entire mass is thoroughly compacted to not less than the density of the surrounding or adjacent areas. The surface shall be finished to conform accurately to the grade and cross section shown on the drawings.

3.9 PLACING TOPSOIL

All ground areas disturbed by construction under this contract and not built over, paved or otherwise surfaced shall be topsoiled.

3.9.1 Clearing

Prior to placing topsoil, vegetation shall be removed from the area and the ground surface cleared of all other materials that would hinder proper grading, tillage or subsequent maintenance operations.

3.9.2 Grading

Previously constructed grades shall be repaired if necessary so that the areas to be topsoiled shall conform to the section indicated on the drawings upon completion of topsoil placement.

3.9.3 Tillage

Subsequent to the above grading, the areas to be top-soiled shall be thoroughly scarified by approved means to a depth of at least 3 inches for bonding of topsoil with subsoil. The work shall be performed only during periods when beneficial results are likely to be obtained. When conditions are such, by reason of drought, excessive moisture, or other factors, that satisfactory results are not likely to be obtained, the work will be stopped by the Contracting Officer and shall be resumed only when directed. Undulations or irregularities in the surface that would interfere with further construction operations or maintenance shall be leveled before the next specified operation.

3.9.4 Placing Topsoil

Topsoil shall be uniformly distributed on the designated areas and evenly spread to a minimum thickness of [4][_____] inches~\. Spreading shall be performed in such manner that planting can proceed with little additional soil preparation or tillage. The resulting surface shall meet the finish surface requirements specified in the following paragraph: FINISHED

EXCAVATION, FILLS AND EMBANKMENTS. Topsoil shall not be placed when the subgrade is frozen, excessively wet, extremely dry, or in a condition otherwise detrimental to proper grading or the proposed planting.

3.10 FIELD TESTING CONTROL

3.10.1 Sampling and Testing

All quality control sampling and testing shall be performed by the Contractor in accordance with Section 01451 CONTRACTOR QUALITY CONTROL and as specified herein.

3.10.2 Moisture-Density Determinations

Tests for determination of maximum density and optimum moisture shall be performed by the Contractor in accordance with ASTM D 1557, except that a mechanical tamper may be used provided the results are correlated with those obtained with the referenced hand tamper. Samples shall be representative of the materials to be placed. An optimum moisture-density curve shall be obtained for each principal type of material or combination of materials encountered or utilized. Results of these tests shall be the basis of control for compaction. The above testing shall include Atterberg limits, grain size determinations and specific gravity. A copy of these tests shall be furnished to the Contracting Officer with the construction quality control daily report.

3.10.3 Density Control

The Contractor shall adequately control his compaction operations by tests made in accordance with any of the following methods: ASTM D 1556, ASTM D 2167, or ASTM D 2922 and ASTM D 3017 to insure placement of materials within the limits of densities specified. [The Contractor shall obtain a service permit to use radiation producing machinery or radioactive materials in accordance with Section 01400 SPECIAL SAFETY REQUIREMENTS FOR DEMOLITION AND RENOVATION.] When ASTM D 2922 is used, the calibration curves shall be checked, and adjusted if necessary, using the sand cone method as described in paragraph "Calibration" of ASTM D 2922. ASTM D 2922 results in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall be checked along with the density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gauges shall be made at the beginning of a job, on each different type of material encountered, at intervals as directed by the Contracting Officer. If ASTM D 2922 is used for field density control, there should be at least one test performed according to ASTM D 1556 per every 10 tests performed according to ASTM D 2922-\ for correlation of test results. One test shall be made for each [3,000][_____] sq yds. or less for each layer of specified depth, except areas to receive pavements, for which one test shall be made for each [1,000][_____] sq yds or less for each layer. Additional tests shall be made as necessary. All test results shall be made available to the Contracting Officer. Acceptance tests may be made by the Government for verification of compliance; however, the Contractor shall not depend on such tests for his control of operations. Deficiencies in construction shall be corrected by the Contractor at no additional cost to the Government.

3.11 FINISHED EXCAVATION, FILLS, AND EMBANKMENTS

All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from either blade-grader or scraper operations, except as otherwise specified. The finished surface shall be not more than 0.15 foot above or below the established grade or approved cross section and shall be free of depressed areas where water would pond. [All ditches shall be finished so as to drain readily.] The surface of embankments or excavated areas for road construction or other areas to be paved on which a base course or pavement is to be placed shall not vary more than 0.05 foot from the established grade and approved cross section.

3.12 PROTECTION

During construction, embankments and excavations shall be kept shaped and drained. Ditches and drains along the subgrade shall be maintained in such manner as to drain effectively at all times. Where ruts occur in the subgrade, the subgrade shall be brought to grade, reshaped if required, and recompacted prior to the placing of surfacing. The storage or stockpiling of materials on the subgrade will not be permitted. No surfacing shall be laid until the subgrade has been checked and approved, and in no case shall any surfacing be placed on a muddy subgrade or on one containing frost. Newly graded areas shall be protected from traffic and from erosion, and any settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades reestablished to the required elevations and slopes. All work shall be conducted in accordance with the environmental protection requirements of the contract.

3.12.1 Protection of Existing Service Lines and Utilities Structures

Existing utility lines that are shown on the drawings, or the locations of which are made known to the Contractor prior to excavation that are to be retained, [as well as utility lines constructed during excavation operations,] shall be protected from damage during excavation and backfilling, and if damaged, shall be repaired by the Contractor at his expense. In the event that the Contractor damages any existing utility lines that are not shown, or the locations of which are not made known to the Contractor, report thereof shall be made immediately to the Contracting Officer. If determined that repairs are to be made by the Contractor, such repairs will be made in accordance with the clause Entitled "Changes" of the CONTRACT CLAUSES. [When utility lines that are to be removed or relocated are encountered within the area of operations, the Contractor shall notify the Contracting Officer in ample time for the necessary measures to be taken to prevent interruption of the service.]

3.13 ADJUSTMENT OF EXISTING STRUCTURES

All manholes, valve boxes, or inlets of any nature within the project that do not conform to the new finish grade in either surfaced or unsurfaced areas shall be adjusted to the new finish grade. Where inlets, manholes, or valve boxes fall within a surfaced or unpaved roadway or parking, the existing frames and cover shall be removed and replaced with a heavy-duty frame and cover. The structure shall be adjusted as needed to fit the new conditions. All structures shall be of a type suitable for the intended use and shall conform to the requirements of the applicable section of these specifications.

