# N O T I C E

## NO HAND CARRIED BIDS!
## NO MAILED BIDS!

Current security requirements established by the U.S. Capitol Police to screen mail being delivered to the U.S. Capitol Complex of buildings preclude the use of U.S. Postal Service by offerors to deliver their proposals submitted in response to this solicitation. In addition, because all packages must be screened for security purposes at a central location prior to their delivery, the Architect of the Capitol cannot accept packages containing offers handcarried directly to the Bid Room address within the Ford House Office Building, as specified elsewhere in this solicitation, or at any other location in the U.S. Capitol Complex of buildings.

Due to these unusual circumstances the Procurement Division for the Architect of the Capitol will only accept offers/proposals via UPS or FEDEX. See provision AOC52.215-1 Instructions to Offerors located in Section L for solicitations for services/supplies or the Solicitation Conditions for solicitations for construction. All handcarried offers/proposals will be rejected. Any attempt to handcarry an offer/proposal to any location in the U.S. Capitol Complex of buildings will be refused. Offerors are advised when sending proposals via FEDEX or UPS ***not*** to use same day delivery. FEDEX/UPS often subcontract out the delivery for same-day service. It is necessary for delivery personnel to arrive in a FEDEX/UPS truck and be in a uniform recognized as FEDEX/UPS. Offerors are encouraged to determine who will be making the delivery when making arrangements with FEDEX/UPS.

# CONSTRUCT E85 FUEL PUMPING STATION

**July 26, 2007**

Architect of the Capitol
United States Capitol
Washington, D.C. - 20515

**PROJECT MANUAL**
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**RFP070117**

**ISSUED BY: ARCHITECT OF THE CAPITOL**

## CONSTRUCT E85 FUEL PUMPING STATION

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# VOLUME I

# BUSINESS

| SOLICITATION,OFFER, AND AWARD *(Construction, Alteration, or Repair)* Architect of the Capitol | 1. SOLICITATION NO. RFP070117 | 2. TYPE OF SOLICITATION ☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP) | 3. DATE ISSUED 07/26/2007 | PAGE 1 OF 46 PAGES |
|---|---|---|---|---|

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

| 4. CONTRACT N0. | 5. REQUISITION/PURCHASE REQUEST NO. HB 070118 | 6A. PROJECT NO. CG07001 | 6B. TITLE Construct E85 Fuel Pumping Station |
|---|---|---|---|

| 7. ISSUED BY | 8. ADDRESS OFFER TO |
|---|---|
| AOC - Procurement Division<br>2nd & D Streets, SW<br>Room H2-263<br>WASHINGTON, DC 20515 | AOC - Procurement Division<br>2nd & D Streets, SW<br>Room H2-263<br>WASHINGTON, DC 20515 |

| 9. FOR INFORMATION CALL: | a. NAME Fred Witcher | b. TELEPHONE NUMBER (Include area code)(NO COLLECT CALLS) 202-226-7092 |
|---|---|---|

**SOLICITATION**

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

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

A SITE VISIT AND PRE-BID CONFERENCE WILL BE SHCEDULED SHORTLY. PLEASE CONTACT MR. ALEX SANTOS AT (202) 226-6625 FOR DETAILS. REQUESTS FOR DRAWINGS MUST BE FAXED TO FRED WITCHER AT (866) 539-4925.

11. The Contractor shall begin performance 20 calendar days and complete it within 196 calendar days after receiving ☒ award, ☐ notice to proceed. This performance period is ☒ mandatory ☐ negotiable. ( *(See* AOC Clause 52.211-5, page 34 *.)*

| 12a. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12b). ☒ YES ☐ NO | 12b. CALENDAR DAYS 20 |
|---|---|

13. ADDITIONAL SOLICITATION REQUIREMENTS

a. Sealed offers in original and 1 copies to perform the work required are due at the place specified in item 8 by 13:00:00 (hour) local time 09/04/2007 (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

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

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.

## OFFER (Must be fully completed by offeror)

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

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

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 ITEM 27 (4 copies unless otherwise specified) | 25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO 41 U.S.C. 5 |
|---|---|
| 26. ADMINISTERED BY<br>AOC - Procurement Division<br>2nd & D Streets, SW<br>Room H2-263<br>WASHINGTON, DC 20515 | 27. PAYMENT WILL BE MADE BY<br>Accounting Division<br>Ford House Office Bldg.<br>Rm. H2-205<br>Washington, DC 20515 |

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 requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract. | ☐ 29. AWARD (Contractor is 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 futher 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<br>BY_____ | 31c. DATE SIGNED |
|---|---|---|---|

## Summary Info Continuation Page

### BASE

| Number | Commodity Name | Quantity | Unit of Issue | Unit Price ($) | Total Cost ($, Inc. disc) |
|---|---|---|---|---|---|
| 1 | Base Bid | Total : 1.00 | JB | $ | $ |
| | **Description:**Construct an E85 Pumping Station fed by a new 10,000 gallon double-walled fiberglass underground storage tank, new pumping islands, connection to the existing monitoring and accounting system, site lighting, pavement and curb cuts and required containment systems. | | | | |

Lump-Sum Price for Base $

### OPTION 1

| Number | Commodity Name | Quantity | Unit of Issue | Unit Price ($) | Total Cost ($, Inc. disc) |
|---|---|---|---|---|---|
| 2 | Option No. 1 | Total : 1.00 | JB | $ | $ |
| | **Description:**Install a new pump for the existing gasoline fuel system underground, in, at or near the gasoline fuel tank. Gasoline pump shall be configured in a similar manner to the E85 fuel pump. | | | | |

Lump-Sum Price for Option 1 $

### OPTION 2

| Number | Commodity Name | Quantity | Unit of Issue | Unit Price ($) | Total Cost ($, Inc. disc) |
|---|---|---|---|---|---|
| 3 | Option No. 2 | Total : 1.00 | JB | $ | $ |
| | **Description:**Provide a sustainable design feature related to the addition of lighting to the station by incorporating photo voltaic (PV) system on the roof of the garage that feeds a battery backup system sized to provide 12 hours of continuously powered lights at the pumping station. | | | | |

Lump-Sum Price for Option 2 $

Lump-Sum Price for All Options $

Lump-Sum Price for Base and All Options $

## General Conditions

52.252-2 Sec. I

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

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

www.gsa.gov or www.arnet.gov

(End of clause)

52.211-12

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 $714.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.223-3 Alt I

Hazardous Material Identification and Material Safety Data (Jan 1997) - Alternate I (July 1995)

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

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

| Material (If none, list None) | Identification No. |
|---|---|
| | |
| | |
| | |

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

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

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

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

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

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

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

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

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

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

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

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

(i) Except as provided in paragraph (i)(2), the Contractor shall prepare and submit a sufficient number of Material Safety Data Sheets (MSDS's), meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous materials identified in paragraph (b) of this clause.

(1) For items shipped to consignees, the Contractor shall include a copy of the MSDS's with the packing list or other suitable shipping document which accompanies each shipment. Alternatively, the Contractor is permitted to transmit MSDS's to consignees in advance of receipt of shipments by consignees, if authorized in writing by the Contracting Officer.

(2) For items shipped to consignees identified by mailing address as agency depots, distribution centers or customer supply centers, the Contractor shall provide one copy of the MSDS's in or on each shipping container. If affixed to the outside of each container, the MSDS's must be placed in a weather resistant envelope.

(End of clause)

52.225-9

Buy American Act--Construction Materials (Jan 2005)

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

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

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

"Cost of components" means--

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

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

"Domestic construction material" means--

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

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

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

"United States" means the 50 States, the District of Columbia, and outlying areas.

(b) *Domestic preference.*

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

(2) This requirement does not apply to the construction material or components listed by the Government as follows:

NONE

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

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

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

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

(c) *Request for determination of inapplicability of the Buy American Act.*

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

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

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

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

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

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

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

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

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

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

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

FOREIGN AND DOMESTIC CONSTRUCTION MATERIALS PRICE COMPARISON

| Construction Material Description | Unit of Measure | Quantity | Price (Dollars)* |
|---|---|---|---|
| Item 1: | -- | -- | -- |
| Foreign Construction Material | | | |
| Domestic Construction Material | | | |
| Item 2: | -- | -- | -- |
| Foreign Construction Material | | | |
| Domestic Construction Material | | | |

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

(End of clause)

52.228-14

Irrevocable Letter of Credit (Dec 1999)

(a) "Irrevocable letter of credit (ILC)," as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and -

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration date that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of -

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of -

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institutions rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of at least $25 million in the past year, ILCs over $5 million must be confirmed by another acceptable financial institution that had letter of credit business of at least $25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

Issue Date _____

Irrevocable Letter of Credit No. _____

Account party's name _____

Account party's address _____

For Solicitation No. _____ *(for reference only)*

To: [U.S. Government agency]

*1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States $_____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.*

*2. We hereby undertake to honor your or the transferee's sight draft(s) drawn on the issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.*

*3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.*

*4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.*

*5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of* [state of confirming financial institution, if any, otherwise state of issuing financial institution] .

*6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.*

*Sincerely,*

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

(Date) _____

Our Letter of Credit Advice Number _____

Beneficiary: [U.S. Government agency]

Issuing Financial Institution: _____

Issuing Financial Institution's LC No.: _____

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. $_____ and expiring with our close of business on [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

[City, State]
[Confirming financial institution]

(Date) _____

Pay to the order of [Beneficiary Agency] the sum of United States $_____. This draft is drawn under Irrevocable Letter of Credit No. _____.

[Beneficiary Agency]
*[Beneficiary Agency]*

[By]
*[By]*

(End of clause)

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.

(End of clause)

52.236-5

Material and Workmanship (Apr 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

(End of clause)

52.236-9

Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements (Apr 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities (1) at or near the work site, and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

(End of clause)

52.242-14

Suspension of Work (Apr 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract.

(c) A claim under this clause shall not be allowed-

(1) For any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order); and

(2) Unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

(End of clause)

52.243-7

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52.243-7 NOTIFICATION OF CHANGES (APR 1984)

(a) *Definitions*. "Contracting Officer," as used in this clause, does not include any representative of the Contracting Officer.

"Specifically authorized representative (SAR)," as used in this clause, means any person the Contracting Officer has so designated by written notice (a copy of which shall be provided to the Contractor) which shall refer to this subparagraph and shall be issued to the designated representative before the SAR exercises such authority.

(b) *Notice*. The primary purpose of this clause is to obtain prompt reporting of Government conduct that the Contractor considers to constitute a change to this contract. Except for changes identified as such in writing and signed by the Contracting Officer, the Contractor shall notify the Administrative Contracting Officer in writing, within 1 (to be negotiated) calendar days from the date that the Contractor identifies any Government conduct (including actions, inactions, and written or oral communications) that the Contractor regards as a change to the contract terms and conditions. On the basis of the most accurate information available to the Contractor, the notice shall state--

(1) The date, nature, and circumstances of the conduct regarded as a change;
(2) The name, function, and activity of each Government individual and Contractor official or employee involved in or knowledgeable about such conduct;
(3) The identification of any documents and the substance of any oral communication involved in such conduct;
(4) In the instance of alleged acceleration of scheduled performance or delivery, the basis upon which it arose;
(5) The particular elements of contract performance for which the Contractor may seek an equitable adjustment under this clause, including--

(i) What contract line items have been or may be affected by the alleged change;
(ii) What labor or materials or both have been or may be added, deleted, or wasted by the alleged change;
(iii) To the extent practicable, what delay and disruption in the manner and sequence of performance and effect on continued performance have been or may be caused by the alleged change;
(iv) What adjustments to contract price, delivery schedule, and other provisions affected by the alleged change are estimated; and

(6) The Contractor's estimate of the time by which the Government must respond to the Contractor's notice to minimize cost, delay or disruption of performance.

(c) *Continued performance*. Following submission of the notice required by (b) above, the Contractor shall diligently continue performance of this contract to the maximum extent possible in accordance with its terms and conditions as construed by the Contractor, unless the notice reports a direction of the Contracting Officer or a communication from a SAR of the Contracting Officer, in either of which events the Contractor shall continue performance; provided, however, that if the Contractor regards the direction or communication as a change as described in (b) above, notice shall be given in the manner provided. All directions, communications, interpretations, orders and similar actions of the SAR shall be reduced to writing and copies furnished to the Contractor and to the Contracting Officer. The Contracting Officer shall countermand any action which exceeds the authority of the SAR.

(d) *Government response*. The Contracting Officer shall promptly, within 2 (to be negotiated) calendar days after receipt of notice,

respond to the notice in writing. In responding, the Contracting Officer shall either--

(1) Confirm that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance;
(2) Countermand any communication regarded as a change;
(3) Deny that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance; or
(4) In the event the Contractor's notice information is inadequate to make a decision under (1), (2), or (3) above, advise the Contractor what additional information is required, and establish the date by which it should be furnished and the date thereafter by which the Government will respond.

(e) *Equitable adjustments*. (1) If the Contracting Officer confirms that Government conduct effected a change as alleged by the Contractor, and the conduct causes an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether changed or not changed by such conduct, an equitable adjustment shall be made--

(i) In the contract price or delivery schedule or both; and
(ii) In such other provisions of the contract as may be affected.

(2) The contract shall be modified in writing accordingly. In the case of drawings, designs or specifications which are defective and for which the Government is responsible, the equitable adjustment shall include the cost and time extension for delay reasonably incurred by the Contractor in attempting to comply with the defective drawings, designs or specifications before the Contractor identified, or reasonably should have identified, such defect. When the cost of property made obsolete or excess as a result of a change confirmed by the Contracting Officer under this clause is included in the equitable adjustment, the Contracting Officer shall have the right to prescribe the manner of disposition of the property. The equitable adjustment shall not include increased costs or time extensions for delay resulting from the Contractor's failure to provide notice or to continue performance as provided, respectively, in (b) and (c) above.

NOTE: The phrases "contract price" and "cost" wherever they appear in the clause, may be appropriately modified to apply to cost-reimbursement or incentive contracts, or to combinations thereof.

(End of clause)

AOC52.202-2

Definitions - Construction (Jun 2004)

(a) The term Government means the United States of America, represented by the Architect of the Capitol, who is the Contracting Officer.

(b) The term head of the agency means the Committee, Commission, or other authority of the Legislative Branch of the Government having final jurisdiction or supervision over the work involved. The other authority as used in this paragraph includes the Architect of the Capitol in cases in which he has final jurisdiction or supervision over the work involved.

(c) The term Architect as used in the contract documents shall mean the Architect of the Capitol.

(d) The term Contracting Officer as used in the contract documents means the Architect of the Capitol or his duly authorized representative.

(e) The term his duly authorized representative means any person or persons or board authorized to act for the head of the agency within the scope of their authority.

(f) The term Contractor means the individual, partnership or corporation entering into a contract with the Government to perform the work specified.

(g) The term Subcontractor , as used in this part, means any supplier, distributor, vendor, or firm that furnishes supplies or services to or for a prime contractor or other subcontractor. There is no privity of contract between the Government and the Subcontractors.

(h) The term Project Director means the individual designated by the Architect to monitor the progress of work from a technical standpoint. The duties and responsibilities of the Project Director shall include supervision of scheduling, receipt and verification of Contractor s payrolls in accordance with the Davis Bacon Act, coordination between Divisions, concerning resolution and/or avoidance of potential problems and, to the extent authorized by the Delegation of Authority, if any, issuance of clarifications, supplemental agreements and change orders to the Contractor.

(i) The term contract documents includes, collectively, the Project Manual, the contract drawings and the addenda and modifications thereto, if any.

(j) The term work includes, but is not limited to, materials, labor, and manufacture and fabrication of components.

(k) The term specifications means the portion of the Contract Documents that consist of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.

(l) The term drawings means the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, that show the design, location and dimensions of the Work, and generally includes plans, elevations, sections, details, schedules and diagrams.

(m) Wherever in the specifications or upon the drawings the word directed, required, ordered, designated, prescribed, or words of like import are used, it shall be understood that the direction, requirement, order, designation, or prescription, of the Contracting Officer is intended and similarly the words approved, acceptable, satisfactory, or words of like import shall mean approved by or acceptable to, or satisfactory to the Contracting Officer, unless otherwise expressly stated.

(n) Where as shown, as indicated, as detailed, or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word provided as used herein shall be understood to mean provide complete in place, that is furnished and installed.

(End of clause)

AOC52.203-1

Advertising/Promotional Materials (Dec 2005)

(a) It is the policy of the Congress to discourage contractors providing services and supplies to the Legislative Branch entities, including the Architect of the Capitol, from advertising practices that feature the Capitol and Capitol Complex in a manner in which conveys, or is reasonably calculated to convey, a false impression of sponsorship, approval or endorsement of any product or service by the Congress, the Government of the United States, or any Department, Agency or instrumentality thereof.

(b) Contractors performing construction services for Legislative Branch entities, including the Architect of the Capitol, are discouraged from capitalizing on their contractual relationships with such entities and shall not engage in advertising practices which convey, or are reasonably calculated to convey, a false impression of sponsorship, approval or endorsement of any product or service by the Congress, the Government of the United States, of any Department, Agency or instrumentality thereof. This includes utilizing, in conjunction with the fact of their contractual relationship, images of the Capitol, any other buildings in the Capitol Complex, or any part of the United States Capitol Grounds in their advertising or promotional materials; and/or publishing or disseminating the aforementioned advertising or promotional materials.

(c) The Contractor, by signing this contract, agrees to comply with the foregoing and to submit any proposed advertising or promotional copy connected in any manner with this contract and/or the Capitol, other Capitol Complex Buildings, or the United States Capitol Grounds to the Contracting Officer for approval prior to publication.

(d) If this solicitation is for supplies or services, including construction, to be provided to or performed for the United States Supreme Court, the Contractor, by signing this contract, agrees that he or she will not advertise the award of the contract in his/her commercial advertising in such a manner as to state or imply that the Supreme Court of the United States endorses a product, project, or commercial line of endeavor.

(End of clause)

AOC52.203-2

Disclosure of Information to the General Public (Jun 2004)

(a) Promptly after receiving any request from the general public for information on or data derived from this contract, the contractor shall notify the Architect of the Capitol, Procurement Division. The contractor shall cooperate with the Procurement Division in compiling or collecting information or data if the Architect of the Capitol determines the information or data to be releasable.

(b) General public, for purposes of this clause, are those groups or individuals who are not authorized by law or regulation to have access.

(c) This clause is not intended to prevent the contractor from providing contract information or data which the contractor is required to provide in order to conduct its business, such as insurance, banking, subcontracting.

(d) The contractor is permitted to request that proprietary information or data not be released if such release would harm or impair the contractor in conducting its normal business. Such request must be documented with clear and specific grounds for that claim.