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SECTION 02560

(COLORADO) PAVEMENTS FOR SMALL PROJECTS
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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.

STATE DEPARTMENT OF HIGHWAYS, DIVISION OF HIGHWAYS, STATE OF COLORADO (CDOT)

CDOT	Standard Specifications for Road and Bridge Construction, 1999 Edition

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO T 180	(1993) Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and an 457 mm (18-in) Drop
AASHTO TP53	(1995) Determining Asphalt Content of Hot Mix Asphalt by the Ignition Method

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 185	(1994) Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
ASTM C 31/C 31M	(1996) Making and Curing Concrete Test Specimens in the Field
ASTM C 39	(1996) Compressive Strength of Cylindrical Concrete Specimens
ASTM C 88	(1998) Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 136	(1996a) Sieve Analysis of Fine and Coarse Aggregates
ASTM C 143	(1990a) Slump of Hydraulic Cement Concrete
ASTM C 150	(1998) Portland Cement
ASTM C 192/C 192M	(1995) Making and Curing Concrete Test Specimens in the Laboratory
ASTM C 231	(1997) Air Content of Freshly Mixed Concrete by the Pressure Method

ASTM C 566	(1997) Total Evaporable Moisture Content of Aggregate by Drying
ASTM C 881	(1990) Epoxy-Resin-Base Bonding Systems for Concrete
ASTM D 946	(1982; R 1993) Penetration-Graded Asphalt Cement for Use in Pavement Construction
ASTM D 1461	(1985; R 1994) Moisture or Volatile Distillates in Bituminous Paving Mixtures
ASTM D 1557	(1991; R 1998) Laboratory Compaction Characteristics of Soils Using Modified Effort (56,000 ft-lbf/ft (2,700 kN-m/m))
ASTM D 2041	(1995) Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2172	(1995) Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D 2726	(1996a) Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixture
ASTM D 2950	(1991; R 1997) Density of Bituminous Concrete in Place by Nuclear Method
ASTM D 3405	(1996) Joint Sealants, Hot-Applied, for Concrete and Asphalt Pavements
ASTM D 3666	(1996a) Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials
ASTM D 4125	(1994) Asphalt Content of Bituminous Mixtures by the Nuclear Method
ASTM D 4867/D 4867M	(1996) Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D 5444	(1994) Mechanical Size Analysis of Extracted Aggregate
ASTM D 5893	(1996) Cold Applied, Single Component Chemically Curing Silicon Joint Sealant for Portland Cement Concrete Pavement
ASTM D 6307	(1998) Asphalt Content of Hot Mix Asphalt by Ignition Method

CORPS OF ENGINEERS (COE) HAND BOOK FOR CONCRETE AND CEMENT

CRD-C 525	(1989) Corps of Engineers Test Method for Evaluation of Hot-Applied Joint Sealants for Bubbling Due to Heating

ASPHALT INSTITUTE (AI)

AI MS-2 (1994) Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types

1.2 MEASUREMENT AND PAYMENT

Section "MEASUREMENTS AND PAYMENT" of the CDOT shall not apply.

1.3 MODIFICATION TO THE CDOT

Reference to "Engineer" and "Department" in the CDOT shall mean the Contracting Officer or Representative.

1.4 DEFINITIONS

For the purposes of this specification, the following definitions apply.

1.4.1 Degree of Compaction

Degree of compaction of [aggregate base course,] [rigid pavement base course,] [subbase course,] [and aggregate surface course] shall be expressed as a percentage of the maximum density obtained by the test procedure presented in either ASTM D 1557 or AASHTO T 180, Method D. The maximum density shall be determined in accordance with ASTM D 1557 if the material gradation contains less than 30 percent retained on the 3/4 inch sieve or AASHTO T 180 if the material gradation contains more than 30 percent retained on the 3/4 inch sieve. In this specification, degree of compaction shall be a percentage of laboratory maximum density.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Plant, Equipment, and Tools

Job Mix Formula; G-A.

Proposed JMF.

Mixture Proportions; G-A.

The report of the Contractor's mixture proportioning studies showing the proportions of all ingredients and supporting information on aggregate and other materials that will be used in the manufacture of concrete, at least 14 days prior to commencing concrete placing operations.

SD-06 Test Reports

Initial Tests; G-A.

Certified copies of test results for approval not less than 20 days before material is required for the work.

Contractor Quality Control; G-A.

The Contractor shall submit all QC test results to the Contracting Officer on a daily basis as the tests are performed.

Acceptability of Work; G-A.

The Contractor shall submit all test results to the Contracting Officer on a daily basis as the tests are performed.

SD-07 Certificates

Asphalt Cement Binder; G-A.

Copies of certified test data.

Bituminous Tack and Prime Coat; G-A.

Copies of certified test data.

SD-08 Manufacturer's Instructions

Manufacturer's Recommendations; G-A

Where installation procedures, or any part thereof, are required to be in accordance with the manufacturer's recommendations, printed copies of these recommendations, 20 days prior to use on the project. Installation of the material will not be allowed until the recommendations are received. Failure to furnish these recommendations can be cause for rejection of the material.

1.6 SAMPLING AND TESTING

Sampling and testing shall be the responsibility of the Contractor. Sampling and testing shall be performed by a testing laboratory approved in accordance with Section 01451 CONTRACTOR QUALITY CONTROL. Work requiring testing will not be permitted until the testing laboratory has been inspected and approved. The materials shall be tested to establish compliance with the specified requirements; testing shall be performed at the specified frequency. The Contracting Officer may specify the time and location of the tests.

1.7 APPROVAL OF MATERIAL

The source of the material for aggregate base course, subbase course, rigid pavement base course, and aggregate surface course shall be selected 30 days prior to the time the material will be required in the work. Tentative approval of material will be based on initial test results. Final approval of the materials will be based on sieve analysis, liquid limit, and plasticity index tests performed on samples taken from the completed and fully compacted base and subbase course.

1.8 WEATHER LIMITATIONS

1.8.1 Hot-Mix Asphalt Pavement

The hot-mix asphalt pavement shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 1. The temperature requirements may be waived by the Contracting

Officer, if requested; however, all other requirements, including compaction, shall be met.

Table 1. Surface Temperature Limitations of Underlying Course

Mat Thickness, inches	Degrees F
3 or greater	40
Less than 3	45

1.8.2 Bituminous Prime and Tack Coat

Bituminous coat shall be applied only when the surface to receive the bituminous coat is dry. Bituminous coat shall be applied only when the atmospheric temperature in the shade is 50 degrees F or above and when the temperature has not been below 35 degrees F for the 12 hours prior to application.

1.8.3 Portland Cement Concrete Pavement

Limitations on the placing of concrete shall conform to Section 412.09, "Limitations of Placing Concrete" of the CDOT.

1.8.4 Base Course, Subbase Course, Aggregate Surface Course

Construction of aggregate base course, subbase course, rigid pavement base course, and aggregate surface course shall be done when the atmospheric temperature is above 35 degrees F. When the temperature falls below 35 degrees F, the Contractor shall protect all completed areas by approved methods against detrimental effects of freezing. Completed areas damaged by freezing, rainfall, or other weather conditions shall be corrected to meet specified requirements.

1.9 PLANT, EQUIPMENT, AND TOOLS

All plant, equipment, and tools used in the performance of the work shall be subject to approval before the work is started and shall be maintained in satisfactory working condition at all times. The equipment shall be adequate and shall have the capability of producing pavements meeting the requirements as set forth herein.

PART 2 PRODUCTS

2.1 HOT-MIX ASPHALT PAVEMENT

Bituminous wearing course shall conform to the requirements specified in the CDOT, Section 401, "PLANT MIX PAVEMENTS- GENERAL, and Section 403, "HOT BITUMINOUS PAVEMENT", except as modified herein. The aggregate shall be Grading [S] [SX]. Coarse aggregate shall meet the following additional requirements: Percentage of loss shall not exceed 18 after 5 cycles when performed in accordance with ASTM C 88, using magnesium sulfate. The Contractor shall develop the mix design. The laboratory used to develop the job mix formula (JMF) shall meet the requirements of ASTM D 3666. A certification signed by the manager of the laboratory stating that it meets these requirements or clearly listing all deficiencies shall be submitted to the Contracting Officer prior to the start of construction. The asphalt mix shall be dense-graded and composed of a mixture of well-graded aggregate, mineral filler if required, and asphalt material. The hot-mix

asphalt shall be designed using Marshall method of mix design contained in AI MS-2 and the criteria shown in Table 3. If the Tensile Strength Ratio (TSR) of the composite mixture, as determined by ASTM D 4867/D 4867M is less than 75, the aggregates shall be rejected or the asphalt mixture treated with an approved anti-stripping agent. The amount of anti-stripping agent added shall be sufficient to produce a TSR of not less than 75. If an antistrip agent is required, it shall be provided by the Contractor at no additional cost. The hot-mix asphalt pavement shall not contain more than 15 percent reclaimed asphalt pavement.

2.1.1 JMF Requirements

The job mix formula shall be submitted in writing by the Contractor for approval at least 14 days prior to the start of the test section and shall include as a minimum:

a. Percent passing each sieve size.

b. Percent of asphalt cement.

c. Percent of each aggregate and mineral filler to be used.

d. Asphalt viscosity grade or performance grade.

e. Number of blows of hammer per side of molded specimen.

f. Laboratory mixing temperature.

g. Lab compaction temperature.

h. Temperature-viscosity relationship of the asphalt cement.

i. Plot of the combined gradation on the 0.45 power gradation chart, stating the nominal maximum size.

j. Graphical plots of stability, flow, air voids, voids in the mineral aggregate, and unit weight versus asphalt content as shown in AI MS-2.

k. Specific gravity and absorption of each aggregate.

l. Percent natural sand.

m. Percent particles with 2 or more fractured faces (in coarse aggregate).

n. Fine aggregate angularity.

o. Percent flat or elongated particles (in coarse aggregate).

p. Tensile Strength Ratio(TSR).

q. Antistrip agent (if required) and amount.

r. List of all modifiers and amount.

s. Percentage and properties (asphalt content, binder properties, and aggregate properties) of reclaimed asphalt pavement (RAP) if RAP is used.

Table 2. Marshall Design Criteria

Test Property	75 Blow Mix	50 Blow Mix
Stability, pounds minimum	*1800	*1000
Flow, 0.01 inch	8-16	8-18
Air voids, percent	3-5	3-5
Percent Voids in mineral aggregate VMA, (minimum)		
Grading S	13.0	13.0
Grading SX	14.0	14.0
TSR, minimum percent	75	75

* This is a minimum requirement. The average during construction shall be significantly higher than this number to ensure compliance with the specifications.
** Calculate VMA in accordance with AI MS-2, based on ASTM D 2726 bulk specific gravity for the aggregate.

2.1.2 Adjustments to Field JMF

The Laboratory JMF for each mixture shall be in effect until a new formula is approved in writing by the Contracting Officer. Should a change in sources of any materials be made, a new laboratory jmf design shall be performed and a new JMF approved before the new material is used.

2.1.3 Asphalt Cement Binder

Asphalt cement shall conform to the requirements specified in Section 702, "Bituminous Materials" of the CDOT. Asphalt cement binder shall be either viscosity grade AC-10 or Performance Grade (PG) 58-28 or ASTM D 946 penetration grade 85-100. Test data indicating grade certification shall be provided by the supplier at the time of delivery of each load to the mix plant. Copies of these certifications shall be submitted to the Contracting Officer. The supplier is defined as the last source of any modification to the binder.

2.2 BITUMINOUS TACK AND PRIME COAT

Test data indicating grade certification shall be provided by the supplier. Copies of these certifications shall be submitted to the Contracting Officer.

2.2.1 Bituminous Prime Coat

Bituminous prime coat shall conform to the requirements specified in Section 407, Prime Coat, Tack Coat, and Rejuvenating Agent", and Section 702, "BITUMINOUS MATERIALS", of the CDOT. Bituminous materials shall be liquid asphalt, designation MC-30, or MC-70 at the Contractor's option, except that only MC-30 shall be used on dense graded base courses if MC-70 does not adequately penetrate the base course material. In lieu of

cut-back asphalt, the Contractor may use cationic emulsified asphalt, designation CSS-l or CSS-lh.

2.2.2 Bituminous Tack Coat

Bituminous tack coat shall conform to the requirements specified in Section 407, "Prime Coat, Tack Coat, and Rejuvenating Agent" of the CDOT. Bituminous material shall be emulsified asphalt designation SS-1 or SS-1h, or cationic emulsified asphalt designation CSS-1 or CSS-1h.