(End of clause)

AOC52.204-1

Printed or Copied Double-sided on Recycled Paper (Jun 2004)

The Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied doubled-sided on recycled paper and meet minimum content standards when not using electronic commerce methods to submit information or data to the Government.

(End of clause)

AOC52.204-4

AOC52.204-4 Personal Identity Verification of Contractor Personnel (Jun 2007)

By entering into this contract, the Contractor agrees to comply with all Federal laws that apply to the Contractor's activities, including but not limited to the U.S. Citizenship and Immigration Services' requirement to maintain a signed copy of I-9 Employment Eligibility Verification for each employee in accordance with 8 U.S.C. 1324(a).

(End of clause)

AOC52.211-3

Deficiencies in Contract Documents (Jun 2004)

The Contractor shall promptly inform the Contracting Officer, in writing, of any discovered errors, omissions, discrepancies, conflicts or ambiguities in the contract documents before proceeding with any work affected by such factors. Failure to do so will be at the risk of the Contractor.

(End of clause)

AOC52.211-6

Notice to Proceed (Jun 2004)

A formal notice, or notices, to proceed will be issued as soon as practical, normally after approval by the Contracting Officer of the bonds and insurance. Unless specifically authorized in writing, any steps taken in connection with the performance of, or the preparation to perform, the contract, prior to issuance of the notice to proceed, will be the responsibility of and at the risk of the Contractor, and without any cost whatsoever to the Government.

(End of clause)

AOC52.215-10

Examination of Records (Jun 2004)

(a) The Contractor agrees that the Architect of the Capitol or any duly authorized representatives shall, until the expiration of 3 years after final payment under this contract, have access to and the right to examine any books, accounting procedures and practices documents, papers, records and other data regardless of whether such items are in written form, in the form of computer data or in any other form and other supporting evidence, involving transactions related to this contract or compliance with any clause or certification thereunder.

(b) The Contractor further agrees to include in all its subcontracts hereunder a provision to the effect that subcontractor agrees that the Architect of the Capitol or any authorized representatives shall, until the expiration of 3 years after final payment under the subcontract, have access to and the right to examine books, documents, papers, records other data regardless of whether such items are in written form, in the form of computer data or in any other form, and other supporting evidence, involving transactions related to the subcontract or compliance with any clause or certification thereunder.

(c) The term subcontract as used in this clause excludes purchase orders not exceeding $10,000.

(End of clause)

AOC52.215-11

Audits (Jun 2004)

(a) If the price of this contract is changed through the operation of any of the provisions of this contract, the Contractor, within such reasonable time as the Contracting Officer may direct, shall submit complete and accurate cost and pricing data in support of any claim asserted under such provisions.

(b) With the submission of cost and pricing data the Contractor shall supply the following certification by a duly authorized corporate officer, partner, or owner, as applicable:

"This is to certify that, to the best of my knowledge and belief, the cost and pricing data herewith submitted to the Contracting Officer in support of a price adjustment under Supplement/Claim No. for _____ (identify by description) are accurate and complete and they are current as of _____ (date).
Date of Execution _____
Firm _____
Signature_____
Title_____"

(c) The Contracting Officer in accordance with the FAR clause Audit and Records - Negotiation , 52.215-2, has the right to examine all books, records, documents and other data of the Contractor or subcontractor in order to evaluate the accuracy, completeness, and currency of cost or pricing data thus submitted. The Contractor shall insert an appropriate provision in all subcontracts for the purpose of making the requirements of this paragraph applicable thereto.

(End of clause)

AOC52.219-1

Utilization of Small Business Concerns (Aug 2004)

(a) It is the policy of the Government as declared by the Congress that a fair proportion of the purchases and contracts for supplies and services for the Government be placed with all types of small business concerns as determined by the size standards in 13 CFR 121.

(b) The Contractor agrees to accomplish the maximum amount of subcontracting to all types of small business concerns that the Contractor finds to be consistent with the efficient performance of this contract.

(End of clause)

AOC52.222-3

Convict Labor (Jun 2004)

In connection with the performance of work under this contract the Contractor agrees not to employ any person undergoing sentence of imprisonment except as provided by Public Law 89-176, approved September 10, 1965, 18 U.S.C. 4082(c)(2).

(End of clause)

AOC52.222-4

Overtime Work (Aug 2004)

No extra reimbursement will be allowed for work performed outside regular working hours or on Saturdays, Sundays, or holidays and, for work performed in the District of Columbia, Presidential Inauguration Day, unless such work is authorized by the Contracting Officer; and provided such work is not otherwise required to be performed under the terms of the contract. If said authorization is verbal, with written verification thereof by signature of the Contracting Officer on the employee's weekly time record (see AOC52.232-2, Payments - Services or AOC52.232-3, Payments - Services Utilizing Time Records).

(End of clause)

AOC52.222-7

Workmen's Compensation Laws (Jun 2004)

The Contractor and his subcontractors employed on the site shall comply with the Workmen's Compensation Laws of the District of Columbia.

(End of clause)

AOC52.223-1

Hazardous Material Identification and Material Safety Data - Supplement (Jun 2005)

(a) Except as provided in paragraph (c), the Contractor shall prepare and submit a sufficient number of Material Safety Data Sheets (MSDS s), meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous materials identified in FAR 52.223-3(b).

(b) For items shipped to consignees, the Contractor shall include a copy of the MSDS s with the packing list or other suitable shipping document which accompanies each shipment. Alternatively, the Contractor is permitted to transmit MSDS s to consignees in advance of receipt of shipments by consignees, if authorized in writing by the Contracting Officer.

(c) For items shipped to consignees identified by mailing address as agency depots, distribution centers or customer supply centers, the Contractor shall provide one copy of the MSDS in or on each shipping container. If affixed to the outside of each container, the MSDS s must be placed in a weather resistant envelope.

(d) For items provided to a construction site, the contractor shall provide two copies of each MSDS. One copy shall be provided to the COTR in accordance with the Division 1 submittal requirements, and a second copy shall be kept in an MSDS binder on the job site.

(End of clause)

AOC52.223-3

Security Markings (Jun 2004)

(a) Before dissemination to subcontractors or other personnel, all AOC drawings and electronic copies thereof shall be considered at a minimum to be sensitive but unclassified (SBU). The following statement shall be imprinted on each page of drawings:

PROPERTY OF THE UNITED STATES GOVERNMENT
COPYING, DISSEMINATING, OR DISTRIBUTING THESE DRAWINGS, PLANS OR SPECIFICATIONS TO UNAUTHORIZED USERS IS PROHIBITED
Do not remove this notice
Properly destroy documents when no longer needed

(b) The following paragraph shall be included on the cover page of the information (such as the cover page on a set of construction drawings and on the cover page of the specifications).

PROPERTY OF THE UNITED STATES GOVERNMENT
COPYING, DISSEMINATING, OR DISTRIBUTING THESE DRAWINGS, PLANS OR SPECIFICATIONS TO UNAUTHORIZED USERS IS PROHIBITED
Do not remove this notice
Properly destroy documents when no longer needed

(End of clause)

AOC52.223-4

Transmission or Posting of Drawings/Specifications (Jun 2004)

Due to security issues, the contractor is strictly prohibited from placing or transmitting drawings and specifications on the internet or modem without express permission from the Architect of the Capitol.

(End of clause)

AOC52.223-10

Affirmative Procurement of Biobased Products under Contracts for Services and Construction (Mar 2007)

(a) *Definition.* "Biobased product" (7 U.S.C. 8101(2)) means a product determined by the U.S. Department of Agriculture to be a commercial or industrial product (other than food or feed) that is composed, in whole or in significnt part, of biological products or renewable domestic agricultural materials (including plant, animal, and marine materials) or forestry materials.

(b) In the performance of this contract, the contractor shall make maximum use of biobased products that are USDA-designated items unless the product cannot be acquired --

(1) Competitively within a time frame providing for compliance with the contract performance schedule;

(2) Meeting contract performance requirements; or

(3) At a reasonable price.

(c) Information about this requirement and these products is available at http://www.biobased.oce.usda.gov/.

(End of clause)

AOC52.225-1

Buy American Act - Supplement (Jun 2004)

In addition to provisions of the above clause entitled, Buy American Act, the General Provisions of the Legislative Branch Appropriations Act provides in part, as follows:

(a) It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available in the Act should be American-made.

(b) In providing financial assistance to or entering into any contract with, any entity using funds made available in the Act, the head of each Federal Agency, to the greatest extent practicable, shall provide to such entity a notice describing the statement made in Paragraph (a) above, by the Congress.

(End of clause)

AOC52.228-2

Insurance - Work on a Government Installation (Jul 2005)

(a) The Contractor shall, at his own expense, provide and maintain during the entire performance of this contract at least the kinds and minimum amounts of insurance as required in this clause.

(b) Within twenty (20) calendar days after the date of contract award or before commencing work under this contract, whichever is earlier, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. A Certificate of Insurance evidencing the Contractor's compliance with the requirements of this clause, identifying all policies of insurance and sureties proposed for the provision of liability coverage pertinent to the work of the instant contract, including the endorsement required in this paragraph, and manually countersigned by an authorized representative of the insurance company shall be submitted in accordance with the time frame stated in this paragraph. All policies for liability protection, bodily injury, or property damage shall include the United States of America, acting by and through the Architect of the Capitol, as an additional insured with respect to operations under this contract. Each policy of insurance shall contain the following endorsement, which may be attached as a rider:

"It is understood and agreed that the Contractor's Insurance Company or surety shall notify the Architect of the Capitol, in writing, thirty (30) calendar days in advance of the effective date of any reduction in or cancellation of this policy."

(c) Insurance and required minimum liability limits are:

(1) Appropriate bodily injury and property damage liability insurance, with limits of not less than $500,000 for each occurrence and $2,000,000 for annual aggregate, including requirements for protection of hoisting and scaffolding operations, when applicable, and servicing areas adjacent to the building;

(2) Automobile bodily injury liability insurance with limits of not less than $200,000 for each person and $500,000 for each accident, and property liability insurance, with a limit of not less than $20,000 for each accident. A combined single limit for these coverages is acceptable; and/or

(3) Workmen's compensation insurance as required by the laws of (1) the District of Columbia for work performed on a Government site located in the District of Columbia; (2) the State of Maryland for work performed on a Government site located in Maryland; or (3) the Commonwealth of Virginia for work performed on a Government site located in Virginia.

(d) The Contractor shall insert the substance of this clause, including this paragraph, in subcontracts under this contract that require work on a Government installation, and shall require subcontractors to provide and maintain the insurance required in this clause. The

Contractor shall maintain a copy of all subcontractors proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

(End of clause)

AOC52.228-4

Indemnification and Hold Harmless Agreement (Jun 2004)

The Contractor agrees to indemnify and hold the Government harmless against any and all claims for damages to persons or property from any cause or causes whatsoever arising out of the performance of services covered by the contract; including, but not limited to, errors, omissions or negligent acts of the Contractor, but excluding active negligence of the Government, and against any and all costs, expenses, attorney's fees, and liability incurred by the Government in defending against such claims, whether the same proceed to judgement or not. In the prosecution of any successful claim or suit by the Government for the enforcement of this contract, the Contractor shall reimburse the Government for any reasonable attorney's fees and costs of claim or suit incurred by the Government.

(End of clause)

AOC52.228-5

AOC52.228-5 Payment Protection and Performance Bonds - Construction (Dec 2006)

(a) Payment protection and performance bonds. (1) For a new definitive contract (one containing no provisions for issuance of task orders) or purchase order, payment protection and performance bonds, if required, shall be provided by the contractor after notice of award of the contract.

(2) For indefinite-delivery contracts, the contractor has the option of providing --

(i) Payment protection and performance bonds for the total estimated amount of the contract within the time frame as specified elsewhere in the contract; or

(ii) Payment protection and performance bonds upon the issuance of each task order under the contract and as determined by the value of the instant task order within the time frame as specified elsewhere for the instant task order.

(b) Required bonds. (1) A performance bond is not required if the original contract, purchase order, or task order amount is $100,000 or less.

(2) A performance bond (Standard Form 25) is required if the original contract, purchase order, or task order amount exceeds $100,000. The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract, purchase order, or task order amount.

(3) Payment protection is not required if the original contract, purchase order, or task order amount is $30,000 or less.

(4) Payment protection is required if the original contract, purchase order, or task order is greater than $30,000. The penal amount of payment protection at the time of award shall be 100 percent of the original contract, purchase order, or task order amount. See FAR 52.228-13, Alternative Payment Protections, for the types of acceptable payment protection.

(c) Irrevocable letter of credit. If an irrevocable letter of credit is used, FAR 52.228-14, Irrevocable Letter of Credit, is applicable and can be found at http://www.arnet.gov/far/index.html.

(d) Additional bond protection. (1) The Government may require additional performance and payment bond protecction if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(2) The Government may secure the additional protection by directing the Contractor to increase the penal amount of hte existing bonds or to obtain an additional bond.

(e) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified elsewhere in the contract or order or prior to commencing work, whichever is sooner.

(f) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, or by other acceptable security such as postal money order, certified check, cashier s check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of

Treasury, Financial Management Service, Surety Bond Branch, 3700 East West Highway Room 6F01, Hyattsville MD 20782 or via the internet at http://www.fms.treas.gov/c570.

(g) Notice of subcontractor waiver of protection (40 U.S.C. 270 b(c). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(h) Upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the performance of this contract for which a payment bond has been furnished to the Government pursuant to the Miller Act, the Contractor shall promptly provide a copy of such payment bond to the requester.

(End of clause)

AOC52.228-6

Notice to Sureties (Jun 2004)

The final inspection and acceptance of the work included in this contract shall not be binding or conclusive upon the Government if it shall subsequently appear that the Contractor has willfully or fraudulently, or through collusion with the representatives of the Government in charge of the work, supplied inferior material or workmanship, or has departed from the terms of the contract, or if defects of any kind should develop during the period that the guarantees covering such material and workmanship are in force. In such event, the Government shall have the right, notwithstanding such final acceptance and payment, to have the work removed and to cause the work to be properly performed and satisfactory material supplied to such extent as, in the opinion of the Contracting Officer, may be necessary to finish the work in accordance with the drawings, if any, and specifications, at the expense of the Contractor and the sureties on its bond, and the Government shall have the right to recover against the Contractor and its sureties the cost of such work, together with such other damages as the Government may suffer because of the default of the Contractor in the premises, the same as though such acceptance and final payment had not been made.

(End of clause)

AOC52.232-4

Payments - Construction (Sep 2005)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, or estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor s request for progress payments shall including the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested;

(ii) A listing of the amount included for work performed by each subcontractor under the contract;

(iii) A listing of the total amount of each subcontract under the contract;

(iv) A list of the amounts previously paid to each such subcontractor under the contract; and

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete Paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification.

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor s performance.
(Name)_____
(Title) _____
(Date) _____

(d) Retainage. In making such progress payments, there shall be retained 10 percent of the estimated amount until final completion and acceptance of all work required by the contract. However, if the Contracting Officer, at any time after 50 percent of the work has been completed, finds that satisfactory progress is being made, he may authorize any of the remaining partial payments to be made in full. Also, whenever the work is substantially complete, the Contracting Officer, if he considers the amount to be retained to be in excess of the amount adequate for the protection of the Government, at his discretion, may release to the Contractor all or a portion of such excess amount. Furthermore, on completion and acceptance of each separate building, public work, or other division of the contract, on which the price is stated separately in the contract, payment may be made therefore without retention of a percentage. Retainage under any contract action awarded by the Architect functioning in the capacity as a Contracting Officer for the agency shall be released by the Architect rather than an administrative Contracting Officer.

(e) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(f) Final payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor s claims to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(g) Invoices shall be issued monthly as defined in Paragraph (b) in which services are performed by the Contractor. Properly certified invoices shall be FAXED to the Architect of the Capitol, Accounting Division at (202) 226-2580. Information concerning requirements for payment requisitions must be secured by telephoning the Accounting Officer at (202) 226 2552. Payment will be made on a monthly basis. To assist the AOC in making timely payments, the Contractor is requested to furnish the following additional information on the invoice:

(1) Contract Number;

(2) Name and address of Contractor;

(3) Invoice Date;

(4) Period the payment covers; and

(5) Amount by line item as identified in the Schedule.

(h) Each invoice shall be in accordance with the SCHEDULE OF SUPPLIES OR SERVICES AND PRICES/COSTS FOR CONSTRUCTION completed during the payment period. The Contractor shall keep accurate time records for each of his personnel employed in the work, and information copies of the Contractor's time records (payrolls) shall be submitted with each invoice for payment. Original certified copies of Contractor s payrolls shall have been submitted weekly in arrears to the Contracting Officer in

accordance with the Davis Bacon Act.

(i) Payments will be made directly to your financial institution through Direct Deposit/Electronic Funds Transfer (DD/EFT). The Contractor s attention is directed to the requirements of AOC52.232-6, Payment By Electronic Funds Transfer - Other than Central Contractor Registration.

(End of clause)

AOC52.232-6

Payment by Electronic Funds Transfer - Other than Central Contractor Registration (Jun 2004)

(a) Method of payment.

(1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT) except as provided in paragraph (a)(2) of this clause. As used in this clause, the term "EFT" refers to the funds transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the contractor agrees to either

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to delay payment until such time as the Government makes payment by EFT (but see paragraph (d)).

(b) Mandatory submission of Contractor s EFT information. (1) The Contractor is required to provide the Government with the information required to make payment by EFT (see paragraph (i) of this clause). The contractor shall provide this information directly to the office designated in paragraph (k) to receive that information (hereafter: "designated office") by three working days after notification of contract award. If not otherwise specified in this contract, the payment office is the designated office for receipt of the contractor s EFT information. If more than one designated office is named for the contract, the contractor shall provide a separate notice to each office. In the event that the EFT information changes, the contractor shall be responsible for providing the updated information to the designated office(s).

(2) If the contractor provides EFT information applicable to multiple contracts, the contractor shall specifically state the applicability of this EFT information in terms acceptable to the designated office. However, EFT information supplied to a designated office shall be applicable only to contracts that identify that designated office as the office to receive EFT information for that contract.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment.

(1) Notwithstanding the provisions of any other clause of this contract, the Government is not required to make any payment under this contract until after receipt, by the designated payment office, of the correct EFT payment information from the Contractor. Until receipt of the correct EFT information, any invoice or contract financing request shall be deemed not to be a valid invoice.

(2) If the EFT information changes after submission of correct EFT information, the Government shall begin using the changed EFT information no later than the 30 days after its receipt by the designated office to the extent payment is made by EFT. However, the Contractor may request that no further payments be made until the changed EFT information is implemented by the payment office.

(e) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government failed to use the Contractor provided EFT information in the correct manner, the Government remains responsible for--

(i) Making a correct payment; and

(ii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because Contractor s EFT information was incorrect at the time of Government release or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment and the provisions of

paragraph (d) shall apply.

(f) EFT and assignment of claims. If the contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the contractor shall require as a condition of any such assignment that the assignee shall provide the EFT information required by paragraph (i) of this clause to the designated office and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the contractor. EFT information that shows the ultimate recipient of the transfer to be other than the contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of Paragraph (d) of this clause.

(g) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information provided by the contractor s financial agent.

(h) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address in the contract.

(i) EFT Information. The contractor shall provide the following information to the designated payment office. The contractor may supply this data for this or multiple contracts (see paragraph (b) of this clause). The Contractor shall designate a single financial agent per contract capable of receiving and processing the EFT information using the EFT methods described in paragraph (c) of this clause. The information required is as follows:

(1) The contract number;

(2) The contractor s name and remittance address as stated in the contract(s);

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

(4) The name, address, and 9 digit Routing Transit Number of the contractor s financial agent; and

(5) The contractor s account number and the type of account (checking, saving or lockbox).

(j) The Contractor shall send all EFT information, and any changes to EFT information to the office designated in paragraph (k) of this clause. The Contractor shall not send EFT information to the payment office, or any other office than that designated in paragraph (k). The Government need not use any EFT information sent to any office other than that designated in paragraph (k).

(k) Designated office:

Name:
Architect of the Capital
Accounting Division
Mailing Address:
2nd and D Streets SW
Ford House Office Building
Washington, DC 20515

Telephone:
(202) 226-2552
Facsimile:
(202) 225-7321

(End of clause)

AOC52.232-9

Payment of Interest on Contractor Claims (Jun 2004)

(a) If an appeal is filed by the Contractor from a final decision of the Contracting Officer under the Disputes paragraph of this contract, denying a claim arising under the contract, simple interest on the amount of the claim finally determined owed by the Government shall be payable to the Contractor. Such interest shall be at the rate determined by the Secretary of the Treasury pursuant to Public Law 92 41, 85 Stat. 97, from the date the Contractor furnishes to the Contracting Officer his written appeal under the

Disputes paragraph of this contract, to the date of (1) a final judgement by a court of competent jurisdiction, or (2) mailing to the Contractor of a change order, or a supplemental agreement for execution either confirming completed negotiations between the parties or carrying out a decision of a contract appeals board.

(b) Notwithstanding Paragraph (a) above, (1) interest shall be applied only from the date payment was due, if such date is later than the filing of appeal, and (2) interest shall not be paid for any period of time that the Contracting Officer determines the Contractor has unduly delayed in pursuing his remedies before a board of contract appeals or a court of competent jurisdiction.

(End of clause)

AOC52.232-12

Assignment - Supplement (Sep 2004)

Neither the contract nor any interest therein shall be assigned. However, moneys due or to become due under the contract may be assigned in accordance with the provisions of FAR clause 52.232-23 (ASSIGNMENT OF CLAIMS) as incorporated by reference in Section I.

(End of clause)

AOC52.233-1

Disputes (Jun 2004)

(a) Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contracting Officer shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the head of the agency involved. The decision of the head of the agency or his duly authorized representative for the determination of such appeals shall be final and conclusive. This provision shall not be pleaded in any suit involving a question of fact arising under this contract as limiting judicial review of any such decision to cases where fraud by such official or his representative or board is alleged; provided, however, that any such decision shall be final and conclusive unless the same is fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith or is not supported by substantial evidence. In connection with any appeal proceeding under this paragraph, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of his appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

(b) This paragraph does not preclude consideration of questions of law in connection with decisions provided for in Paragraph (a) above. Nothing in this contract, however, shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

(End of clause)

AOC52.233-2

Claims for Equitable Adjustments - Waiver and Release of Claims (Jun 2004)

(a) Whenever the Contractor submits a claim for equitable adjustment under any paragraph of this contract which provides for equitable adjustment of the contract, such claim shall include all types of adjustments in the total amounts to which the paragraph entitles the Contractor, including but not limited to adjustments arising out of delays or disruptions or both caused by such change. Except as the parties may otherwise expressly agree, the Contractor shall be deemed to have waived (1) any adjustments to which it otherwise might be entitled under the paragraph where such claims fail to request such adjustments, and (2) any increase in the amount of equitable adjustments additional to those requested in its claim.

(b) Further, the Contractor agrees that, if required by the Contracting Officer, he will execute a release, in form and substance satisfactory to the Contracting Officer, as part of the supplemental agreement setting forth the aforesaid equitable adjustment, and that such release shall discharge the Government, its officers, agents and employees, from any further claims, including but not limited to further claims arising out of delays or disruptions or both, caused by the aforesaid change.

(End of clause)

AOC52.233-3

Limitation on Damages for Delay (Jun 2004)

(a) The Architect shall not be obligated or liable to the Contractor for, and the Contractor hereby expressly waives any claims against the Architect on account of any damages, of any nature whatsoever, which the Contractor, or its subcontractor at any tier may incur as a result of delays, interferences, disruptions, suspensions, changes in sequence or the like arising from or out of any act or omission of the Architect, it being understood and agreed that the Contractor's sole and exclusive remedies in such event shall be a reimbursement of direct costs necessarily incurred as a result of the foregoing causes, and an extension of the contract time, but only in accordance with the provisions of the Contract Documents.

(b) For the purposes of this clause, the term "Damages" shall include all indirect and/or impact costs which shall include, without limitation: unabsorbed Home Office Overhead (including calculations under the "Eichleay Formula"), Idle Labor and Equipment, Loss of Productivity, and Interest; the term "Damages" shall not include on-site direct costs, which shall include direct labor (superintendence, labor, time-keeping, and clerical work) direct materials and supplies (including material handling), direct equipment, restoration and cleanup, overhead and profit (but only as permitted under the clauses Changes and Changes - Supplement, taxes, insurance, and bonding costs, which will be calculated in accordance with the clauses Changes and Changes - Supplement. Provided, however, that the accounting practice of treating these costs as "direct" shall be in accordance with

(1) The Contractor's established and consistently followed cost accounting practices for all work; and

(2) FAR Cost Accounting Cost Principles and Procedures (FAR Part 31).

(c) To the extent that any other provision of this contract provides for the payment of damages, as defined in this clause, to the Contractor and is thus inconsistent with the provisions of this clause, such other provision will be superseded hereby with respect to the issue of damages.

(End of clause)

AOC52.236-1

Access to Work (Jun 2004)

(a) The Contracting Officer or his representative may visit and inspect the Contractor's plant, without advance notice, at any time during the course of this contract, and he shall be granted every available assistance to facilitate such inspection.

(b) The Contracting Officer and proper members of his staff shall at all times have access to the work, and the Contractor shall provide proper and safe facilities for such access and for inspection.

(End of clause)

AOC52.236-2

Other Contracts and Work (Jun 2004)

(a) The Contractor shall fully inform himself as to conditions relating to construction and labor under which other work, if any, is being performed, or is to be performed, by or for the Government, by contract or otherwise, where such work may affect or be affected by, operations under this Contract.

(b) Notwithstanding the performance by other parties of work at the site during performance of this contract, the Contractor shall prosecute the work diligently and continuously, and he shall cooperate in every way with such other parties. The Contractor shall give such other parties, to the extent their work is affected by his work, all information necessary for the proper execution of their work, without delay. The Contractor shall so arrange and conduct his work that other parties may complete their work at the site according to schedule. All other work under the instant contract shall be carefully coordinated with work under such other contracts.

(End of clause)

AOC52.236-3

Accident Prevention and Safety and Health Programs - Construction (Sep 2004)

(a) The Contractor shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others and comply with the safety and health standards published in 41 C.F.R. Part 50-205, including any matters incorporated by reference therein. He shall also be responsible for all materials delivered and work performed until completion and final acceptance of the entire contract work, except for any completed unit thereof which theretofore may have been finally accepted.

(b) Williams-Steiger Occupational Safety and Health Act. The Contractor shall also comply in all aspects of the job with the regulations issued by the Secretary of Labor pursuant to the Williams-Steiger Occupational Safety and Health Act of 1970, as set forth in Title 29 of the Code of Federal Regulations. The Contractor shall bring to the attention of the Architect any work encountered

which may involve entry into a suspected confined space as defined by OSHA. A determination will be made by the Architect, and if the area is deemed a permit required confined space, additional protective measures will be needed, per OSHA requirements.

(c) National Fire Protection Association standards. The Contractor shall comply with all applicable standards of the National Fire Protection Association relative to fire prevention, except to the extent that more exacting requirements are specified or imposed by the Contracting Officer. The Contractor shall keep and properly maintain fire prevention devices at the job site and shall take all possible precautions deemed necessary by the Government representative in charge of the work.

(d) Protection of property and persons. (1) The Contractor shall protect all of his material and work at the site, whether incorporated in the work or not, against damage or loss from any cause, and he shall take all necessary precautions against damage to all other work and material on the site. He shall provide and maintain necessary safeguards for protection of his employees, Government employees and the public generally, and he shall take all other proper precautions for their protection against injury. He shall comply with all directives and regulations of the Contracting Officer and other proper authorities relative to the use of public property.

(2) The Contractor shall protect all electric, telephone, computer facilities, water, gas, sewer, steam and other underground utility lines, in sidewalks, streets or other areas in, under or around the site, to the satisfaction of the Contracting Officer, the Government of the District of Columbia, and all other authorities having jurisdiction.

(3) The performance of work at the site by other parties shall not relieve the Contractor from any liability for loss or damage or from his obligations under this contract. No agreement or arrangement between the Contractor and others as to a division or proportionate share of liability for loss or damage incurred, or of the cost of insurance, shall in any way relieve the Contractor of such liability or his obligations under this contract.

(e) The Contractor shall comply with the requirements of FAR 52.236.13, Accident Prevention. In the event that conditions on the site pose an imminent danger or threat to the Contractor s workers, the public, Government employees, other persons, or to Capitol complex structures and property of historical significance, the Contracting Officer can verbally order the Contractor to suspend work operations in the specified area until said conditions are corrected to the Contracting Officer s satisfaction. The Contracting Officer shall promptly issue a written order to suspend the work to the Contractor formalizing the specifics of the verbal suspension of work.

(f) The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(End of clause)

AOC52.236-4

Cutting and Patching (Jun 2004)

Prior to initiation of the work operations of either cutting or patching, as a necessary requirement of the work under this contract, of any structural component or of lintels, stair systems, piping, duct work, vessels, equipment and like items in the building, the Contractor shall consult with the Contracting Officer and follow explicitly his directions and stated requirements concerning methods, materials, the manner in which the work is performed, and the level of competence and skill possessed by Contractor's employees, or those of subcontractors, who are proposed to be employed in said cutting and/or patching operations.

(End of clause)

AOC52.236-5

Cleaning and Restoring (Jun 2004)

(a) The contractor shall remove dirt and debris resulting from the operations under this contract daily.

(b) The Contractor shall, as a condition precedent to the final acceptance of the work, remove from the site of the work all remaining plant, installations, temporary barricades, temporary facilities, equipment, tools, materials, refuse, rubbish and waste, used or accumulated in connection with, but not incorporated in, the work, unless otherwise specified or directed, and he shall leave the buildings, grounds, streets, and all public places occupied by him in a thoroughly clean, neat and satisfactory condition.

(End of clause)

AOC52.236-8

Scheduling of Work (Aug 2004)

(a) The Contractor shall, before commencing work on the contract or another period of time determined by the Contracting Officer,

prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of partial payments until the Contractor submits the required schedule.

(b) The Contractor shall furnish sufficient forces, construction plant and equipment, and shall work such hours as necessary to insure prosecution of work in accordance with the approved schedule. If, in the opinion of the Contracting Officer, the Contractor falls behind in the scheduled progress, the Contractor shall take such steps as may be necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained. The provisions of this subparagraph shall not be construed as prohibiting work on Saturdays, Sundays and holidays and, for work performed in the District of Columbia, Presidential Inauguration Day, if the Contractor so elects and if approved.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

(End of clause)

AOC52.236-9

Schedule of Values (Jun 2004)

(a) The Contractor shall, in accordance with the requirements of the Contracting Officer, prepare and submit for approval a schedule of estimated values of all parts of the work, and shall submit such quantity breakdowns pertinent thereto as the Contracting Officer may deem necessary for the proper checking of partial payment requisitions and for other administrative purposes. The total of the schedule of values shall equal the amount of the contract. The values employed in making this schedule will be used only for determining partial payments; they will not be used as a basis for determining an increase or decrease in the contract price. The listings and subdivisions of this schedule for estimated costs and quantity breakdowns shall be as approved by the Contracting Officer.

(b) The submission and approval of the schedule of values shall be a condition precedent to the making of partial payments.

(End of clause)

AOC52.236-10

Specifications and Drawings for Construction (Feb 2007)

(a) The Contractor shall keep on the site of the work a copy of the drawings and specifications, and of approved shop drawings, product data and samples and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, or in case of discrepancy either within the figures, within the drawings, or within the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information he considers necessary, unless otherwise provided.

(b) Shop drawings means drawings submitted to the Government by the Contractor, subcontractor, any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements and (2) the installation (i.e., form, fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract.

(c) The Contractor shall--

(1) Check all drawings furnished immediately upon receipt;

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

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

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

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

(d) In general--

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

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

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

(f) The work shall conform to the specifications and the contract drawings included as part of this contract.

(g) The Contractor shall submit to the Contracting Officer for approval shop drawings, product data and samples as required under the various sections of this Project Manual. The Contractor shall coordinate all such submittals, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings, product data, or samples submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for re-submission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such submittals, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with Paragraph (d) below.

(h) If shop drawings, product data, or samples show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(i) Upon completing the work under this contract, the Contractor shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the equipment is completed and accepted. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings, product data or samples delivered under this contract.

(j) The provisions of this entire paragraph shall be included in all subcontracts at any tier.

(End of clause)

AOC52.236-12

Product Data and Samples (Jun 2004)

(a) Product data shall mean information (e.g., catalog cuts, standard illustrations, drawings, performance charts, data and brochures) pertinent to a particular product, equipment or material required as a part of the work. Product data is required to establish, for the purposes of evaluation and approval, details of the product offered in response to specifications elsewhere in the contract documents. Product data pertains to significant elements such as (1) design; (2) materials; (3) components; (4) performance characteristics; and (5) methods of manufacture, assembly, construction, or operation. The term includes, in addition to the above, the manufacturer's standard printed recommendations for application and use, compliance with recognized standards of trade associations and testing agencies, and the application of their labels and seals (if any).

(b) Samples are physical examples of materials, equipment or workmanship that will be used by the Contracting Officer to establish standards by which the work will be judged.

(c) Samples not subject to destructive tests may be retained by the Contracting Officer until completion of the work; they will then be returned to the Contractor, at his own expense, if he so requests in writing.

(End of clause)

AOC52.243-1

Changes - Supplement (Jun 2004)

(a) Definitions.

(1) A change order is a unilateral contract modification, signed by the Contracting Officer, which describes and identifies a particular change in the requirements as permitted by the FAR clause, 52.243-4, Changes and authorizes the contractor to begin performance with the changed requirements. The change order may reference pertinent oral or written directives, provide an adjustment to the contract price and/or time for performance, and direct the contractor to submit a proposal for definitization of the change order.

(2) A supplemental agreement is a bilateral contract modification, signed by the contractor and the Contracting Officer, which either authorizes the contractor to begin performance with the changed requirements in accordance with the equitable adjustment agreed to prior to commencement of performance of the changed requirements or definitizes a change order after agreement of an equitable adjustment to the contract.

(3) Request for Proposal. A request by the Contracting Officer or his duly authorized representative for the contractor to submit a proposal for requirements contemplated to be changed. Such proposal shall be submitted within the time limit specified in the request and in accordance with the requirements and limitations of this clause.

(b) Authorization of changes. All changes to contract requirements will be authorized in writing by the Contracting Officer through one of the following methods:

(1) A Supplemental Agreement, with the concurrence of the contractor; or

(2) A unilateral Change Order.

(c) Submission of proposals and cost breakdowns by the contractor.

(1) Proposals for changes to the contract requirements shall include a brief description of the change; a breakdown of costs as outlined hereinafter; and a time impact analysis (fragnet).

(2) In considering proposals for changes involving added requirements, omitted requirements, or any combination thereof, the Contracting Officer or his duly authorized representative will make check-estimates in such detail as he deems necessary with the view of arriving at equitable adjustments. With each proposal, the contractor shall submit separately an itemized breakdown as per "Exhibit A" hereof, which shall include, but not be limited to, the following:

(i) Direct labor costs;

(ii) Social Security and Unemployment Insurance Taxes;

(iii) Workmen's compensation and general liability insurance;

(iv) Direct material quantities and unit prices (separated into trades);

(v) Construction equipment;

(vi) Overhead; and

(vii) Profit.

(3) If the contractor believes that the change in the contract requirements affects the contract period of performance, as required by AOC52.211-5, Commencement, Prosecution, and Completion of Work, of the Supplementary Conditions, appropriate substantiation must be submitted for evaluation/review.

(4) A complete proposal, including breakdown of cost and time impact, shall be submitted by the contractor within the time frame stipulated in calendar days by the Government for each proposed change. Generally, complete proposals shall be submitted by the contractor within 7 calendar days after the contractor receives the request for proposal, although this time frame may be adjusted for more complex or more urgent requirements. Except as provided by an individual contract modification, no payment for a change order will be made until a supplemental agreement has been signed by the contractor and the Contracting Officer. If complete proposals are not received timely, the Contracting Officer, after consultation with his authorized representative, may determine the cost of the change and the time impact and issue a change order based upon this determination with the stipulation that if a supplemental agreement is not negotiated within a reasonable amount of time, this determination will be final and conclusive, subject only to the contractor's rights of appeal as provided in AOC52.233-1, Disputes, of the General Conditions.

(d) Allowances for overhead and profit.

(1) The following percentages will be allowed for overhead and profit:

(i) The contractor shall receive, as a percentage of the cost of all work performed by his own organization, an amount not to exceed 10% overhead and not to exceed 10% profit; and

(ii) If subcontractor(s) are involved in the change, a fee in an amount not to exceed 10% as a percentage of the total price of the subcontractor portion of the change.

(iii) Subcontractor(s) to the prime contractor (first tier subcontractor(s)) shall receive, as a percentage of the cost of all work performed by or for it, a total amount not to exceed 10% overhead and not to exceed 10% profit.