2.3 PORTLAND CEMENT CONCRETE PAVEMENT

2.3.1 Portland Cement Concrete

Portland cement concrete shall conform to the requirements specified in Section 412, "Portland Cement Concrete Pavement", and Section 601 "Structural Concrete" of the CDOT. Proportioning [and required 28-day field compressive strength] of the mix shall conform to the requirements of Class "P" concrete[, except that the required 28-day field compressive strength strength shall be [5000 psi]. The coarse aggregate shall have a maximum nominal size of 1-1/2 inches. The maximum allowable slump of the concrete shall be 3 inchesfor pavement constructed with fixed forms. For slipformed pavement, the maximum allowable slump shall be 1-1/4 inches. The water-cement ratio shall not exceed 0.45. The air content of the concrete by volume shall be maintained by the Contractor at 6.0 percent plus or minus 1.0 percent. The Contractor shall submit design mixture proportions, laboratory trial mix, aggregate data, and 28-day compressive strength test results in accordance with Section 601.05, "Proportioning" of the CDOT.

2.3.2 Welded Steel Wire Fabric

Welded steel wire fabric shall conform to ASTM A 185.

2.3.3 Dowels Bars and Tie Bars

Dowel bars and tie bars shall conform to Section 709.03 "Dowel Bars and Tie Bars" of the CDOT.

2.3.4 Epoxy Resin

Epoxy resin materials for embedding dowels shall be two-component materials conforming to the requirements of ASTM C 881, Type IV, Grade 3. Class shall be appropriate for each application temperature to be encountered.

2.4 CONCRETE SIDEWALK AND CURB AND GUTTER

2.4.1 General

Portland cement concrete shall conform to Section 601, "STRUCTURAL CONCRETE", of the CDOT, except as modified herein. Concrete shall be Class B or D. Coarse aggregate shall meet Number 57 or 67 gradation. The portland cement shall be Type I or II, and meet the optional chemical requirements for low alkali when tested in accordance with ASTM C 150.

2.4.2 Sidewalks

Portland cement concrete sidewalk shall conform to the requirements as specified in Section 608, "SIDEWALKS AND BIKEWAYS" of the CDOT.

2.4.3 Curb and Gutter

Portland cement concrete curb and gutter shall conform to the requirements as specified in Section 609, "CURB AND GUTTER", of the CDOT.

2.5 CURING MATERIALS

Curing materials for portland cement concrete pavement and sidewalk shall conform to Section 711.01 "Curing Materials" of the CDOT. Liquid membrane-forming compound shall be white pigmented type 2.

2.6 JOINT FILLER, BACKER ROD AND SEALANT

Preformed expansion joint filler and backer rod shall conform to Section 705.01, "Joint Fillers" of the CDOT. Cold-applied silicone joint sealant shall conform to ASTM D 5893. Cold-applied silicone sealant for sidewalks shall be gray or stone in color. Hot-applied joint sealant shall conform to ASTM D 3405 and CRD-C 525.

2.7 AGGREGATE BASE COURSE (ABC)

Aggregate base course aggregate shall conform to the requirements specified in Section 304, "AGGREGATE BASE COURSE" and Section 703.03 "AGGREGATE FOR BASES", of the CDOT, except as modified herein. Aggregate base course shall be CDOT Class 4 except as otherwise specified herein. The portion retained on the No. 4 sieve shall be known as coarse aggregate; that portion passing the No. 4 sieve shall be known as fine aggregate. Aggregates shall be angular particles of uniform density. Coarse aggregate shall be crushed gravel, crushed stone, crushed recycled concrete, or crushed slag. Fine aggregate shall consist of screenings, angular sand, crushed recycled concrete fines, or other finely divided mineral matter processed or naturally combined with the coarse aggregate. The amount of flat and elongated particles shall not exceed 30 percent. A flat particle is one having a ratio of width to thickness greater than 3; an elongated particle is one having a ratio of length to width greater than 3. In the portion retained on each sieve specified, the crushed aggregates shall contain at least 50 percent by weight of crushed pieces having two or more freshly fractured faces with the area of each face being at least equal to 75 percent of the smallest midsectional area of the piece. When two fractures are contiguous, the angle between planes of the fractures must be at least 30 degrees in order to count as two fractured faces. Crushed gravel shall be manufactured from gravel particles 50 percent of which, by weight, are retained on the maximum size sieve. The percentage of loss shall not exceed 18 after 5 cycles when performed in accordance with ASTM C 88, using magnesium sulfate. The portion of the material passing the No. 40 sieve shall have liquid limit not greater than 25 and a plasticity index not greater than 5. When tested for gradation, the percentage passing the No. 200 sieve shall not exceed 10 percent and the 0.02 mm sieve shall not exceed 3.0 percent.

2.8 RIGID PAVEMENT BASE COURSE

Rigid pavement base course aggregate shall conform to the requirements specified in Section 304, "AGGREGATE BASE COURSE" and Section 703.03 "AGGREGATE FOR BASES", of the CDOT, except as modified herein. Rigid pavement base course shall be CDOT Class 5 except as otherwise specified herein. The aggregate shall meet the following additional properties; the aggregate shall be a crushed quarry rock, [crushed gravel, crushed

screenings, sand or a combination thereof]. The percentage of loss shall not exceed 18 after 5 cycles when performed in accordance with ASTM C 88, using magnesium sulfate. The portion of the material passing the No. 40 sieve shall have liquid limit not greater than 25 and a plasticity index not greater than 5. When tested for gradation, the percentage passing the No. 200 sieve shall be between 9 percent and 15 percent. The 0.02 mm sieve shall not exceed 6.0 percent.

2.9 SUBBASE COURSE

Subbase course aggregate shall conform to the requirements specified in Section 304, "AGGREGATE BASE COURSE" and Section 703.03 "AGGREGATE FOR BASES", of the CDOT, except as modified herein. Subbase courses shall be CDOT Class 5 except as otherwise specified herein. The aggregate shall meet the following additional properties; the aggregate shall be a crushed quarry rock, [crushed gravel, crushed screenings, sand or a combination thereof]. The subbase course shall have a minimum California Bearing Ratio (CBR) of 50. The CBR shall be determined in accordance with AASHTO T 193. The percentage of loss shall not exceed 18 after 5 cycles when performed in accordance with ASTM C 88, using magnesium sulfate. The portion of the material passing the No. 40 sieve shall have liquid limit not greater than 25 and a plasticity index not greater than 5. When tested for gradation, the percentage passing the No. 200 sieve shall be between 9 percent and 15 percent. The 0.02 mm sieve shall not exceed 6.0 percent.