(iv) The percentages for fees, overhead, and profit permitted by the above shall be allowed only for the contractor and its first tier subcontractors. Percentages for fees, overhead, and profit in any amount will not be allowed for subcontractors of any other tier.

(2) Percentages for overhead allowed are deemed to include, but shall not be limited to, the following:

(i) Field Overhead Items.

(A) Trailer;

(B) Storage Facilities;

(C) Contractor's and subcontractor's superintendence;

(D) Construction equipment/tools, except those that are specially required for a specific change;

(E) Utilities;

(F) Contractor's and subcontractor's field office, administrative/support staff;

(G) Cost of preparing record drawing changes, correspondence, etc., relating to the contract;

(H) Job site safety aids; and

(I) Cleaning and maintenance of nuisance debris from jobsite.

(ii) Office Overhead Items for Contractor and Subcontractors.

(A) Maintenance/operation of principal or branch offices;

(B) Personnel costs;

(C) Cost for preparing correspondence, fragnets, etc., relating to the contract; and

(D) Cost of insurance and bonds, except for insurance costs relating to direct labor, as outlined in "Exhibit A".

(iii) For changes which include custom items unique to the project and which are fabricated off-site, the fabricator, whether the contractor or a subcontractor at any tier, shall furnish a breakdown of costs associated with the work in the fabricating plant. This breakdown shall include labor, material, equipment and overhead/plant costs in sufficient detail to allow for review by the Contracting Officer or his duly authorized representative. Costs charged to overhead/plant shall be allowable costs for the fabricator, whether he is the contractor or a subcontractor at any tier, provided that the costs claimed are consistent with the provisions of Subpart 31.203 of the Federal Acquisition Regulation (Chapter 1, Title 48, Code of Federal Regulations). An amount not to exceed 10% of the cost of the fabricated item will be allowed for the fabricator's profit. If the fabricator is a subcontractor, the overhead and profit percentages for the contractor and any subcontractor at a higher tier having a contractual relationship with the fabricator shall be allowed in accordance with this clause.

(e) Changes involving decreases in price. For changes involving only a decrease in price, the contractor and subcontractors shall return as credit for overhead and profit those same percentages which are allowed for like changes involving increases in price. On changes involving both an increase and a decrease in price, overhead and profit will be allowed only on the net increase.

(f) Changes involving increases or decreases on basis of contract specified unit prices. No percentages for overhead and profit will be added to, or deleted from, any unit prices in event of an increase or decrease in the contract requirements on the basis of contractual unit prices.

EXHIBIT A

**TYPICAL FORM OF BREAKDOWN FOR PRICE ADJUSTMENT**

**SUBCONTRACTORS' BREAKDOWN**

| | | | | | | Extensions | | |
|---|---|---|---|---|---|---|---|---|
| Items Involved | Quantities | Unit Cost | Equipment | Material | Labor | Totals | Final Totals | Unit Cost |
| Excavation (Identify) | | | | | | | | |
| * Volume | | | | | | | | |
| * Crane Operator | | | | | | | | |
| * Laborers | | | | | | | | |
| Shoring (Identify) | | | | | | | | |
| * Area | | | | | | | | |
| * Welder | | | | | | | | |
| Subcontractor Total | | | | | | | | |

**PRIME CONTRACTOR'S BREAKDOWN**

| | | | | | | Extensions | | |
|---|---|---|---|---|---|---|---|---|
| Items Involved | Quantities | Unit Cost | Equipment | Material | Labor | Totals | Final Totals | Unit Cost |
| West Wall (Cinder Block) | | | | | | | | |
| * Area | | | | | | | | |
| * Block 8x8x16 | | | | | | | | |
| * Mortar | | | | | | | | |
| * Mason | | | | | | | | |
| * Laborer | | | | | | | | |
| Subtotal | | | | | | | | |
| Prime Contractor's Total | | | | | | | | |
| Prime Contractor's Overhead and Profit on Subcontractor | | | | | | | | |
| Total | | | | | | | | |

(End of Clause)

AOC52.244-1

Award of Subcontracts and Other Contracts for Portions of the Work (Sep 2005)

(a) The Contractor is responsible for coordination of all work performed by its own workforce and those of its subcontractors. Each subcontractor shall be experienced in and capable of performing in a satisfactory manner all work in his speciality, and shall meet the standard of competence established for the Contractor.

(b) The Contractor shall be responsible for all acts of subcontractors employed by him under this contract, and for their compliance with all terms and provisions of the contract applicable to their performance. The Contractor shall continuously coordinate the work of all sub-contractors to assure proper processing and progress of the Work. The Contractor shall require each subcontractor to (1) examine the project schedule, shop drawings and the work of other trades and all sections of the specifications to the extent necessary for satisfactory Installation of his work, and connection between his work and the work of other trades; (2) coordinate his work accordingly; and (3) cooperate with other trades toward timely and satisfactory completion of the entire work.

(c) Organization of the specifications into sections and subsections and the arrangement of drawings shall not control the Contractor in dividing work among subcontractors or in establishing the extent of work to be performed by any trade.

(d) The Government reserves the right to require dismissal of any subcontractor who, by reason of previous unsatisfactory work on AOC projects or for any other reason, is considered by the Contracting Officer to be incompetent or otherwise objectionable for performing work under this contract.

(e) Nothing contained in the contract documents shall create any contractual relations between any subcontractor and the Government.

(End of clause)

AOC52.245-2

Government-Furnished Property (Nov 2004)

(a) For the purposes of this clause, Government-furnished property includes cell phones and telephones, personal digital assistants, computers (including laptops), electronic devices, services such as network access, tools, furnished space, storage, utilities, furnishings, equipment, and any other item or service provided by the AOC to the contractor.

(b) No AOC equipment or property can be provided under this contract unless specifically negotiated as part of the award price. If, after contract award, it becomes necessary or advisable to issue AOC property to the contractor, the contract price shall be reduced by a reasonable amount that reflects the price the contractor would pay if providing the property.

(c) The Contracting Officer s Technical Representative (COTR) for this contract is responsible for coordinating the issuance and return of Government-furnished property.

(d) Any Government-furnished property provided to the contractor for use during performance of this contract shall be issued to the contractor s representative and recorded on AOC Form 1423, AOC PROPERTY ISSUED TO CONTRACTORS. The contractor s representative shall be responsible for the ensuring the proper care and use of the Government-furnished property, whether used by the contractor representative or another contractor employee. Government-furnished property provided by the AOC can be used only for the conduct of official business on behalf of the AOC. The contractor is specifically prohibited from using AOC-furnished property for personal use or to conduct operations that benefit other Government agency contracts or other contractor activities that do not directly support AOC contracts.

(e) All information technology property that requires interface or connection to the AOC network must be provided by the AOC. The use of non-AOC IT property that requires interface or connection to the AOC network is strictly prohibited.

(f) All contractor employees who require access to the AOC network or who are issued a personal digital assistant must complete and sign the Non-disclosure Agreement for Contract Employees Conditional Access to Sensitive but Unclassified Information for The Architect of The Capitol before access will be granted. The COTR is responsible for providing the non-disclosure agreements to the AOC Office of Information Resources Management.

(g) All Government-furnished property shall be returned by the contractor to the COTR in the same condition as issued, with allowances for wear and tear that occurs with reasonable care and use. Failure to return Government-furnished property or the return of Government-furnished property that has not been properly maintained and used may result in a reduction to the contract price that reflects the market replacement value of the property or the market price to repair or restore the property to its condition when issued to the contractor.

(End of clause)

AOC52.246-1

Final Inspection and Acceptance - Construction - Supplement (Mar 2007)

(a) No inspection or other action of the Government shall be construed to constitute a final acceptance of any portion of the work under this contract until all work under the contract is completed. None of the work under the contract shall be deemed to be finally accepted until the Contractor, upon completion and final inspection of all work, is notified in writing of final acceptance of work under the contract, or in lieu thereof, until final payment of the final voucher as prescribed in AOC52.232-4, Payments - Construction. The provisions of FAR clause 52.246-12, Inspection of Construction are hereby modified by the provisions of this paragraph with respect to the finality of acceptance of any portion of the work by the Government prior to completion of all work under the contract.

(b) The Contractor shall notify the Contracting Officer, at least 10 days in advance, of the date the work will be fully complete and ready for final inspection. Any additional costs incurred by the Government due to necessary reinspection of work found not ready for final inspection upon the Contractor's notice of completion will be charged to the Contractor and deducted from the contract price.

(End of clause)

AOC52.246-3

Warranty of Commercial Items (Jun 2004)

The Contractor warrants and implies that the items delivered hereunder are merchantable and fit for use for the particular purpose

described in this contract.

(End of clause)

AOC52.246-6

Additional Warranty Coverage (Jun 2004)

If the Contractor receives from any manufacturer, supplier or subcontractor additional warranty coverage on the whole or any component of the work required by this contract, in the form of time including any pro rata arrangements, or the Contractor generally extends to his commercial customers a greater or extended warranty coverage, the Government shall receive corresponding warranty benefits.

(End of clause)

## Clauses By Reference

| Clause | Title | Date |
|---|---|---|
| 52.246-12 | Inspection of Construction | 11/08/2006 |

## Clauses By Reference

| Clause | Title | Date |
|---|---|---|
| 52.203-3 | Gratuities | 11/08/2006 |
| 52.203-5 | Covenant Against Contingent Fees | 11/08/2006 |
| 52.203-6 | Restrictions On Subcontractor Sales To The Government | 11/08/2006 |
| 52.215-2 | Audit and Records--Negotiation | 11/08/2006 |
| 52.222-4 | Contract Work Hours and Safety Standards Act - Overtime Compensation | 11/08/2006 |
| 52.222-6 | Davis Bacon Act | 11/08/2006 |
| 52.222-7 | Withholding of Funds | 11/08/2006 |
| 52.222-8 | Payrolls and Basic Records | 11/08/2006 |
| 52.222-9 | Apprentices and Trainees | 11/08/2006 |
| 52.222-10 | Compliance with Copeland Act Requirements | 11/08/2006 |
| 52.222-11 | Subcontracts (Labor Standards) | 11/08/2006 |
| 52.222-12 | Contract Termination-Debarment | 11/08/2006 |
| 52.222-13 | Compliance with Davis-Bacon and Related Act Regulations. | 11/08/2006 |
| 52.222-14 | Disputes Concerning Labor Standards | 11/08/2006 |
| 52.222-15 | Certification of Eligibility | 11/08/2006 |
| 52.222-26 | Equal Opportunity | 03/22/2007 |
| 52.222-27 | Affirmative Action Compliance Requirements for Construction | 11/08/2006 |
| 52.222-35 | Equal Opportunity For Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans | 11/08/2006 |

| Clause | Title | Date |
|---|---|---|
| 52.222-36 | Affirmative Action For Workers With Disabilities | 11/08/2006 |
| 52.222-37 | Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era, and Other Eligible Veterans | 11/08/2006 |
| 52.223-6 | Drug Free Workplace | 11/08/2006 |
| 52.227-1 | Authorization and Consent | 11/08/2006 |
| 52.227-4 | Patent Indemnity-Construction Contracts | 11/08/2006 |
| 52.228-2 | Additional Bond Security | 11/08/2006 |
| 52.229-3 | Federal, State And Local Taxes | 11/08/2006 |
| 52.232-23 | Assignment Of Claims | 11/08/2006 |
| 52.236-2 | Differing Site Conditions | 11/08/2006 |
| 52.236-3 | Site Investigation and Conditions Affecting the Work | 11/08/2006 |
| 52.236-6 | Superintendence by the Contractor | 11/08/2006 |
| 52.236-7 | Permits and Responsibilities | 11/08/2006 |
| 52.236-8 | Other Contracts | 11/08/2006 |
| 52.236-11 | Use and Possession Prior to Completion | 11/08/2006 |
| 52.236-13 | Accident Prevention | 11/08/2006 |
| 52.236-26 | Preconstruction Conference | 11/08/2006 |
| 52.242-13 | Bankruptcy | 11/08/2006 |
| 52.243-4 | Changes | 11/08/2006 |
| 52.245-2 | Government Property (Fixed Price Contracts) | 11/08/2006 |
| 52.246-21 | Warranty of Construction | 11/08/2006 |
| 52.249-2 Alt I | Termination for Convenience of the Government (Fixed-Price) - Alternate I | 11/08/2006 |
| 52.249-10 | Default (Fixed-Price Construction) | 11/08/2006 |

## Supplementary Conditions

AOC52.201-1

Contracting Officers Authority (Jun 2004)

The Contracting Officer is the only person authorized to make or approve any changes in any of the requirements of this contract, notwithstanding any provision contained elsewhere in this contract. In the event that the Contractor makes any change at the direction of any person other than the Contracting Officer, the change will be considered to have been made without authority and no adjustment will be made in the contract price to cover any increase in costs incurred as a result thereof.

(End of clause)

AOC52.201-2

Contracting Officers Technical Representative (COTR) (Mar 2005)

The Government shall provide the name, address and telephone number of the COTR at the time of contract award and the duties thereby delegated to that person. Any subsequent change to the individual or the individual s responsibilities will be confirmed in writing by the Contracting Officer. In no instance will the COTR be delegated authority to order any change in the contractor s performance which would affect (a) cost or schedule for contracts for services or supplies, or (b) scope, the completion date for intermediate phases or milestones, or overall completion date for contracts for construction.

(End of clause)

AOC52.211-5

Commencement, Prosecution and Completion of Work (Mar 2007)

(a) All work to be performed under this contract shall be completed within 196 calendar days after the date of contract award. No work under this contract shall be performed on Saturdays, Sundays or Federal holidays and, for work performed in the District of Columbia, Presidential Inauguration Day, except with prior approval of the Contracting Officer.

(b) Time for completion of the contract work will be adjusted only in accordance with applicable clauses, e.g., Differing Site Conditions, Changes, Changes - Supplement , Suspension of Work, or other clauses, as appropriate.

(End of clause)

AOC52.223-5

Special Security Requirements - Services (Jun 2007)

(a) All vehicles, and contents, used by the Contractor or his subcontractors, which enter or leave United States Government property during performance of the work, will be subject to clearance, inspection and identification procedures conducted by the United States Capitol Police.

(b) All persons entering the Legislative Branch Buildings shall gain access to the building by passing through x-ray screening devices. In addition, all handbags and all hand-carried items shall be screened by x-ray devices prior to their entry into the building.

(c) All personnel provided by the Contractor and employed on the site of the work will be subject to a security background investigation. Each employee will be required to fill out an I.D. Request Form and U.S. Capitol Police Request for check of Criminal History Records and each employee will be photographed and fingerprinted. The Contractor shall provide any assistance required by any of its employees in completing the forms.

(d) Prior to commencement of work, the contractor and all designated on-site employees will be required, on a one-time basis, to be fingerprinted in Washington D.C. The location for the Electronic Fingerprinting Service is the U.S. Capitol Hill Police, Fairchild Building, 499 South Capitol Street SW, Washington, DC 20003.

(e) Within seven (7) calendar days after the date of contract award, the Contractor shall submit to the Contracting Officer's Technical

Representative (COTR) a list of all employees proposed to be employed on this contract. This list shall include the employee's full name, date of birth and social security number.

(f) While security background investigations are in process, the Contractor's employees must not be granted access to the Capitol Hill complex to perform work or provide services for the AOC unless they are escorted by an AOC staff member. "Escorted" is defined to mean that the AOC staff member will remain with the employee(s) at all times during the performance of the work. Any of the Contractor's employees who are perceived by the Contracting Officer as a security risk as a result of evidence discovered in the background security investigation will not be issued an Identification Card, will be denied access to the site of the work, and the Contractor will be directed to remove such employee from performance of any of the contract work, whether it be on or off the work site. Any contractor employee denied access to the site of work on a contract or task/delivery order as a result of a security investigation may not apply for access to any other AOC/U.S. Supreme Court contract or task/delivery order work site.

(g) An identification card, with photograph, will be prepared for each employee of the Contractor requiring access to the site. The identification card shall be dated to indicate the period of time for which it is to remain valid - from the date the employee reports for duty until the applicable date which occurs first: the expiration of the contract, or the last date of the employee's tour of duty with the Contractor. All contractor personnel must wear the ID badge whenever on the Capitol complex premises or when attending off-site functions on behalf of the AOC. ID badges must be worn in such a manner that contractor personnel can be easily identified as such.

(h) The Contractor is fully responsible to return:

(1) The ID badge of any individual employee, including subcontractor personnel, who is removed for any reason including but not limited to illness, or dismissal;

(2) The ID badges of all contractor employees, including subcontractor personnel, whose performance under the contract is completed in advance of final contract job completion; and

(3) All outstanding ID badges issued for the contractor and its employees, including subcontractor personnel, within 24 hours of on site contract job completion.

(i) ID badges are to be hand delivered by the contractor within 24 hours of any of the events listed under (f) above to the Contracting Officer's Representative.

(j) The Contractor's failure to return any ID badge, access card, or key issued under this contract or order shall result in a deduction of $100.00 from the contract per ID badge, access card, and/or key not returned.

(End of clause)

AOC52.223-8

DELIVERY VEHICLE INSPECTION REQUIREMENTS (Apr 2007)

(a) All vehicles and contents used by the Contractor or his subcontractors which enter or leave United States Government property during performance of work under this contract will be subject to clearance, inspection, and identification procedures conducted by the United States Capitol Police.

(b) Mobile Vehicle and Cargo Inspection System (Mobile VACIS). All delivery vehicles carrying fuel, garbage, or similar cargo that cannot be offloaded for inspection and security screening shall utilize the Mobile VACIS located at Third and Pennsylvania Avenue, NW, Washington, DC, for inspection prior to making deliveries to any building within the Capitol Complex, including, but not limited to, the U.S. Capitol Building; the U.S. Botanic Garden; the Hart, Dirksen, and Russell Senate Office Buildings; the Rayburn, Longworth, Cannon, and Ford House Office Buildings; the Thomas Jefferson, John Adams, and James Madison Memorial Library of Congress buildings; the Capitol Power Plant; the Capitol Visitors Center; and the U.S. Supreme Court and Thurgood Marshall Federal Judiciary Buildings.

(c) 4700 Shepherd Parkway SW inspection facility. All other vehicles making deliveries to the above listed locations except for the U. S. Supreme Court shall utilize the off-site inspection and screening facilites at 4700 Shepherd Parkway SW, Washington, DC 20032.

(d) For all deliveries within seven calendar days or prior to the first delivery, the contractor shall provide the following information to the U.S. Capitol Police:

(1) List of drivers;

(2) Date of birth for each driver;

(3) Social Security Number of each driver;

(4) Vehicle make;

(5) Vehicle model;

(6) License tag number and state where vehicle is licensed;

(7) Color of vehicle; and

(8) Contractor name, if shown on the vehicle.

(e) Information for deliveries made through the Mobile VACIS unit must be faxed to (202) 228-4313. For verification of receipt, the contractor may call (202) 224-9728. Updates to the information for Mobile VACIS deliveries must be sent to the U.S. Capitol Police throughout the period of performance of the contract.

(f) Information for deliveries made through the Shepherd Parkway facility must be faxed to (202) 226-0571. For verification of receipt, the contractor may call (202) 226-0905. Updates to the information must be renewed April 30, August 31, and December 31 of each year and provided to the U. S. Capitol Police whenever repetitive deliveries are anticipated.

(End of clause)

AOC52.236-11

Submittals (Jun 2004)

(a) The Contractor shall deliver all required submittals within the times specified elsewhere in this contract. Unless specifically stated otherwise, four (4) sets of each item shall be delivered by the contractor to the Contracting Officer s Technical Representative. An in-depth description of these submittals can be found in the appropriate technical sections of the specification. Any Schedule of Work prepared shall reflect delivery of these items. Failure to provide timely delivery of these submittals may be considered to be grounds for termination for default.

(b) The Government will review the submittals and either approve them as submitted, or mark required changes on them. If change are required, the Contractor shall deliver revised submittals for approval by the Government which incorporate all of the required changes within two weeks after receipt by the Contractor of the marked-up submittals.

(End of clause)

AOC52.242-2

AOC52.2242-2 CONTRACTOR PERFORMANCE EVALUATIONS (DEC 2006)

At the conclusion of contract performance and/or at any point during the performance of this contract, the AOC may elect to evaluate the Contractor and submit a final or interim performance evaluation into the appropriate on-line database designated as the repository of Contractor evaluations for the Federal Government. Any evaluation submitted shall include input from the Contracting Officer's Technical Representative and other agency personnel, as appropriate, and the Contracting Officer. The Contractor shall have the opportunity to review any evaluations and submit supporting information for any differing of positions between the Contactor and the AOC in accordance with the protocol established by the specific on-line database.

(End of clause)

## Representations and Certifications

52.203-2

Certificate of Independent Price Determination (Apr 1985)

(a) The offeror certifies that--

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

(i) Those prices;

(ii) The intention to submit an offer; or

(iii) The methods or factors used to calculate the prices offered.

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

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

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

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

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

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

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

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

(End of provision)

52.204-3

Taxpayer Identification (Oct 1998)

(a) *Definitions.*

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

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

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal

Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

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

(d) *Taxpayer Identification Number (TIN).*

__TIN: _____.

__TIN has been applied for.

__TIN is not required because:

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

__Offeror is an agency or instrumentality of a foreign government;

__Offeror is an agency or instrumentality of the Federal Government.

(e) *Type of organization.*

__Sole proprietorship;

__Partnership;

__Corporate entity (not tax-exempt);

__Corporate entity (tax-exempt);

__Government entity (Federal, State, or local);

__Foreign government;

__International organization per 26 CFR 1.6049-4;

__Other _____.

(f) *Common parent.*

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

__Name and TIN of common parent:

Name _____.

TIN _____.

(End of provision)

52.209-5

Certification Regarding Debarment, Suspension, Proposed Debarment, and Other Responsibility Matters (Dec 2001)

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

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

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

(B) Have __ have not __, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against

them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

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

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

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

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

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

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

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

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

(End of provision)

AOC52.204-2

Data Universal Numbering System (Duns) Number (Jun 2004)

(a) The offeror shall enter, in the space provided below, 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 contract 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; and

(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.

(d) Enter DUNS number:_____.

(End of provision)

AOC52.204-3

Representations and Certifications (Nov 2004)

The offeror shall properly execute and submit with its offer the Representations and Certifications contained herein. Insert information in spaces provided as applicable.

(End of provision)

AOC52.215-8

Authorized Negotiators (Jun 2004)

The offeror represents that following persons are authorized to negotiate on its behalf with the Government in connection with this Request for Proposal:

Name: _____ Title: _____

Telephone: _____ E-Mail: _____

Name: _____ Title: _____

Telephone: _____ E-Mail: _____

Name: _____ Title: _____

Telephone: _____ E-Mail: _____

(End of provision)

## Solicitation Conditions

52.211-6

Brand Name or Equal (Aug 1999)

(a) If an item in this solicitation is identified as "brand name or equal," the purchase description reflects the characteristics and level of quality that will satisfy the Government's needs. The salient physical, functional, or performance characteristics that " equal" products must meet are specified in the solicitation.

(b) To be considered for award, offers of "equal" products, including "equal" products of the brand name manufacturer, must-

(1) Meet the salient physical, functional, or performance characteristic specified in this solicitation;

(2) Clearly identify the item by-

(i) Brand name, if any; and

(ii) Make or model number;

(3) Include descriptive literature such as illustrations, drawings, or a clear reference to previously furnished descriptive data or information available to the Contracting Officer; and

(4) Clearly describe any modifications the offeror plans to make in a product to make it conform to the solicitation requirements. Mark any descriptive material to clearly show the modifications.

(c) The Contracting Officer will evaluate "equal" products on the basis of information furnished by the offeror or identified in the offer and reasonably available to the Contracting Officer. The Contracting Officer is not responsible for locating or obtaining any information not identified in the offer.

(d) Unless the offeror clearly indicates in its offer that the product being offered is an "equal" product, the offeror shall provide the brand name product referenced in the solicitation.

(End of provision)

52.216-1

Type of Contract (Apr 1984)

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

(End of provision)

AOC52.215-1

Instructions to Offerors (Jul 2007)

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

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, including Presidential Inauguration Day. However, if the last day falls on a Saturday, Sunday, or legal holiday, including Presidential Inauguration Day, then the period shall include the next working day.

(b) Offerors are expected to examine the entire solicitation and all instructions. Failure to do so will be at the offeror s risk. Each

offeror shall furnish the information required by the solicitation. The offeror will be held responsible for full knowledge of all information contained therein.

(c) Packaging, transmission, and tracking of proposals. (1) Proposals, modifications, and revisions shall be enclosed, in the quantities specified elsewhere in this solicitation, in sealed envelopes. With each copy of the form entitled, "SOLICITATION, OFFER, AND AWARD", the offeror shall enclose the completed Schedule page; offer guarantee, if required; and Representations and Certifications. Address envelopes to: Architect of the Capitol, Procurement Division, Ford House Office Building, Attn: Fred Witcher, Room H2-263 Bid Room, Second and D Streets, S.W., Washington, DC 20515. Offeror shall write Bid Documents Enclosed, H2-263 Bid Room, and write the solicitation number, time and date for receipt of offers on the exterior of the package on the same side as the address. Telegraphic or facsimile proposals and modifications will not be considered.

(2) Current security requirements established by the U.S. Capitol Police to screen mail being delivered to the U.S. Capitol Complex of buildings preclude the use of U. S. Postal Service by offerors to deliver their proposals submitted in response to this solicitation. In addition, because all packages must be screened for security purposes at a central location prior to their delivery, the Architect of the Capitol cannot accept packages containing offers hand carried directly to the Bid Room address within the Ford House Office Building, or any other location in the U.S. Capitol Complex of buildings. See Notice for Delivery on the front of the solicitation.

(3) To assist in tracking of proposals, offerors are requested to fax a copy of their signed Solicitation, Offer and Award form as well as a copy of the FEDEX or UPS receipt to Fred Witcher to (866) 539-4925 at the time of the issuance of their proposal.

(4) The only acceptable method by which offerors can deliver their responses to this solicitation shall be via Federal Express (FEDEX) or United Parcel Service (UPS). Offers submitted via any other method will be rejected. OFFERORS - DO NOT MAIL YOUR OFFER BY REGULAR U.S. MAIL. See notice attached to this solicitation for special instructions.

(d) Submission, modification, revision, and withdrawal of proposals. (1) 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 the proposal or revision is due.

(2) 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 no unduly delay the acquisition, and-

(i) 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;

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

(iii) It is the only proposal received.

(3) 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.

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

(5) If an emergency or unanticipated event interrupts normal Government processes so that offers cannot be received at the Government 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.

(6) Proposals may be withdrawn by written notice received at any time before award. 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.

(End of provision)

AOC52.215-2

Interpretations and Amendments (Jun 2004)

(a) Any prospective offeror desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing no later than fourteen calendar days prior to the date established for receipt of offers. Oral explanations or instructions given

before the award of a contract will not be binding.

(b) Prospective offerors shall request the Contracting Officer, in writing, via FAX or e-mail for an interpretation or correction of any ambiguity, inconsistency, or error in the contract documents which they may discover or which should have been discovered by a reasonably prudent offeror. Such requests or objections to materials or methods of construction shown or specified shall be directed to the attention of the Contracting Officer at least fifteen (15) calendar days prior to the date specified for receipt of proposals. Written requests shall be transmitted via e-mail to fwitcher@aoc.gov or via facsimile to (866) 539-4925.

(c) Any interpretations or corrections, as well as any additional modifications the Contracting Officer may desire to include, will be in the form of amendments, in writing, which will be sent on the same date to all offerors if that information is necessary in submitting offers or if the lack of it would be prejudicial to other prospective offerors and shall become a part of any subsequent contract. The Contracting Officer reserves the right to answer only such questions as have, in his opinion, a definite bearing upon the proposals to be submitted.

(1) Offerors shall acknowledge the receipt of all amendments to the solicitation by:

(i) Signing and returning the amendment;

(ii) Identifying the amendment number and date in the space provided for this purpose on the form for submitting a offer;

(iii) Letter or telegram; or

(iv) Facsimile, if facsimile offers are authorized in the solicitation.

(2) The Government must receive the acknowledgment by the time and at the place specified for receipt of offers.

(d) Requests for oral interpretations or any other interpretations not made by amendments will not be accepted, and any information that may possibly be gained by offerors in that manner is gratuitous and not binding.

(e) If this solicitation is amended, all terms and conditions that are not amended remain unchanged.

(End of provision)

AOC52.215-3

Restriction on Disclosure and Use of Data (Jun 2004)

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

(a) 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

(b) 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.

(End of provision)

AOC52.215-7

Preparation of Proposals - Construction (Jun 2004)

(a) Offers shall be submitted, in the quantities as stated elsewhere in this solicitation, on the accompanying printed form entitled, SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair) and copies thereof, with blank spaces suitably filled in. Erasures or other changes on any or all submissions shall be initialed by the signer of the offer.

(b) Copies of the offer shall be identical and each copy shall give the full business address of the offeror, and be signed by him (see Block 20B of the form entitled, SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair ) with his usual signature. Offer by partnerships shall furnish the full names of all partners, and shall be signed with the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and designation of the person signing. Offers

by corporations shall be signed with the legal name of the corporation, followed by the name of the State of incorporation and by the signature and designation of the president, secretary, or other person authorized to bind it in the matter. The name of each person signing shall be typed or printed below the signature. An offer by a person who affixes to his signature the word president , Secretary , agent , or other designation, without disclosing his principal, may be held to be the offer of the individual signing. When requested by the Government, satisfactory evidence of the authority of the offer signing in behalf of the corporation shall be furnished.

(End of provision)

AOC52.215-9

Failure to Submit Offer (Jun 2004)

Recipients of this solicitation not responding with a proposal should not return this solicitation, unless it specifies otherwise. Instead, they should advise the issuing office by letter, postcard, or established electronic commerce methods, whether they want to receive future solicitations for similar requirements. If a recipient does not submit a proposal and does not notify the issuing office that future solicitations are desired, the recipient s name will be removed from the applicable mailing list.

(End of provision)

AOC52.228-7

AOC52.228-7 OFFER GUARANTEE - CONSTRUCTION (DEC 2006)

(a) An offer guarantee is required for all offers exceeding $100,000. For a new definitive contract (one containing no provisions for issuance of task orders) or purchase order, the amount of the offer guarantee is based upon the proposed amount of the offer. For a requirements contract, the offer guarantee is based upon the price payable for the estimated total quantity. For an indefinite-quantity contract, the offer guarantee is based upon the price payable for the specified minimum quantity. The price of any options is not included except for those options exercised at the time of the contract award.

(b) Failure to furnish an Offer Guarantee in the required form and amount, with and as a part of the proposal, will be cause for rejection of the proposal.

(c) The offeror shall furnish an Offer Guarantee of not less than 20% of the proposed price in the form of a firm commitment consisting of a Bid Bond, Certified Check, Cashier's Check, Irrevocable Letter of Credit, or Postal Money Order made payable to the Architect of the Capitol, or under Treasury Department Regulations certain bonds or notes of the Unites States. The Contracting Officer will return Offer Guarantees, other than Bid Bonds, (1) to unsuccessful offerors as soon as practicable after evaluation of the proposals; and (2) to the successful offeror upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the offer as accepted.

(End of provision)

AOC52.236-13

Visit to the Site of the Work - Construction (Jun 2004)

(a) It is strongly recommended that all prospective offerors visit the site where the work is to be performed, compare the work requirements with existing conditions, verify dimensions, if necessary, and fully inform themselves regarding the nature and scope of the proposed work and the conditions under which it will be conducted. Offerors shall also inform themselves regarding other work, if any, being done or to be done by or for the United States government, the District of Columbia government and utility companies, by contract or otherwise, where such work may affect or be affected by the operations under the contract. Failure to take these precautions will in no way relieve the successful offeror from his obligation to furnish all materials, services, labor, and any other requirements necessary to complete the work satisfactorily under the conditions established by the contract documents and without additional expense to the Government.u

(b) A pre-proposal meeting will be conducted at the 14 E Street, S.E. between New Jersey Avenue , S.E. and S. Capitol Street, S.E., Washington, D.C. for all prospective offerors on
TBD at TBD, local time.

(c) The Architect will conduct one field inspection of the work immediately following the pre-proposal meeting. Those intending to participate shall meet at the address above. Information concerning the meeting may be obtained by telephoning Mr. Alex Santos at (202) 226-6625.

(d) Offerors are encouraged to submit all questions in writing at least five (5) working days prior to the conference. Questions will be considered at any time prior to or during the conference; however, offerors will be asked to confirm verbal questions in writing. Subsequent to the conference, an amendment to the solicitation containing an abstract of the questions and answers, and a list of

attendees, will be disseminated.

(e) Offerors are cautioned that, notwithstanding any remarks or clarifications given at any site visit, the pre-proposal conference or field inspection, all terms and conditions of the solicitation remain unchanged unless they are changed by amendment to the solicitation. If the answers to conference questions, or any solicitation amendment, create ambiguities, it is the responsibility of the offeror to seek clarification prior to submitting a offer.

(End of provision)

52.217-5

Evaluation of Options (July 1990)

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

(End of provision)

52.225-10

Notice of Buy American Act Requirement--Construction Materials (May 2002)

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

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

(c) Evaluation of offers.

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

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

(d) Alternate offers.

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

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

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

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

(ii) May be accepted if revised during negotiations.

(End of provision)

AOC52.215-4

Contract Award (Jun 2004)

(a) The Government will evaluate offers in response to this solicitation without discussions and will award a contract to the responsible offeror whose offer, conforming to the solicitation, will be most advantageous to the Government considering only price and the price-related factors specified elsewhere in the solicitation. Therefore, the offeror s initial proposal should contain the offeror s best terms from a price standpoint. The Government reserves the right to conduct discussions.

(b) The Government may

(1) Reject any or all offers;

(2) Accept other than the lowest offer; and

(3) Waive informalities or minor irregularities in offers received.

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

(d) A written award or acceptance of offer mailed or otherwise furnished to the successful offeror within the time for acceptance specified in the offer shall result in a binding contract without further action by either party. Before the offer's specified expiration time, the Government may accept an offer (or part of an offer as provided in Paragraph (c) of this clause), whether or not there are negotiations after its receipt, unless a written notice of withdrawal is received before award. Negotiations conducted after receipt of an offer do not constitute a rejection or counteroffer by the Government.

(e) Neither financial data submitted with an offer, nor representations concerning facilities or financing, will form a part of the resulting contract. However, if the resulting contract contains a clause providing for price reduction for defective cost or pricing data, the contract price will be subject to reduction if cost or pricing data furnished is incomplete, inaccurate, or not current.

(f) The Government may determine that an offer is unacceptable if the prices proposed are materially unbalanced between line items or sub line 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.

(End of provision)

# VOLUME I I

# TECHNICAL

## PART 1 - GENERAL

### 1.1 DRAWING TITLES:

(a) The drawings entitled "E85 Fuel Pumping Station Installation" prepared by Hayes, Seay, Mattern & Mattern, dated July 2007, as listed below from a part of the Contract Documents.
(b) The Contractor shall not scale the drawings but shall verify drawing dimensions and take additionally required dimensions at the site.
(c) The Contractor will be furnished, free of charge, not more than six (6) sets of the contract drawings.

## PART 2 - DRAWINGS LIST

### 2.1 GENERAL

| Number | Title |
|---|---|
| C100 | Existing Conditions |
| C101 | Site Layout Plan |
| C102 | Enlarged Site Plan |

## DIVISION 1 - GENERAL REQUIREMENTS

## PART 1 - GENERAL

### 1.1 DESCRIPTION OF REQUIREMENTS:

A. **General Requirements**: The provisions or requirements of Division-1 apply to entire work of Contract and, where so indicated, to other elements which are included in project, and include, but are not limited to the following:

1. Summary of the Work.
2. Project Coordination.
3. Definitions and Standards.
4. Schedules and Reports.
5. Submittals.
6. Temporary Facilities and Controls.
7. Products.
8. Project Closeout.

B. **Performance Based RFP:** The project is a performance based project for the design and installation of a an E85 Fuel Pumping Station at 14 E Street, SE, Washington, D.C., as described in this Performance Based Request for Proposal (RFP). The requirements outlined within this document are applicable to the successful contractor and address both design and construction requirements.

C. **Additional General Requirements References:** The following sections are included by reference:

Section 01330 – Design Submittal Requirements: Refer to Section 01330 for submission requirements for the Design Portion of the work as required by the RFP.

Section 01450 – Design and Construction Quality Control: Refer to Section 01450 for further definition of required QC programs required during both design and construction phases of the project.

Section 01546 – Safety and Health: Refer to Section 01546 for some of the precautions necessary to protect the safety and health of employees, visitors, occupants and contract employees, and to prevent the loss of or damage to property and the environment.

### 1.2 SUMMARY OF THE WORK:

A. **Project/Work Identification**:

1. **General**: Project name is "E85 Fuel Pumping Station Installation", 14 E Street, SE, Washington, D.C., as shown on Performance Based Request for Proposal (RFP) prepared by the Architect of the Capitol (AOC). RFP is dated July 16, 2007.