2.10 AGGREGATE SURFACE COURSE

Crushed aggregate surface course aggregate shall conform to the requirements specified in Section 304, "AGGREGATE BASE COURSE" and Section 703.03 "AGGREGATE FOR BASES", of the CDOT, except as modified herein. Aggregates shall consist of crushed stone or slag, crushed or natural gravel, sand, or other sound, durable materials processed and blended or naturally combined. Aggregates shall be durable and sound, free from lumps and balls of clay, organic matter, objectionable coatings, and other foreign material. The aggregate shall meet the gradation requirement for Class 7. The amount of flat and elongated particles shall not exceed 20 percent. A flat particle is one having a ratio of width to thickness greater than 3; an elongated particle is one having a ratio of length to width greater than 3. The aggregate for the surface course shall contain a minimum 80 percent crushed material. The portion of the material passing the No. 40 sieve shall have a liquid limit not greater than 35 and a plasticity index of 4 to 9.

2.11 INITIAL TESTS

One of each of the following tests shall be performed on the proposed aggregate base course, rigid pavement base course, subbase course and aggregate surface course material prior to commencing construction to demonstrate that the proposed material meets all specified requirements when furnished. If materials from more than one source are going to be utilized, this testing shall be completed for each source.

a. Sieve Analysis including 0.02 mm size material.

b. Liquid limit and plasticity index moisture-density relationship.

c. Moisture-density relationship.

d. Wear.

e. Soundness.

PART 3 EXECUTION

3.1 PAVEMENT REMOVAL

Where p.c. concrete and bituminous pavement is to be removed [at the locations shown on the drawings], the pavement shall be sawed with a pre-approved concrete saw so as to leave a straight true edge. P.C. concrete pavement removal shall be accomplished by a full depth double sawcut. The initial sawcut shall be located in the pavement area to be removed and shall be 18 inches from the final sawcut. The pavement material [and existing base course] shall be removed in a manner that will not damage the adjacent in-place pavement to remain [and as shown on the drawings]. The Contractor must demonstrate that his method of removal will not damage adjacent concrete pavement slabs. Any slab found by the Contracting Officer to be damaged by the Contractor's removal methods shall be fully removed and replaced at no cost to the Government. Pavement material from the removal area shall be disposed of [outside the limits of Government controlled land at the Contractor's expense] [at the disposal area indicated on the drawings].

3.2 HOT-MIX ASPHALT PAVEMENT

Hot-mix asphalt pavement wearing course shall be constructed to the requirements specified in the CDOT, Section 401, "PLANT MIX PAVEMENTS-GENERAL" and Section 403, "HOT BITUMINOUS PAVEMENT", except as modified herein.

3.2.1 Contractor Quality Control

A standard lot for all requirements will be equal to 8 hours of production.

3.2.1.1 Asphalt Content

A minimum of two tests to determine asphalt content will be performed per lot by one of the following methods: the extraction method in accordance with ASTM D 2172, Method A or B, the ignition method in accordance with the AASHTO TP53or ASTM D 6307, or the nuclear method in accordance with ASTM D 4125, provided the nuclear gauge is calibrated for the specific mix being used. For the extraction method, the weight of ash, as described in ASTM D 2172, shall be determined as part of the first extraction test performed at the beginning of plant production; and as part of every tenth extraction test performed thereafter, for the duration of plant production. The last weight of ash value obtained shall be used in the calculation of the asphalt content for the mixture.

3.2.1.2 Gradation

Aggregate gradations shall be determined a minimum of twice per lot from mechanical analysis of recovered aggregate in accordance with ASTM D 5444. When asphalt content is determined by the nuclear method, aggregate gradation shall be determined from hot bin samples on batch plants, or from the cold feed on drum mix plants. For batch plants, aggregates shall be tested in accordance with ASTM C 136 using actual batch weights to determine the combined aggregate gradation of the mixture.

3.2.1.3 Temperatures

Temperatures shall be checked at least four times per lot, at necessary locations, to determine the temperature at the dryer, the asphalt cement in the storage tank, the asphalt mixture at the plant, and the asphalt mixture at the job site.

3.2.1.4 Aggregate Moisture

The moisture content of aggregate used for production shall be determined a minimum of once per lot in accordance with ASTM C 566.

3.2.1.5 Moisture Content of Mixture

The moisture content of the mixture shall be determined at least once per lot in accordance with ASTM D 1461 or an approved alternate procedure.

3.2.1.6 Laboratory Air Voids, Marshall Stability and Flow

Mixture samples shall be taken at least four times per lot and compacted into specimens, using [50] [75] blows per side with the Marshall hammer. After compaction, the laboratory air voids of each specimen shall be determined, as well as the Marshall stability and flow.

3.2.2 Acceptability of Work

The pavement will be accepted on the basis of tests made by the the Contractor or its suppliers, as specified herein. The Government may, at its discretion, make check tests to validate the results of the Contractor's testing.

3.2.2.1 Sampling Pavements

Samples of the finished pavement, shall be obtained by the Contractor. The location of the samples shall be as directed and the cores shall be at least 4 inches in diameter. The samples shall be tested by the Contractor to determine conformance to density. Specimens shall be tested in accordance with the requirements of ASTM D 2726. Three samples shall be taken and tested for each 750 tons or less of bituminous mixture placed each day. A minimum of one core shall be obtained from the longitudinal joint. The Contractor shall fill all cores holes with new material and shall meet the requirements as described herein.

3.2.2.2 Laboratory Air Voids

Laboratory air voids will be calculated by determining the Marshall density of each laboratory compacted specimen using ASTM D 2726 and determining the theoretical maximum density of every other sublot sample using ASTM D 2041. Laboratory air void calculations for each sublot will use the latest theoretical maximum density values obtained, either for that sublot or the previous sublot. The mean absolute deviation of the four laboratory air void contents (one from each sublot) from the JMF air void content will be evaluated. The mean absolute deviation shall be less than 1.00. All laboratory air void tests will be completed and reported within 24 hours after completion of construction of each lot.

3.2.2.3 In-place Density

Density of the compacted mixture of the bituminous wearing course shall be between 97 and 100 percent (joint density 95 to 100 percent) of the maximum

laboratory compacted density. The maximum laboratory compacted specimens shall be determined from the same mixture taken from the plant in accordance with ASTM D 2041. Densities of the in-place compacted mixture may be determined by the nuclear method in accordance with ASTM D 2950 for Contractor quality control purposes. In any event, the basis of acceptance for density shall be determined from the specific gravity method.