2. **Summary by Reference**: Work of the Contract can be summarized by references to Part 1 of this RFP document that includes Proposal Forms and Documents, Specification Sections, Drawings, Amendments and Modifications to the contract documents issued subsequent to the initial printing of this Performance Based RFP and including, but not necessarily limited to, printed material referenced by any of these.

3. **Abbreviated Written Summary**: Briefly and without force and effect upon the contract documents, the work of the Contract can be summarized as follows:

   The Architect of the Capitol (AOC) seeks to install an E85 pumping station fed by a 10,000 gallon double-walled fiberglass underground storage tank at their existing fueling station at 14 E Street, SE in Washington, DC. The project will include installation of a new underground storage tank, new pumping islands, connection to existing monitoring and accounting systems, site lighting, pavement and curb cuts, and required containment systems.

4. **Phasing Plan**: No Phasing Plan is included in the Contract Documents. The Contractor is expected to complete all work sequentially to provide the minimum disruption of parking and normal operations in the area. The Contractor will provide his own plan for approval by the Architect showing proposed sequencing of the work and coordination with Government parking requirements and government access.

B. **Options:** This work shall include the following Options as defined in the SCHEDULE:

1. **Option No. 1:** Modify Gasoline Pumping Configuration. Refer to Part 3, Section G3060 for additional information.

2. **Option No. 2:** Photovoltaic-Powered Lighting. Refer to Part 3, Section G4090 for additional information.

C. **Contractor Use of Premises**:

1. **General**: The Contractor shall limit his use of the premises to the work indicated, so as to allow for the Government's occupancy and use.

2. **Contractor Use of the Existing Building**: During the construction period the site and the building will be occupied by Members of Congress, other Government employees and the general public. Maintain the existing building in a safe and weather-tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period. Cooperate fully with the Architect or his representative during construction operations to minimize conflicts and to facilitate Government usage.

   a. **Clear Passage**: Keep public areas such as sidewalks, drives, etc. free from accumulation of waste material, rubbish or construction debris.
   b. **Smoking or open fires** will not be permitted on the premises.
   c. **Standard Working Hours:** The standard working hours of operation for the Maintenance Division Garage are as follows. Work may be performed during these hours; any off-hours work shall be coordinated with the Architect and the Capitol Grounds Superintendent:

      1. Monday through Friday: 7 am to 6 pm
      2. Saturday, Sunday: Closed

3. **Limitations on Use of the Site**: Portions of the site beyond areas on which work is indicated are not to be disturbed. In addition to these limitations and requirements, administer allocation of available space among entities needing both access and space

so as to produce the best overall efficiency in performance of the total work of the project. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on site.

a. **Unless designated** for sole Contractor use, keep existing driveways and entrances serving the premises clear and available to the Government and its employees at all times. Do not permit trucks of any kind to use existing sidewalks without prior authorization of the Architect.
b. **Maintain driveways** between and around combustible material storage piles at least 15' wide and free of accumulation of rubbish, equipment and materials. Maintain access for fire fighting equipment.
c. **Do not unreasonably** encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated. If additional storage is necessary, obtain and pay for such storage off-site.
d. **Provide 24hr/7day** access to the building by emergency vehicles and firefighting equipment.

4. **Construction Parking Control**: Parking space for personal vehicles is not available on the site. Obtain approval of Architect for parking of construction motor vehicles or other equipment on the site.

D. **Protection of Government Property:** The Contractor is expected to take all reasonable precautions to protect U.S. Government Property. In the event of damage to or theft of Government Property, the Contractor will be held fully responsible for his own personnel, his subcontractor's personnel and their actions.

E. **Blasting**: The use of any kind or type of explosive in the performance of the work is prohibited, except the use of construction tools actuated by or employing powder-actuated charges which shall be permitted, provided that the tool is of the kind and design ordinarily used for such construction and that the Architect has authorized its use after determining that its use will not endanger human life or safety.

F. **Mechanical/Electrical Requirements of General Work**: Except as otherwise indicated, comply with applicable provisions of The National Electrical Code (NEC) and standards by National Electrical Manufacturer's Association (NEMA) for electrical components of general work. Where applicable, provide products listed and labeled by nationally recognized independent testing and labeling organizations.

1.3 **PROJECT COORDINATION**:

A. **Coordination and Meetings**: Prepare a written memorandum on required coordination activities. Include such items as required notices, reports and attendance at meetings. Distribute this memorandum to each entity performing work at the project site. Prepare similar memorandum for separate contractors where interfacing of their work is required.

1. **Continuously coordinate** the work of subcontractors to ensure proper processing and progress of the work. Require each subcontractor to examine work of other trades and all sections of specifications to assure satisfactory installation of, and connection between, his work and work of other trades.

a. **Provide other parties**, to the extent their work is affected by this work, all information necessary for the proper execution of their work. Arrange and

conduct work so that other parties may complete their work at the site according to schedule. All work under this contract shall be carefully coordinated with work under other such contracts.

2. **The Contractor** shall maintain a complete set of Contract Documents on the site during the execution of this contract. All Drawings and Specifications shall be posted with the latest information and Changes.

B. **Surveys and Records/Reports**: Working from lines and levels established by the property survey, establish and maintain bench marks and other dependable markers. Establish bench marks and markers to set lines and levels for work at each story of construction and elsewhere as needed to properly locate each element of the project. Calculate and measure required dimensions as shown within recognized tolerances. Drawings shall not be scaled to determine dimensions. Advise entities performing work of marked lines and levels provided for their use. Advise Architect promptly upon detection of deviations that exceed indicated tolerances.

C. **General Installation Provisions**:

1. **Pre-Installation Meetings**: Hold a pre-installation meeting at the project site well before installation of each unit of work which requires coordination with other work. Installer and representatives of the manufacturers and fabricators who are involved in or affected by that unit of work, and with its coordination or integration with other work that has preceded or will follow, shall attend this meeting. Advise Architect of scheduled meeting dates.

2. **Installer's Inspection of Conditions**: Require the Installer of each major unit of work to inspect the substrate to receive work and conditions under which the work is to be performed. The Installer shall report all unsatisfactory conditions in writing to the Contractor. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

3. **Manufacturer's Instructions**: Where installations include manufactured products, comply with the manufacturer's applicable instructions and recommendations for installation, to the extent that these instructions and recommendations are more explicit or more stringent than requirements indicated in the Contract Documents.

4. **Mounting Heights**: Where mounting heights are not indicated, mount individual units of work at industry recognized standard mounting heights for the particular application indicated. Refer questionable mounting height choices to the Architect for final decision.

   a. **Mount units of work** required to be accessible to handicapped people at heights prescribed by the Uniform Federal Accessibility Standards as referenced by the Americans with Disabilities Act (ADA) (Fed. Reg./Vol. 56, No. 144/Part 36).

D. **Cleaning and Protection**: During handling and installation of work at the project site, clean and protect work in progress and adjoining work on the basis of continuous maintenance. Apply protective covering on installed work where it is required to ensure freedom from damage or deterioration at time of completion.

1. **Clean and perform maintenance** on installed work as frequently as necessary through remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

2. **Limiting Exposures of Work**: To the extent possible through reasonable control and protection methods, supervise performance of the work in such a manner and by such means which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, damaging or otherwise deleterious exposure during the construction period.

   a. **Protect against possible damage** all permanent openings used as passageways or through which materials are handled. Protect exposed corners, spandrels, projecting features and similar permanent work subject to damage. Cover and protect all prefinished work from damage by construction materials and operations. Use wheelbarrows equipped with rubber tires over permanently exposed paving.

3. **Load all trucks** leaving the site with earthen materials or loose debris in a manner that will prevent dropping of materials on streets. Fasten suitable tarpaulins over the load before they enter surrounding paved streets. Trucks bringing earthen materials over paved streets to the site shall be similarly covered.

4. **Clean sidewalks and streets** adjacent to site daily or more often as necessary, of debris spillage or mud/dirt tracked from loading and trucking involved in construction operations. Maintain suitable truck wheel washing installation and crew to prevent any mud from being carried onto adjacent paved streets. Conform to local regulations regarding load limits.

E. **Cutting and Patching**: Where the Contractor must cut, patch, alter, add to, repair or refinish existing construction and finishes which are not to be removed, he shall leave such construction and finishes complete and in satisfactory condition. Cutting, patching, and the like shall be neatly and carefully performed, and new materials and methods shall match existing corresponding work unless otherwise indicated. Exposed patches and repairs shall be as inconspicuous as possible.

   1. **Construction, finishes,** equipment and other items which are damaged or defaced by reason of work performed under this contract shall be restored to the satisfaction of the Architect.

F. **Conservation and Salvage**: It is a requirement for supervision and administration of the work that construction operations be carried out with the maximum possible consideration given to the conservation of energy, water and materials. In addition, maximum consideration shall be given to salvaging materials and equipment involved in performance of the work but not incorporated therein. Refer to other sections for required disposition of salvage materials which are the Government's property.

   1. **Architect Notification**: To allow time for the Architect to observe the construction, provide a minimum of 48 hours notice of excavation work, completion of steel reinforcing, pouring of concrete, paving operations, utility work, trenching, tree removal or replacement, commencements of next phase of work, and other tasks to be identified by the Architect.

2. **Archaeological Rights**: There is a possibility that items of archaeological significance may be found during the excavation of the site. In such event, the Contractor shall stop excavation in the vicinity of the find and notify the Architect immediately; subsequent excavation work shall proceed as directed by the Architect. All items found which are considered to have archaeological significance are the property of the Government.

## 1.4 DEFINITIONS AND STANDARDS:

A. **General**: Comply with governing regulations and the codes and standards imposed upon the work. These requirements include the obtaining of permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes and standards.

B. **Definitions:** A substantial amount of specification language consists of definitions for terms found in other contract documents, including the drawings. (Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon). Certain terms used in contract documents are defined in this article. Definitions and explanations contained in this section are not necessarily either complete or exclusive, but are general for the work to the extent that they are not stated more explicitly in another element of the contract documents.

1. **Installer**: The term "installer" is defined as the entity (person or firm) engaged by the Contractor, its subcontractor or sub-subcontractor for performance of a particular unit of work at the project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (installers) be expert in the operations they are engaged to perform.

2. **Testing Laboratory**: The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the work, either at the project site or elsewhere, and to report, and (if required) interpret results of those inspections or tests.

3. **Indicated**: The term "indicated" is a cross-reference to graphic representations, notes or schedules on drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in contract documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used in lieu of "indicated," it is for the purpose of helping the reader locate cross-reference, and no limitation is intended except as specifically noted.

4. **Furnish**: Except as otherwise defined in greater detail, the term "furnish" is used to mean supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

5. **Install**: Except as otherwise defined in greater detail, the term "install" is used to describe operations at the project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.

6. **Provide**: Except as otherwise defined in greater detail, the term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

7. **Exposed**: The term "exposed" is defined as an item or surface, exterior or interior, which can be seen by a person outside the building or a person inside a usable space within the building during normal activity.

8. **Concealed**: The term "concealed" is defined as an item or space not normally seen, occupied or used by building occupants or staff.

9. **Finished Space**: The term "finished space" is defined as space normally used by the public, building occupants or staff for primary functions of the building, but does not include mechanical, electrical and elevator equipment rooms, hoistways, tunnels or mechanical penthouses, unless otherwise indicated.

10. **Specialist**: The term "specialist" is defined as an individual or firm of established reputation (or, if newly organized, whose personnel have previously established a reputation in the same field), which is regularly engaged in, and which maintains a regular force of workers skilled in either (as applicable) manufacturing or fabricating items required by the contract, installing items required by the contract, or otherwise performing work required by the contract. Where the contract specification requires installation by a specialist, that term shall also be deemed to mean either the manufacturer of the item, an individual or firm licensed by the manufacturer, or an individual or firm who will perform the work under the manufacturer's direct supervision.

C. **Format and Specification Content Explanations**: Bolding and underscoring: Are used strictly to assist reader of specification text in scanning text for key words (for quick recall). No emphasis on or relative importance is intended where bolding and underscoring are used. Imperative language is used generally in specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by the Contractor. For clarity of reading at certain locations, contrasting subjective language is used to describe responsibilities which must be fulfilled indirectly by Contractor, or when so noted, by others.

1. **Abbreviations**: The language of specifications and other contract documents is of the abbreviated type in certain instances, and implies words and meanings which will be appropriately interpreted. Actual word abbreviations of a self-explanatory nature have been included in texts. Specific abbreviations have been established, principally for lengthy technical terminology and primarily in conjunction with coordination of specification requirements with titles of general standards which are frequently abbreviated. Singular words will be interpreted as plural and plural words will be interpreted as singular where applicable and where full context of the contract documents so indicates.

2. **Minimum Quality/Quantity**: In every instance, the quality level or quantity shown or specified is intended as minimum for the work to be performed or provided. Except as otherwise specifically indicated, actual work may either comply exactly with that minimum (within specified tolerances), or may surpass the quality of that minimum within reasonable limits. In complying with requirements, indicated numeric values are either minimum or maximums as noted or as appropriate for context of requirements. Refer instances of uncertainty to the Architect for decision before proceeding.

D. **Drawing Symbols**: Except as otherwise indicated, graphic symbols used on drawings are to be those symbols recognized in the construction industry for purposes indicated. Where not

otherwise noted, symbols are defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., Ninth edition.

1. **Mechanical/Electrical Drawings**: Graphic symbols used on mechanical and electrical drawings are generally aligned with symbols recommended by ASHRAE. Where appropriate, these symbols are supplemented by more specific symbols as recommended by other recognized technical associations including ASME, ASPE, IEEE and similar organizations. Refer instances of uncertainty to the Architect for clarification before proceeding.

E. **Industry Standards**: Except to the extent that more explicit or more stringent requirements are written directly into contract documents, applicable standards of the construction industry have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies were bound herein, subject to the order of precedence previously stated.

1. **Publication Dates**: Except as otherwise indicated, where compliance with an industry standard is required, conform to the standard in effect on the date of the Invitation for Bids, or, if referred to in any Amendments, at the date of such Amendments.

2. **Abbreviations and Names**: The following acronyms or abbreviations as referenced in contract documents are defined to mean the associated names. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of the date of contract documents:

| | | |
|---|---|---|
| AIA | American Institute of Architects (The)<br>www.aia.org | (800) 242-3837<br>(202) ( |
| AISC | American Institute of Steel Construction<br>www.aisc.org | (800) 644-2400<br>(312) 670-2400 |
| ANSI | American National Standards Institute<br>www.ansi.org | (202) 293-8020 |
| ASHRAE | American Society of Heating, Refrigerating and Air-Conditioning Engineers<br>www.ashrae.org | (800) 527-4723<br>(404) 636-8400 |
| ASTM | ASTM International<br>(American Society for Testing and Materials International)<br>www.astm.org | (610) 832-9585 |
| AWI | Architectural Woodwork Institute<br>www.awinet.org | (800) 449-8811<br>(703) 733-0600 |
| AWS | American Welding Society<br>www.aws.org | (800) 443-9353<br>(305) 443-9353 |
| CDA | Copper Development Association Inc.<br>www.copper.org | (800) 232-3282<br>(212) 251-7200 |

| | | |
|---|---|---|
| FMG | FM Global<br>(Formerly: FM - Factory Mutual System)<br>www.fmglobal.com | (401) 275-3000 |
| IEEE | Institute of Electrical and Electronics Engineers<br>www.ieee.org | (212) 419-7900 |
| NAAMM | National Association of Architectural Metal Mfrs<br>www.naamm.org | (312) 332-0405 |
| NECA | National Electrical Contractors Association<br>www.necanet.org | (301) 657-3110 |
| NEMA | National Electrical Manufacturers Association<br>www.nema.org | (703) 841-3200 |
| NFPA | National Fire Protection Association<br>www.nfpa.org | (800) 344-3555<br>(617) 770-3000 |
| NRCA | National Roofing Contractors Association<br>www.nrca.net | (800) 323-9545<br>(847) 299-9070 |
| SMACNA | Sheet Metal and Air Conditioning Contractors' National Association<br>www.smacna.org | (703) 803-2980 |
| SSPC | SSPC: The Society for Protective Coatings<br>www.sspc.org | (877) 281-7772<br>(412) 281-2331 |
| UL | Underwriters Laboratories Inc.<br>www.ul.com | (800) 704-4050<br>(847) 272-8800 |
| WWPA | Western Wood Products Association<br>www.wwpa.org | (503) 224-3930 |

F. **Federal Government Agencies**: Names and titles of federal government Standard- or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of Standard- or Specification-producing agencies of the federal government. Names and addresses are subject to change but are believed to be, but are not assured to be, accurate and up to date as of the date of the Contract Documents.

| | | |
|---|---|---|
| CFR | Code of Federal Regulations<br>Available from Government Printing Office<br>www.access.gpo.gov/nara/cfr | (888) 293-6498<br>(202) 512-1530 |
| EPA | Environmental Protection Agency | (800) 438-2474 |

| | | |
|---|---|---|
| | www.epa.gov | |
| FS | Federal Specification<br>Available from Defense Automated Printing Service<br>www.astimage.daps.dla.mil/online | (215) 697-6257 |
| | Available from General Services Administration<br>www.fss.gsa.gov/pub/fed-specs.cfm | (202) 619-8925 |
| | Available from National Institute of Building Sciences<br>www.nibs.org | (202) 289-7800 |
| OSHA | Occupational Safety and Health Administration<br>www.osha.gov | (800) 321-OSHA (6742) |

G. **District of Columbia Government Agencies**: Names and titles of local government Standard- or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of Standard- or Specification-producing agencies of the DC government. Names and addresses are subject to change but are believed to be, but are not assured to be, accurate and up to date as of the date of the Contract Documents.

| | | |
|---|---|---|
| DC-EHA | Environmental Health Administration<br>Department of Health<br>Government of the District of Columbia<br>51 N Street. N.E, Room 5030-B<br>Washington, DC 20002<br>dchealth.dc.gov | (202) 535-2500 |
| DDOT | District Department of Transportation<br>2000 14th Street, NW, 6th Floor<br>Washington, DC 20009<br>ddot.dc.gov | (202) 673-6813 |
| WASA | District of Columbia Water and Sewer Authority<br>5000 Overlook Avenue, S. W.<br>Washington, DC 20032<br>www.dcwasa.com | (202) 787-2427 |
| DC FIRE MARSHAL | DC Fire Marshal's Office<br>441 4th Street NW, Suite 370<br>Washington, DC 20001 | (202) 727-3659 |

## 1.5 SCHEDULES & REPORTS:

A. **Coordination**: Coordinate both the listing and timing of reports and other activities required by provisions of this and other sections, so as to provide consistency and logical coordination between the reports. Maintain coordination and correlation between separate reports by updating at monthly or shorter time intervals. Make appropriate distribution of each report and updated report to all parties involved in the work including the Architect.

B. **Material Schedule**: Prior to commencing work, submit for approval the names of manufacturers and the trade names or numbers of all materials proposed for use on the project. Do not use any material until approved by the Architect. Upon request, furnish samples of materials, without cost to the Government, for examination and testing.

1. **Submit 3 copies** of the product-listing schedule prior to commencement of the Work. Provide a written explanation for omissions of data, and for known variations from contract requirements.

2. **Refer to Part 3 and Part 4** of this document for additional requirements and required UL listings.

C. **Schedule of Values:** Within thirty (30) calendar days of the date of contract award, a Schedule of Values shall be submitted. This schedule is defined as a work item by work item breakdown of cost of each definitive work activity including Contractor's markup. The Schedule of Values shall directly correlate with the Phases of Work indicated on the approved Progress Schedule specified below.

1. The Grand Total of all of the Schedules shall equal Contractor's original bid.
2. The proper updating of both the Schedule of Values and the Record Drawings shall be considered precedent to approval of Partial Payments.

D. **Shop Drawing Submittal Schedule:** A Shop Drawing Submittal Schedule shall be submitted with each design submittal. The schedule shall indicate at a minimum, all shop drawing submittals to be made, their contents, each specification section the submittal is drawn from, the date on which it will be submitted, the expected return dates, and the subcontractor responsible for creating the submittal. The submittal will be reviewed by the Architect as the first shop drawing submittal and comments made must be acknowledged and employed in the resubmission prior to the submittal of any other shop drawing. Do not "Load" the schedule.

E. **Fully-Developed Progress Schedule**: Total contract performance period shall be 196 days from date of contract award. Provide preliminary bar-chart schedule with proposal showing major design and construction activity durations. Expedited schedules will be viewed favorably by the government. Within 14 days of the date of contract award, the Contractor shall prepare and submit for approval a comprehensive bar-chart type progress schedule indicating, by stage-coded symbols, a time bar for each major category or unit of work, both design and construction, to be performed for the project; include minor elements of work which are, nevertheless, involved in overall sequencing of the work. Arrange the schedule to show how final acceptance is scheduled to allow for the Architect's procedure for certification of final acceptance. Prepare the schedule on sheets of stable transparency, or other reproducible material, to permit reproduction for the required distribution.

1. **Schedule Updating**: Following its initial approval, the project schedule shall be updated bi-weekly for the purpose of recording and monitoring progress of the Work and establishing the values of progress payments. If the Work falls behind schedule, revise schedule and describe action to be taken to insure that work will be completed within the Contract time. Any adjustment to the Contract Time shall be made in accordance with the GENERAL CONDITIONS. For each schedule update, prepare a narrative report which shall include a description of all activities completed during the preceding month, description of progress made and planned activities listed as started

but not completed on the updated Progress Schedule, and a written description and justification of any proposed revision to the logic sequence.

3. **Distribution**: Following the initial submittal to and response by the Architect, print and distribute progress schedules to the Architect (3 copies), separate contractors, the principal subcontractors and suppliers or fabricators, and others with a need-to-know schedule-compliance requirement. When revisions are made, distribute updated issues to the appropriate entities.

F. **Progress Meetings and Documentation**: In addition to specific coordination and pre-installation meetings for each element of work, and other regular project meetings held for other purposes, hold a general progress meeting each month with time coordinated with preparation of the partial payment request. Require each entity then involved in planning, coordination or performance of work to be properly represented at each meeting. Discuss status of each element of current work in relation to Progress Schedule. Determine how behind-schedule work will be expedited, and secure commitments from entities involved in doing so to ensure that work will be completed within Contract Time.

1. **Initial Progress Meeting**: Schedule initial progress meeting, recognized as "Pre-Construction Meeting", for a date not more than 7 days after date of commencement of the Work. Use it as an organizational meeting, and review responsibilities and personnel assignments.

2. **Daily Reports**: Prepare a daily report, recording information concerning events at the site; and submit duplicate copies to Architect on at least weekly intervals.

G. **Permits, Licenses, and Certificates**: For the Government's records, submit copies of utility permits, licenses, certifications, utility inspection reports, releases, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

## 1.6 CONSTRUCTION PHASE SUBMITTALS:

A. **General**: Shop drawings, product data, samples and other work-related submittals are required to amplify, expand and coordinate the information contained in the Contract Documents. The Contractor is responsible for all dimensions, for the design of adequate or proper components, connections and other items, for the inclusion in the work of all elements and incidental details, and for the satisfactory fabrication, construction, operation and coordination of the work.

1. **Approval** of any submission shall not be construed as a complete or precise check of the item submitted but will only indicate that the general methods of design, detailing, construction or other elements under consideration appear to be satisfactory, without specific determinations or particulars.

2. **Changes to the Contract** will not be made by notations on submittals. In the event submittals returned by the Architect with notations, which in the opinion of the Contractor, constitute additional work for which he is entitled to an adjustment in the contract sum or the contract time, the Contractor shall comply with the procedure set forth in Article, "Changes," of the GENERAL CONDITIONS.

3. **Do not permit** submittal copies without an appropriate final "Action" marking by the Architect to be used in connection with the work.

4. **Submissions of "Approved Equals:"** In addition to standard submittal requirements, for each item submitted as an "approved equal" submit the following:

   a. **Comparison of** proposed approved equal's characteristics with the salient characteristics of the specified product demonstrating that the proposed approved equal fully meets or exceeds the specifications,
   b. **Drawings and** samples as required for specified products,
   c. **Any changes** required in other elements (if any) because of the submission of the proposed approved equal, and
   d. **A listing of** sources of supply, maintenance service (if applicable), and replacement parts.

B. **Submittal Procedures**: Make all submittals to the Architect or to an individual designated by the Architect.

1. **Only the Architect** or an individual designated by the Architect can approve or disapprove submittals. Deviations and variations from the contract requirements contained in the submittal can be approved only by the Architect or by an individual delegated such authority by the Architect.

2. **Costs** associated with transmittal of submittals shall be borne by the Contractor.

3. **Review Time**: Except as specified elsewhere, allow for a review period of thirty (30) calendar days after receipt of the submittals by the Architect. Advise the Architect on each submittal, as to whether processing time is critical to the progress of the work, and if work would be expedited if processing time could be shortened. No extension of time will be authorized because of the Contractor's failure to transmit submittals or re-submittals to the Architect sufficiently in advance of the work. For submittals of items requiring coordination between different trades or subcontractors, review time period starts from the time that all required submittals have been received by the Architect and ends when submittal leaves the Architect. The Contractor is required to coordinate all work involving associated sub-trades and produce coordinated drawings for submittal where required by individual specification sections or as required below.

4. **Preparation of Submittals**: Provide permanent marking on each submittal to identify project, date, Contractor, subcontractor, supplier, manufacturer, submittal name and similar information to distinguish it from other submittals. Label as to number and title of specification section, drawing number and detail references, as appropriate. Show Contractor's executed review and approval marking and provide space of not less than 20 sq. in. for the Architect's "Action" marking. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than through the Contractor's office will be returned without action.
5. **Number of Copies**: Submit a minimum of four (4) copies of each submittal requested.

C. **Specific Submittal Requirements**: Specific submittal requirements for individual units of work are specified in the applicable specification section. Except as otherwise indicated in the individual specification sections, comply with the requirements specified herein for each type of transmittal.

1. **Product Data**: Collect required product data into a single submittal for each unit of work or system. Mark each copy to show which choices and options are applicable to the project. Where product data has been printed to include information on several similar products, some of which are not required for use on the project, or are not included in this submittal, mark the copies to show clearly that such information is not applicable.

   a. **Submittals**: Submittal is for information and record, unless otherwise indicated. Initial submittal is final submittal unless returned by the Architect, marked with an action which indicates an observed non-compliance.

      1) **Initial Submittal**: Except as otherwise indicated, submit four (4) copies of each required product data submittal, plus two (2) additional copies where required for maintenance manuals. The Architect will retain two (2) copies and return the other marked with "Action" and corrections or modifications as required.

2. **Shop Drawings**: Provide special notation of dimensions that have been established by field measurement. Highlight, encircle or otherwise indicate deviations from the Contract Documents on the shop drawings.

   a. **Preparation**: Submit newly prepared information, drawn to accurate scale on sheets not less than 8-1/2" x 11"; except for actual pattern or template type drawings, the maximum sheet size shall not exceed 36" x 48". Indicate the name of the firm that prepared each shop drawing and provide appropriate project identification in the title block.

      1) Do not reproduce contract documents or copy standard printed information as the basis of shop drawings.
      2) Use standard architectural scales for all drawings.

   b. **Coordination Drawings**: Prior to installation of sleeves and inserts for equipment, and/or the performance of work in spaces in which two or more trades are involved and in which the probability of interference exists as determined by either the Contractor or the Architect, submit composite coordination drawings for the Work. Show sequencing and relationship of separate units of work which must interface in a restricted manner to fit in the space provided, or function as indicated. In case interference develops, the Architect will decide which work shall be relocated, regardless of which was installed first. Coordination drawings are considered shop drawings and must be definitive in nature.

   c. **Equipment and Systems**: Shop Drawings for equipment and systems shall show ratings (where applicable), and how components are assembled, function together, and how they will be installed. Shop drawings, product data, certificate of conformance or compliance, certified test or inspection reports, and other submittals for equipment, systems, and their component parts shall be coordinated and submitted as a unit. Multiple or piecemeal submissions are not acceptable except where prior approval is obtained from the Architect, in which case a list of data to be submitted later shall be included with the first submission.

d. **Initial Submittal**: One correctable 1-1/2 mil translucent polyester reproducible print and one blue-line or black-line; reproducible will be returned.

e. **Final Submittal**: 3 prints, plus 2 additional prints where required for maintenance manuals; 2 will be retained and remainder will be returned, one of which is to be marked-up and maintained by Contractor as "Record Document."

3. **Miscellaneous Submittals**:

a. **Inspection and Test Reports**: Classify each inspection and test report as being either "shop drawings" or "product data" depending on whether the report is specially prepared for the project, or a standard publication of workmanship control testing at the point of production. Process inspection and test reports accordingly.

b. **Warranties**: Refer to Article "Products" for specific general requirements on warranties, product bonds, workmanship bonds and maintenance agreements. In addition to copies desired for the Contractor's use, furnish 2 executed copies of such warranties, bonds or agreements. Provide 2 additional copies where required for maintenance manuals.

c. **Staging Plan**: Submit a Staging Plan indicating specific locations of the superintendent's trailer, storage and loading of materials, traffic direction and control concept and signage, security perimeter for staging area, locations of informational construction signage, locations of temporary toilets and other temporary construction, emergency facilities and resources and any other construction facilities required.

d. **Traffic Control**: Submit a site plan and details for review and approval by the Architect to diagrammatically indicate proposed measures for safely and efficiently controlling and re-routing traffic as necessary to enable construction work, deliveries, paving, testing operations and other activities. Indicate schedules of activities occurring hourly before, during and after the normal workday. At all times provide minimal disruption to the day-to-day activities occurring on the site and at adjacent locations.

e. **Safety Plan:** Provide a Safety Plan meeting OSHA and AOC safety Guidelines for work in hazardous environments (Areas where high voltage and large moving equipment are found). Plan shall define number of individuals on the job site(s), their training, typical safety equipment to be used, and procedures for addressing typical hazardous conditions.

4. **Closeout Submittals**: Refer to Article "Project Closeout" and to individual sections of these specifications for specific submittal requirements of project closeout information, materials, tools, and similar items.

D. **Architect's Action**: Except for submittals for the record and similar purposes, where action and return on submittals is required or requested, the Architect will review each submittal and mark with appropriate "Action." Where the submittal must be held for coordination, the Architect will so advise the Contractor without delay.

1. **If no changes** to the drawing are required, three (3) prints and the reproducible drawing will be returned to the Contractor, bearing the stamp of the Architect, stating - "APPROVED."
2. **If changes** to the drawing are required, but are of such minor nature that fabrication and/or construction can proceed in accordance with the correction noted by the Architect without resubmission of the drawing three (3) prints and the reproducible drawing will be returned to the Contractor bearing the Stamp of the Architect stating "Approved as Noted." The Contractor shall proceed with fabrication and/or construction in accordance with the Architect's corrections, and resubmit corrected copy for the Architect's records.
3. **If changes** to the drawing are required, but are of such nature that fabrication or construction cannot proceed, three (3) prints and the reproducible drawing will be returned to the Contractor, bearing the stamp of the Architect stating - "Revise and Resubmit." In such a case, the Contractor shall resubmit the drawings, properly corrected. Upon resubmission of shop drawings, if any corrections or changes are made other than those marked by the Architect, the Contractor shall clearly indicate any such corrections or changes made on his own initiative.
4. **If the product does not meet** the specification requirements, the number of copies outlined above will be returned to the Contractor, bearing the stamp of the Architect stating - "REJECTED." In such a case, the Contractor shall submit a new product which complies with the technical specifications.
5. **Other Action**: Where the submittal is returned, marked with the Architect's explanation, for special processing or other Contractor activity, or is primarily for information or record purposes, the submittal will be marked as follows:

    a. **Not Subject to Review**: This review category will apply to submittals which are not required by the Contract Documents and are inadvertently submitted and stamped; or
    b. **Received/No Action Required**: This category will be used when returning "Informational Submittals" for which the Architect is not required to take action.

## 1.7 TEMPORARY FACILITIES AND CONTROLS:

A. **Description of Requirements**: This article specifies administrative and procedural requirements for temporary services and facilities, including such items as temporary utility services, temporary construction and support facilities, and project security and protection.

1. **Use Charges**: No cost or usage charges for temporary services or facilities are chargeable to the Government. Cost or use charges for temporary services or facilities will not be accepted as a basis of claims for a change-order extra. All materials and equipment provided by the Contractor for temporary facilities shall remain the property of the Contractor.

2. **Materials and Execution**: Provide new materials and equipment for temporary services and facilities; used materials and equipment that are undamaged and in serviceable condition may be used, if acceptable to the Architect. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards. Do not use materials of temporary service in permanent installation.

B. **Quality Assurance**: Comply with the requirements of the District of Columbia Building Code and regulations governing construction and local industry standards, in the installation and maintenance of temporary services and facilities.

1. **Standards**: Comply with the requirements of NFPA Code 241, "Building Construction and Demolition Operations", the ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and the NECA National Joint Guideline NJC-6 "Temporary Job Utilities and Services".

   a. **Refer** to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", as prepared jointly by Associated General Contractors of America (AGC) and American Specialty Contractors, Inc. (ASC) for industry recommendations.
   b. **Trade Jurisdictions**: The assigned responsibilities for the installation and operation of temporary utilities are not intended to interfere with the normal application of trade regulations and union jurisdictions applicable to the work.

2. **Inspections**: Inspect and test each service before placing temporary utilities in use. Arrange for required inspections and tests by governing authorities, and obtain required certifications and permits for use.

C. **Job Conditions**: Provide each temporary service and facility ready for use at each location when the service or facility is first needed to avoid delay in performance of the Work. Maintain, expand as required and modify temporary services and facilities as needed throughout the progress of the Work. Do not remove until services or facilities are no longer needed, or are replaced by the authorized use of completed permanent facilities.

D. **Temporary Utilities**: Arrange with the Architect for an acceptable time when service can be interrupted, where necessary to make connections for temporary services.

1. **Temporary Electric Power Service**: Electrical energy will be supplied by the Government, but the Contractor shall install and maintain all necessary conduit, wiring, and devices needed to execute the work. Install all wiring in flexible conduit or armored cable with minimum No. 12 gage wire. Portable cords for small power tools shall be properly grounded and installed as approved by the Architect. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for plug-in connection of power tools and equipment. The Government will not be held responsible for power outages beyond its control.

   a. **Comply with applicable NEMA**, NECA and UL standards and governing regulations for materials and layout of temporary electric service, including those requirements included in Division-16 sections.
   b. **Install service and grounding** in compliance with the National Electric Code (NFPA 70), District of Columbia Building Code, and Power Company requirements. Include necessary service connection, service switch, meters, transformers, overload protected disconnect, main distribution switch gear, panelboards, wiring, cables, devices, and accessories.

2. **Temporary Lighting**: Provide local switching of temporary lighting, spaced to allow lighting to be turned off in patterns to conserve energy and retain light suitable for work-in-progress, access traffic, security check and project lock-up.

a. **Provide general service incandescent lamps** of wattage indicated or required for adequate illumination. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide exterior fixtures where fixtures are exposed to weather or moisture. Keep sockets equipped with active lamps. Where feasible, utilize fluorescent type fixtures.

3. **Temporary Telephones**: Arrange for the local telephone company to install temporary service to the project or provide cellular service to the contractor's site superintendent. Location of telephones and telephone wires is subject to Architect's approval.

4. **Water Service**: Water will be provided for project use by the Government at existing sources. Provide temporary piping, connections, maintenance and other work required to deliver water required for the project.

5. **Temporary Sanitary Facilities**: Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Use of the designated existing Government toilet facilities, will be permitted, provided these facilities are properly cleaned and maintained in a condition acceptable to the Government. Immediately prior to Final Acceptance, restore these facilities to the condition prevalent at the time of initial use. Do not clean tools or equipment in building toilet rooms.

E. **Temporary Construction and Support Facilities**:

1. **Field Offices and Sheds**: Provide a reasonably neat and uniform appearance in temporary construction and support facilities acceptable to the Architect. For temporary offices, fabrication shops, storage sheds and similar construction, provide either standard prefabricated or mobile units or the equivalent job-built construction. Provide support facilities that can be maintained properly throughout their use at the project site.

   a. **Provide fire-resistant construction** for offices, shops, and sheds located within the construction work area, or within 50 feet of building lines.
   b. **Locate field offices**, storage and fabrication sheds and other support facilities for easy access to the Work within the allocated staging area so that facilities will not block required exits or firemen's access to the building.
   c. **Except as otherwise indicated**, make the change-over from use of temporary services and facilities to use of permanent services and facilities at the earliest feasible date at each portion of the building, to minimize hazards and interferences with performance of the Work.
   d. **Maintain field offices**, storage and fabrication sheds, temporary sanitary facilities, waste collection and disposal systems, and project identification and temporary signs until near final acceptance. Immediately prior to final acceptance, with the Architect's approval, remove these facilities.

2. **Field Offices**: Provide temporary field offices of sufficient size to accommodate required office personnel and project meetings at the project site.

3. **Storage and Fabrication Sheds**: Install storage and fabrication sheds or trailers, properly sized, furnished and equipped, as required to accommodate the Work. Comply with applicable provisions specified elsewhere for distribution and use of temporary utilities.