3.2.2.4 Surface Smoothness

After the final rolling, but not later than 24 hours after placement, the surface of the pavement in each entire lot shall be tested by the Contractor in such a manner as to reveal all surface irregularities exceeding the tolerances specified below. If any pavement areas are ground, these areas shall be retested immediately after grinding. All testing shall be performed in the presence of the Contracting Officer. Detailed notes of the results of the testing shall be kept and a copy furnished to the Government immediately after each day's testing. The entire area of the pavement shall be tested in both a longitudinal and a transverse direction on parallel lines. The transverse lines shall be 25 feet or less apart, as directed. The longitudinal lines shall be at the centerline of each paving lane for lines less than 20 feet and at the third points for lanes 20 feet or greater. Other areas having obvious deviations shall also be tested. Longitudinal testing lines shall be continuous across all joints. Where drawings show required deviations from a plane surface (crowns, drainage inlets, etc.), the surface shall be finished to meet the approval of the Contracting Officer. The straightedge shall be held in contact with the surface and moved ahead one-half the length of the straightedge for each successive measurement. The amount of surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between these two high points. The finished surfaces of the pavements shall have no abrupt change of 3/16 inch or more, and all pavements shall be within the tolerances specified in Table 3 when checked with an approved 10 foot straightedge.

Table 3. Straightedge Surface Smoothness--Pavements

Pavement Category	Direction of Testing	Tolerance, inches
All paved areas	Longitudinal	3/16
	Transverse	3/16

3.3 BITUMINOUS TACK AND PRIME COAT

Except as otherwise specified herein, application of bituminous tack and prime coat shall be in accordance with Section 407, PRIME COAT, TACK COAT, AND REJUVENATING AGENT" of the CDOT. Following application of the bituminous material and prior to the application of the pavement, the bituminous coat shall be allowed to cure and to obtain evaporation of any volatiles or moisture.

3.3.1 Bituminous Tack Coat

Contact surfaces of previously constructed pavement, curbs, manholes, and other structures shall be sprayed with a thin coat of bituminous tack coat. Rate of application shall be not less than 0.05 gallon nor more than 0.15

gallon per square yard.

3.3.2 Bituminous Prime Coat

A prime coat will be required if it will be at least seven days before a the surfacing (Asphalt cement hot mix concrete)layer is constructed on the underlying (base course, etc) compacted material. The type of liquid asphalt and application rate will be as specified herein. The Contractor shall protect the underlying from any damage (water, traffic, etc.) until the surfacing is placed. If the Contractor places the surfacing within seven days, the choice of protection measures or actions to be taken is at the Contractor's option. Damage to the underlying material caused by lack of, or inadequate, protection shall be repaired (recompacted or replaced) by approved methods at no additional cost to the Government. If the Contractor options to use the prime coat, it shall be applied as soon as possible after consolidation of the underlying material. Rate of application shall be not less than 0.15 gallon nor more than 0.40 gallon per square yard. To obtain uniform application of the prime coat on the surface treated at the junction of previous and subsequent applications, building paper shall be spread on the surface for a sufficient distance back from the ends of each application to start and stop the prime coat on the paper. Immediately after application, the building paper shall be removed and destroyed. Prime coat shall be allowed to cure without being disturbed for a period of at least 48 hours or longer, as may be necessary to attain penetration into the treated course.

3.4 PORTLAND CEMENT CONCRETE PAVEMENT

Except as otherwise specified herein, portland cement concrete shall be constructed in accordance with the requirements specified in Section 412, "PORTLAND CEMENT CONCRETE PAVEMENT", and Section 601, "STRUCTURAL CONCRETE" of the CDOT. Tining and stationing of concrete is not required.

3.4.1 Spreading

Spreading shall be by machine or hand method. Hand spreading will be permitted only when approved for odd widths or shapes of slabs, or for placement of separate, isolated slabs during removal and replacement type repair operations, or for lanes 50 feet or less in length. Hand spreading, where permitted, shall be done with shovels; rakes shall not be used. Where the concrete is delivered to the form in truck mixers, suitable chutes may be used, provided windrows cover essentially the entire area within the form. In no case shall dumping of concrete in piles be permitted.

3.4.2 Placing Reinforcing Steel

Reinforcement shall be positioned on suitable chairs securely fastened to the subgrade prior to concrete placement, or may be placed on an initial layer of consolidated concrete, with the subsequent layer placed within 30 minutes of the first layer placement.

3.4.3 Joints

Transverse and longitudinal contraction joints shall be of the weakened plane type and shall be formed by sawing. Joints shall be sealed with hot-applied or cold-applied sealant immediately following curing of the concrete or as soon thereafter as weather conditions permit. Before sealing operations commence, a copy of the Manufacturer's Recommendations

pertaining to the storage, heating and application of the sealant shall be submitted to the Contracting Officer.

3.4.4 Contractor Quality Control

The Contractor shall perform the inspection and tests described below at the placement and, based upon the results of these inspections and tests, shall take the action required and submit reports as specified. When, in the opinion of the Contracting Officer, the paving operation is out of control, concrete placement shall cease. The Contractor shall furnish all materials, labor, and facilities required for molding, curing, testing, and protecting test specimens at the site and in the laboratory.

3.4.4.1 Air Content Testing

Air content tests shall be made when test specimens are fabricated. In addition, at least two other tests for air content shall be made on randomly selected batches of each separate concrete mixture produced during each 8-hour period of paving. All air content measurements shall be determined in accordance with ASTM C 231. Whenever air content reaches specified limits, an immediate confirmatory test shall be made. If the second test also shows air content at or exceeding specified limits, an adjustment shall immediately be made in the amount of air-entraining admixture batched to bring air content within specified limits. If the next adjusted batch of concrete is not within specified limits, concrete placement shall be halted until concrete air content is within specified limits.

3.4.4.2 Slump Testing

Slump tests shall be made when test specimens are fabricated. Additional tests shall be made when excessive variation in workability is reported by the placing foreman or Government inspector. All slump tests shall be made in accordance with ASTM C 143. Whenever slump approaches the maximum limit, an adjustment shall immediately be made in the batch masses of water and fine aggregate. When a slump result exceeds the specification limit, no further concrete shall be delivered to the paving site until adjustments have been made and slump is again within the limit.

3.4.4.3 Temperature

The temperature of the concrete shall be measured when strength specimens are fabricated.

3.4.4.4 Concrete Strength Testing

Four (4) cylinders from the same batch shall be fabricated, cured and tested for compressive strength, testing two cylinders at 7-day and two cylinders at 28-day age. A strength test shall be the average of the strengths of two cylinders made from the same sample of concrete and tested at 28 days. A minimum of one set of four (4) cylinders shall be fabricated, cured and tested for each shift of concrete placement nor less than once for each 250 cubic yards of concrete or fraction thereof. All test cylinders shall be 6 by 12 inch cylinders and shall be fabricated in accordance with ASTM C 192/C 192M, using only steel molds, cured in accordance with ASTM C 31/C 31M, and tested in accordance with ASTM C 39. Control charts for strength, showing the 7-day and 28-day CQC compressive strengths, and the 28-day required compressive strength, shall be maintained and submitted with weekly CQC Reports.

3.4.5 Acceptability of Work

The pavement will be accepted on the basis of tests made by the Contractor or its suppliers, as specified herein. The Government may, at its discretion, make check tests to validate the results of the Contractor's testing.

3.4.5.1 Strength Requirements

A strength test shall be the average of the strengths of two cylinders made from the same sample of concrete and tested at 28 days. The strength of the concrete will be considered satisfactory so long as the running average of all sets of three consecutive test results equals or exceeds the specified 28-day field compressive strength and no individual test result falls below the specified strength by more than 500 psi. The Contractor shall furnish all materials, labor, and facilities required for molding, curing, testing, and protecting test specimens at the site and in the laboratory.

3.4.5.2 Surface Smoothness Requirements

The surface of the pavement shall be tested with a 3 m (10 foot) straightedge to identify all surface irregularities exceeding the tolerances specified above. The entire area of the pavement shall be tested in both a longitudinal and a transverse direction on parallel lines approximately 15 feet apart. The straightedge shall be held in contact with the surface and moved ahead one-half the length of the straightedge for each successive measurement. The amount of surface irregularity shall be determined by placing the straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length and measuring the maximum gap between the straightedge and the pavement surface, in the area between these two high points. The finished surfaces of the pavements shall have no abrupt change of 1/8 inch or more. All pavements shall have a surface smoothness tolerance within 1/4 inch in the transverse and longitudinal direction, except that roads and streets shall have tolerance of 3/16 inchin the longitudinal direction. In areas not meeting the specified limits for surface smoothness, high areas shall be reduced to attain the required smoothness, except as depth is limited below. High areas shall be reduced by grinding the hardened concrete with a surface grinding machine after the concrete is 14 days or more old. The depth of grinding shall not exceed 1/4 inch. All pavement areas requiring surface smoothness corrections in excess of the specified limits, shall be removed and replaced. All areas in which grinding has been performed will be subject to the thickness tolerances specified in paragraph Thickness. Any grinding performed on individual slabs with excessive deficiencies shall be performed at the Contractor's own decision without entitlement to additional compensation if eventual removal of the slab is required.

3.4.5.3 Edge Slump Testing and Conformance

When slip-form paving is used, not more than 15 percent of the total free edge [of any 10 inch or thicker slab] of the slipformed portion of the pavement, shall have an edge slump exceeding 1/4 inch and no slab shall have an edge slump exceeding 3/8 inch. Edge slump shall be determined as above for surface smoothness, at each free edge of each slipformed paving lane constructed. Measurements shall be made at 5 to 15 foot spacings, and as directed. When edge slump exceeding the limits specified above is encountered on either side of the paving lane, additional straightedge

measurements shall be made, if required, to define the linear limits of the excessive slump. The concrete for the entire width of the paving lane within these limits of excessive edge slump shall be removed and replaced. Adding concrete or paste to the edge or otherwise manipulating the plastic concrete after the sliding form has passed, or patching the hardened concrete, shall not be used as a method for correcting excessive edge slump.

3.4.5.4 Thickness Determination

The thickness of the pavement shall be determined by the Government on the basis of measurements made on 4 inch diameter cores which shall be drilled by the Contractor, within 7 days after placement of the concrete. Cores shall be drilled at the points directed by the Contracting Officer and there shall be at least one core taken from each separate pavement areas of 4000 sq yd or less. The Contractor shall fill the core holes with an approved non-shrink high strength grout. [For pavements less than 8 inches in thickness, when any core shows a deficiency in thickness greater than 1/4 inch, the pavement area represented by the core shall be removed and replaced by the Contractor at no cost to the Government.] [For pavements greater than 8 inches in thickness, when any core shows a deficiency in thickness greater than 1/2 inch, the pavement area represented by the core shall be removed and replaced by the Contractor at no cost to the Government.]

3.5 CONCRETE SIDEWALK AND CURB AND GUTTER

The subgrade shall be in a moist condition when concrete is placed. The subgrade shall be prepared and protected to produce a subgrade free from frost when the concrete is deposited. Forms shall be cleaned and coated with form oil each time before concrete is placed. Wood forms may, instead, be thoroughly wetted with water before concrete is placed, except that with probable freezing temperatures, oiling is mandatory.

3.5.1 Sidewalks

Except as otherwise specified herein, portland cement concrete sidewalk shall be constructed in accordance with Section 608, "SIDEWALKS AND BIKEWAYS" of the CDOT. Subgrade shall be placed and compacted in conformance with [Section 02300 EARTHWORK] [Section 02210 GRADING]. The subgrade shall be tested for grade and cross section by means of a template extending the full width of the sidewalk and supported between side forms. Finished surfaces shall not vary more than 5/16 inch from the testing edge of a 10-foot straightedge. Permissible deficiency in section thickness will be up to 1/4 inch. All slab edges, including those at formed joints, shall be finished with an edger having a radius of 1/8 inch. Transverse joint shall be edged before brooming, and the brooming shall eliminate the flat surface left by the surface face of the edger. Sidewalk joints shall be constructed to divide the surface into square or rectangular areas. Spacing of transverse and longitudinal contraction and expansion joints shall be as indicated. At the end of the curing period, expansion joints shall be carefully cleaned and filled with cold-applied joint sealant (gray or stone color) as indicated on the drawings. The joint opening shall be thoroughly cleaned before the sealing material is placed. Sealing material shall not be spilled on exposed surfaces of the concrete. Concrete at the joint shall be surface dry and the atmospheric and concrete temperatures shall be above 50 degrees F at the time of application of joint sealing material.

3.5.2 Curb and Gutter

Except as otherwise specified herein, portland cement concrete curb and gutter shall be constructed in accordance with Section 609, "CURB AND GUTTER", of the CDOT. The subgrade shall be tested for grade and cross section by means of a template extending the full width of the curb and gutter. Concrete shall be placed to the section required in a single lift. Consolidation shall be achieved by using approved mechanical vibrators. Curve shaped gutters shall be finished with a standard curb "mule". Approved slipformed curb and gutter machines may be used in lieu of hand placement. Exposed surfaces shall be floated and finished with a smooth wood float until true to grade and section and uniform in texture. The edges of the gutter and top of the curb shall be rounded with an edging tool to a radius as shown on the drawings. Finished surfaces shall not vary more than 1/4 inch from the testing edge of a 10-foot straightedge. Permissible deficiency in section thickness will be up to 1/4 inch. Contraction joints shall be spaced so that monolithic sections between curb returns will not be less than 5 feet nor greater than 15 feet in length. Contraction joints shall be constructed by means of 1/8 inch thick separators and of a section conforming to the cross section of the curb and gutter. Separators shall be removed as soon as practicable after concrete has set sufficiently to preserve the width and shape of the joint and prior to finishing. Expansion joints shall be formed by means of preformed expansion joint filler material cut and shaped to the cross section of curb and gutter. Expansion joints at least 1/2 inch in width shall be provided at intervals not exceeding 40 feet. Expansion joints and the top 1 inch depth of contraction joints shall be sealed with cold or hot-applied sealant immediately following curing of the concrete or as soon thereafter as weather permits. The joint opening shall be thoroughly cleaned before the sealing material is placed. Sealing material shall not be spilled on exposed surfaces of the concrete. Concrete at the joint shall be surface dry and the atmospheric and concrete temperatures shall be above 50 degrees F at the time of application of joint sealing material. Excess material on exposed surfaces of the concrete shall be removed immediately and concrete surfaces cleaned.

3.5.3 Curing and Protection

Concrete shall be protected against loss of moisture and rapid temperature changes for at least 7 days from the beginning of the curing operation. Concrete shall be cured using one of the following methods

3.5.3.1 Mat Method

The entire exposed surface shall be covered with 2 or more layers of burlap. Mats shall overlap each other at least 6 inches. The mat shall be thoroughly wetted with water prior to placing on concrete surface and shall be kept continuously in a saturated condition and in intimate contact with concrete for not less than 7 days.

3.5.3.2 Impervious Sheeting Method

The entire exposed surface shall be wetted with a fine spray of water and then covered with impervious sheeting material. Sheets shall be laid directly on the concrete surface with the light-colored side up and overlapped 12 inches when a continuous sheet is not used. The curing medium shall not be less than 18 inches wider than the concrete surface to be cured, and shall be securely weighted down by heavy wood planks, or a bank of moist earth placed along edges and laps in the sheets. Sheets shall be satisfactorily repaired or replaced if torn or otherwise damaged

during curing. The curing medium shall remain on the concrete surface to be cured for not less than 7 days.

3.5.3.3 Membrane Curing Method

A uniform coating of white-pigmented membrane-curing compound shall be applied to the entire exposed surface of the concrete as specified in Section 412.14, "Curing" of the CDOT.

3.6 AGGREGATE COURSES

Aggregate base course, subbase course, rigid pavement base course, and aggregate surface course shall conform to, and be constructed in accordance with, the requirements specified in Section 304, "AGGREGATE BASE COURSE" and Section 703.03, "AGGREGATE FOR BASES" of the CDOT, except as modified herein. The aggregate base course, subbase course, rigid pavement base course, and aggregate surface course shall be compacted to 100 percent of laboratory maximum density.

3.6.1 Acceptability of Work

The aggregate base course, subbase course, rigid pavement base course, and aggregate surface course will be accepted on the basis of tests made by the Contractor as specified herein. The Government may, at its discretion, make check tests to validate the results of the Contractor's testing.

3.6.1.1 In-Place Tests

One of each of the following tests shall be performed on samples taken from the placed and compacted aggregate course. Samples shall be taken and tested at the rates indicated for each layer of material placed.

a. Density tests shall be performed on every lift of material placed and at a frequency of one set of tests for every 250 square yards, or portion thereof, of completed area.

b. Sieve Analysis [including No. 635 size material] shall be performed on every lift of material placed and at a frequency of one test for every 1000 square meters, or portion thereof, of completed area for every 500 tons, or portion thereof, of material placed.

c. Liquid limit and plasticity index tests shall be performed at the same frequency as the sieve analysis.

3.6.1.2 Thickness

The total compacted thickness of the aggregate course shall be within 1/2 inch of the thickness indicated. Where the measured thickness is more than 1/2 inch deficient, such areas shall be corrected by scarifying, adding new material of proper gradation, reblading, and recompacting as directed. Where the measured thickness is more than 1/2 inch thicker than indicated, the course shall be considered as conforming to the specified thickness requirements. Average job thickness shall be the average of all thickness measurements taken for the job, but shall be within 1/4 inch of the thickness indicated. The total thickness of the aggregate course shall be measured at intervals in such a manner as to ensure one measurement for each 500 square yards of aggregate course. Measurements shall be made in 3 inch diameter test holes penetrating the aggregate course.

3.6.1.3 Smoothness

The surface of the top layer shall show no deviations in excess of 3/8 inch when tested with a 10 foot straightedge applied parallel with and at right angles to the centerline of the area to be paved. Measurements shall be taken in successive positions parallel to the centerline of the area to be paved. Measurements shall also be taken perpendicular to the centerline at 50 foot intervals. Deviations exceeding this amount shall be corrected by removing material and replacing with new material, or by reworking existing material and compacting it to meet these specifications.

-- End of Section --

ATTACHMENT NO. 5

DRAWINGS (RFP AND SURVEY)

1. RFP DRAWINGS FOR UPGRADE WATER DISTRIBUTION SYSTEM, CADET AREA, U.S. AIR FORCE ACADEMY, COLORADO

These drawings are included on the CD-ROM with the solicitation requirements. These drawings may be viewed using the Max View Reader Software included on the CD-ROM. See Readme.txt file for additional information.

2. ENGINEERING SURVEY:

"_____.dwg." survey file (AutoCAD 2002 drawing file) will be furnished by amendment.

3. PREBLE'S MEADOW JUMPING MOUSE (PMJM) HABITAT.

See attached drawing titled “Cadet Fence” showing the Preble's Meadow Jumping Mouse (PMJM) habitat. This is a separate sheet (See Contract Viewer, under “Specs”) and requires a color printer.

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