4. **Temporary Enclosures**: At the earliest practical time provide temporary enclosure of materials, equipment, work in progress and completed portions of the Work to provide protection to the Work and employees from effects of exposure, foul weather, other construction operations, and similar activities on the site.

5. **Construction Aids**: Design, construct, and maintain construction aids and miscellaneous general services and facilities as needed to accommodate performance of the work. Construction aids and miscellaneous general services and facilities include, but are not limited to the following:

   a. **Provide adequate barriers** at perimeters of all excavation as work progresses in accordance with District of Columbia requirements and in conformance with requirements of the Special Conditions.
   b. **Provide adequate facilities** for hoisting materials and employees. Do not permit employees to ride hoists which comply only with requirements for hoisting materials. The Contractor is responsible for selection of type, size and number of facilities. Truck cranes and similar devices used for hoisting are considered as being "tools and equipment" and not temporary facilities.

7. **Project Signage**: No signs, other than safety signs, may be erected on the site unless specifically indicated otherwise.

8. **Access Roads**: To the fullest extent possible, locate paving for storage areas and temporary parking, in the same locations as permanent facilities for similar uses. To incorporate temporary paving provisions, review significant modifications of permanent paving requirements with the Architect for acceptance of the proposed improvements.

   a. **Provide temporary traffic control** facilities at the juncture of site access with public roads, including warning signs for public traffic and "STOP" signs for the access road entrance onto public roads. Comply with requirements and recommendations of local traffic authorities.

F. **Security and Protection Facilities**: Provide and maintain all necessary barricades, lights, and other safeguards for the protection of Government employees, Contractor's employees and the general public from injury. Protect materials and work on the site, whether incorporated in the work or not, against damage or loss from any cause.

1. **Protect all** electric, telephone, water, gas, sewer, steam, and other underground utility lines in sidewalks, streets or other areas, in, under or around the site, to the satisfaction of the Architect, the District of Columbia, and other authorities having jurisdiction. Prior to commencing work which may affect or disturb underground utilities, consult with the Architect.
2. **Provide a reasonably neat** and uniform appearance in security and protection facilities acceptable to the Architect.

4. **Barricades and Fences**: Comply with recognized standards and code requirements for the erection of substantial, structurally adequate barricades where needed to prevent accidents and losses. Paint with appropriate colors, graphics and warning signs to inform personnel at the site and the public, of the hazard being protected against.

Provide lighting where appropriate and needed, including flashing red lights where appropriate.

a. **When excavation** or other substantial elements of the Work begin, install a general enclosure fence with suitable lockable entrance gates. Locate where indicated, or if not indicated, enclose substantially the entire site or portion thereof determined to be sufficient to accommodate the entire construction operation. Install in a manner that will prevent persons, dogs and similar animals from easily entering the site, except by way of the entrance gates when open.

1) Except as otherwise indicated, provide open-mesh, chain-link fencing with posts set in a compacted mixture of gravel and earth. Provide No.11-gage galvanized chain link fabric fencing 8 feet high with galvanized barbed wire top strand and galvanized steel pipe posts, 1-1/2" I.D. for line posts, and 2-1/2" I.D. for corner posts.

G. **Temporary Controls**:

1. **Traffic Control**: Plan vehicular access methods, locations and timing of deliveries in a manner to minimize interference with street and pedestrian traffic and to conform to District of Columbia regulations. Do not block or obstruct public streets, driveways and walkways adjacent to the site at any time during performance of the work without proper authorization. Do not permit trucks of any kind to use existing sidewalks without prior authorization of the Architect.

2. **Collection and Disposal of Wastes**: Establish a system for daily collection and disposal of waste materials from construction areas and elsewhere on the site. Enforce requirements strictly. Do not hold collected materials at the site longer than 7 days during normal weather or 3 days when the daily temperature is expected to rise above 80 deg. F (27 deg. C). Handle waste materials that are hazardous, dangerous, or unsanitary separately from other inert waste by containerizing appropriately. Dispose of waste material in a lawful manner.

   a. Burying or burning of waste materials on the site will not be permitted.
   b. Washing waste materials down sewers or into waterways will not be permitted.
   c. Provide rodent proof containers to encourage depositing of garbage and similar wastes by construction personnel.

3. **Dust Control**: During periods of construction activity creating dust conditions sprinkle periodically the site areas disturbed by Contractor's operation or treat with dust suppressors to control dust. Dry power brooming will not be permitted. Use vacuuming, wet mopping, wet sweeping or wet power brooming. Air blowing will be permitted only for cleaning non-particulate debris. Use only wet cutting procedures for unit masonry and concrete.
4. **Noise Control**: Avoid the use of tools and equipment that produce harmful noise. Restrict the use of noise making tools and equipment to hours of use that will minimize noise complaints from persons or firms near the project site.

5. **Environmental Protection**: Provide general protection facilities, operate temporary facilities, conduct construction activities, and enforce strict discipline for personnel on the site in ways and methods that comply with environmental regulations, and that minimize the possibility that air, waterways and subsoil might be contaminated or

polluted, or that other undesirable effects might result from the performance of work at the site.

6. **Sewers and Drainage**: If existing sewers are available for temporary drainage near the site prior to completion of permanent sewers, provide temporary connections to remove effluent that can be lawfully discharged into the sewers. If existing sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off the site in a lawful manner.

7. **Snow and Ice Control**: Keep access to building and work areas clear of snow adequately to permit access while work is in progress. Do not allow snow and ice to accumulate so as to overload or otherwise endanger any portion of the Work. Do not allow snow and ice to accumulate over surfaces that can be damaged upon thawing.

H. **Installation, Operation, Termination and Removal**: Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.

1. **Supervision**: Limit availability of temporary services and facilities to essential and intended uses to minimize waste and abuse. Do not permit temporary installations to be abused or endangered. Do not allow hazardous, dangerous or unsanitary conditions to develop or persist on the project site.

2. **Maintenance**: Operate and maintain temporary services and facilities in good operating condition throughout the time of use and until removal is authorized. Protect from damage by freezing temperatures and similar elements.

   a. **Prevent water filled piping from freezing** by use of ground covers, insulation, by keeping drained or by temporary heating. Maintain distinct markers for underground lines. Protect from damage during excavation operations. Prevent contamination of water sources.

3. **Termination and Removal**: Unless the Architect requests that it be maintained for a longer period of time, remove each temporary service and facility promptly when the need for it or a substantial portion of it has ended, or when it has been replaced by the authorized use of a permanent facility, or no later than substantial completion. Repair damaged work, clean exposed surfaces and replace work which cannot be satisfactorily repaired. Contract time includes the time required for final cleanup of premises.

   a. **Remove temporary** paving materials which are not intended for or acceptable for integration into permanent paving. Remove materials contaminated with road oil, asphalt and other petro-chemical compounds, and other substances. Repair or replace street paving, curbs and sidewalks at the temporary entrances, as required by the governing authority.
   b. **Immediately prior to final acceptance**, clean and renovate permanent services and facilities that have been used to provide temporary services and facilities during the construction period.
   c. **Restoration of Site and Adjacent Areas** : Restore the site and the adjacent areas used for staging, traffic, protection and storage of materials to their conditions prior to start of work. This includes, but is not limited to all site improvements, signage, lighting, street furniture, paving, utilities, plant, trees and turf materials.

Procedures which may be required include de-compaction of compacted soils, addition of soil amendments, aeration, re-grading and removal of contaminated materials or other procedures as may be necessary.

1.8 **PRODUCTS**:

A. **General**: Refer to clause, "Materials and Workmanship," of the GENERAL CONDITIONS. After execution of the Contract, the Contractor's requests for changes in the products, materials, equipment and methods of construction required by the Contract Documents are considered requests for "contract modifications," and are subject to the requirements specified in Architect of the Capitol, "Official Procedure for Making Changes in Contracts." Revisions to the contract documents, where requested by the Architect are considered as "changes" not substitutions.

B. **Quality Assurance**: Compatibility of products is a basic requirement of product selection. When the Contractor is given the option of selecting between two or more products for use on the project, the product selected must be compatible with other products previously selected, even if the products previously selected were also Contractor options. The complete compatibility between various choices available to the Contractor is not assured by the various requirements of the Contract Documents, but must be provided by the Contractor. Provide a single product for each required product selection, regardless of whether that product selection is provided by more than one sub-contractor. Do not alter product brands or series for a given product selection during the life of the contract without written approval of the Architect.

1. **Source Limitations**: To the fullest extent possible and subject to the restrictions of the "Buy American Act," provide products of the same generic kind, from a single source, for each unit of work.

C. **Product Delivery, Storage, and Handling**: Deliver, store, and handle products in accordance with manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft. Control delivery schedules to minimize long-term storage at the site and to prevent overcrowding of construction spaces, and to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration or loss.

1. **Deliver products** to the site in the manufacturer's sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, ventilating, and installing.
2. **Store products** at the site in a manner that will facilitate inspection and measurement of quantity or counting of units, and in conformance with manufacturer's instructions.
3. **Store heavy materials** away from the project structure in a manner that will not endanger the supporting construction.

D. **General Product Compliance**: Requirements for individual products are indicated in the Contract Documents; compliance with these requirements is in itself a contract requirement. These requirements may be specified in any one of several different specifying methods, or in any combination of these methods.

1. **Procedures for Selecting Products**: The Contractor's options in selecting products are limited by requirements of the Contract Documents and governing regulations. They

are not controlled by industry traditions or procedures experienced by the Contractor on previous construction projects.

a. **Performance Specification Requirements**: Where the specifications require compliance with indicated performance requirements, provide products that comply with the specific performance requirements indicated, and that are recommended by the manufacturer for the application indicated. The manufacturer's recommendations may be contained in published product literature, or by the manufacturer's individual certification of performance. General overall performance of a product is implied where the product is specified for specific performances.

b. **Compliance with Standards, Codes and Regulations**: Where the specifications require only compliance with an imposed standard, code or regulation, the Contractor has the option of selecting a product that complies with specification requirements, including the standards, codes and regulations.

E. **General Product Requirements**: Provide products that comply with the requirements of the contract documents and that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products that are complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

1. **Provide products** that are essentially the standard catalogued products of manufacturers regularly engaged in production of such products and that are the manufacturer's latest standard design that complies with the specification requirements. Equipment shall essentially duplicate items that have been in satisfactory commercial and industrial use at least two years, or more if otherwise specified, prior to bid opening; or in lieu thereof shall have been used and operated in a test installation which, in the opinion of the Architect, duplicate its field performance for the same period of time. The Architect reserves the right to require the Contractor to submit evidence to this effect for his approval. When two units of the same class of equipment are required, these units shall be the product of a single manufacturer; however, the component parts of the system need not be the products of the same manufacturer.
2. **Provide standard**, domestically produced products for which the manufacturer has published assurances that the products and its parts are likely to be available to the Government at a later date.
3. **Nameplates**: Except as otherwise indicated for required labels and operating data, do not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view either in occupied spaces or on the exterior of the completed project.

F. **Installation of Products**: Except as otherwise indicated in individual sections of these specifications, comply with the manufacturer's instructions and recommendations for installation of the products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work. Clean exposed surfaces and protect surfaces as necessary to ensure freedom from damage and deterioration at time of acceptance.

## 1.9 PROJECT CLOSEOUT:

A. **Definitions**: "Project Closeout" is the term used to describe certain collective project requirements, indicating completion of the work that are to be fulfilled near the end of the Contract Time in preparation for final acceptance and occupancy of the Work by the

Government, as well as final payment to the Contractor and the normal termination of the Contract.

1. **Time of closeout** is directly related to "Final Acceptance." Therefore, the time of closeout may be either a single time period for the entire Work or a series of time periods for individual elements of the Work that have been certified as substantially complete at different dates. This time variation, if any, shall be applicable to the other provisions of this Division.

B. **Final Cleaning**: General Cleaning during the regular progress of the Work is required by the GENERAL CONDITIONS and is included under Article "Temporary Facilities and Controls".

1. **Cleaning**: Provide final cleaning of the Work at the time indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of work to the condition expected from a normal, commercial building cleaning and maintenance program. Comply with the manufacturer's instructions for operations.

   a. **Complete the following** cleaning operations before requesting the Architect's inspection for Final Acceptance.
   b. **Remove labels** which are not required as permanent labels.
   c. **Clean transparent materials**, to a polished condition. Remove putty and other substances which are noticeable as vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
   d. **Clean exposed** exterior hard-surfaced finishes to a dust-free condition, free of dust, stains, films and similar noticeable distracting substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean.
   e. **Wipe surfaces** of mechanical and electrical equipment clean. Remove excess lubrication and other substances. Clean light fixtures and lamps.
   f. **Clean the project site**, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas to a broom clean condition; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

2. **Pest Control**: Engage an experienced exterminator to make a final inspection of the project, and to rid the project of rodents, insects and other pests.
3. **Compliance**: Comply with safety standards and governing regulations for cleaning operations. Remove waste materials from the site and dispose of in a lawful manner.

   a. **Where extra materials** of value remaining after completion of associated work have become the Government's property, salvage or dispose of these materials to the Government's best advantage as directed.

C. **Record Document Submittals**: Specific requirements for record documents are indicated in the individual sections of these specifications. Other requirements are indicated in the GENERAL CONDITIONS. General submittal requirements are indicated in the various "Submittals" articles of individual sections of the Project Manual.

1. **Do not use** record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect's reference during normal working hours.

2. **Record Documents**: Maintain a record set of blue or black line white-prints of contract drawings and shop drawings in a clean, undamaged condition. Mark-up the set of record documents to show the actual installation where the installed work varies substantially from the work as originally shown. Mark whichever drawing is most capable of showing the actual "field" condition ("as-built" condition) fully and accurately; however, where shop drawings are used for mark-up, record a cross-reference at the corresponding location on the working drawings. Give particular attention to concealed work that would be difficult to measure and record at a later date.

   a. **Mark record sets** with red erasable pencil and, where feasible, use other colors to distinguish between variations in separate categories of work.
   b. **Note related** change-order numbers where applicable.
   c. **Organize record drawing sheets** into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
   d. **Materials and Tools**: Refer to individual sections of the Project Manual for required quantities of spare parts, extra and overrun stock, maintenance tools and devices, keys, and similar physical units to be submitted.

D. **Maintenance Manuals**: Organize operating and maintenance data into suitable sets of manageable size. Bind data into individual binders properly identified and indexed. Bind each set of data in a heavy-duty 2-inch, 3-ring vinyl-covered binder, with pocket folders for folded sheet information. Mark the appropriate identification on both front and spline of each binder.

E. **Warranties and Bonds:** At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.

   a. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.
   b. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS," the Project title or name, project number, and the name of the Contractor.

2. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

F. **General Operating and Maintenance Instructions**: Arrange for each installer of operating equipment and other work that requires regular or continuing maintenance, to meet at the site with the Government's personnel to provide necessary basic instruction in the proper operation and maintenance of the entire Work. Where installers are not experienced in the required procedures, include instruction by the manufacturer's representatives.

G. **Closeout Submittals:** Prior to requesting Final Inspection, submit the following:

1. Project Record Documents, properly annotated and in the format required.
2. Copies of Warranties and Bonds.
3. Operation and Maintenance data.
4. All required operating or special tools required in individual sections.

H. **Prerequisites to Final Acceptance**: Complete the following before requesting the Architect's final inspection for certification of final acceptance, and final payment as required by the GENERAL CONDITIONS. List known exceptions, if any, in the request.

1. **Submit the final payment** request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
2. **Submit an updated final statement**, accounting for final additional changes to the Contract Sum.
3. **Submit a certified copy** of the Architect's final punch-list of itemized work identified to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by the Architect.
4. **Submit final meter readings for utilities**, a measured record of stored fuel, and similar data either as of the date of substantial completion, or else when the Government took possession of and responsibility for corresponding elements of the Work.
5. **Submit** consent of surety.

I. **Reinspection Procedures**: The Architect will reinspect the Work upon receipt of the Contractor's notice that the work, including punchlist items resulting from earlier inspections, has been completed, except for these items whose completion has been delayed because of circumstances that are acceptable to the Architect.

J. **Removal of Protection**: Except as otherwise indicated or requested by the Architect, remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction period.

**-- End of Section --**

# SECTION 01330

# DESIGN SUBMITTAL PROCEDURES

## PART 1 GENERAL

### 1.1 SUMMARY

This section includes requirements for Contractor-originated design documents and design submittals.

### 1.2 GENERAL DOCUMENTATION REQUIREMENTS

Contractor-originated design documents shall represent a project design that complies with the Request For Proposal (RFP).

### 1.3 SUBMITTALS

Submit design submittals, including shop drawings used as design drawings, to the Government for approval.

Preconstruction Submittals

Submittal Register

Design Data

Design Drawings

Specifications

Design Analysis

Design Submittals

Closeout Submittals

Record Documents

### 1.4 DESIGN QUALITY CONTROL

#### 1.4.1 Contractor Reviewing and Certifying Authority

The QC organization is responsible for reviewing and certifying that design submittals are in compliance with the contract requirements.

#### 1.4.2 Government Approving Authority

The Contracting Officer is the approving authority for design submittals.

### 1.4.3 Designer of Record Certifying Authority

The Designer of Record (DOR) is the design certifying authority. The DOR accepts responsibility for design of work in each respective design discipline, by stamping and approving final construction drawings submitted to the Government approval authority.

### 1.4.4 Contractor Construction Actions

Upon acceptance by AOC of submission of sealed and signed design documents certified by the DOR, the Design Quality Control (DQC) and the Quality Control (QC) Managers, the Contractor may proceed with material and equipment purchases, fabrication and construction of any elements covered by that submittal.

### 1.4.5 Contractor's Responsibilities

**a.** Indicate on the transmittal form accompanying submittal which design submittals are being submitted as shop drawings.

**b.** Advise Contracting Officer of variations, as required by paragraph "Variations."

**c.** Provide an updated, cumulative submittal register with each design package that identifies the design and construction submittals required by that design package and previous submittals.

### 1.4.6 QC Organization Responsibilities

**a.** Both the DQC and the QC Manager must certify design submittals for compliance with the contract documents. The DOR stamp on drawings indicates approval from the DOR.

**b.** QC organization shall certify submittals forwarded by the Designer of Record (DOR) to the Contracting Officer with the following certifying statement:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with Contract Number (insert contract number here), is in compliance with the contract documents, and is submitted for Government approval.

Certified by Design Quality Control Manager _____,
Date _____

Certified by QC Manager_____,
Date _____"

**c.** Sign certifying statement. The persons signing certifying statements shall be the QC organization members designated in the approved QC plan. The signatures shall be in original ink. Stamped signatures are not acceptable.

**d.** Update submittal register as submittal actions occur and maintain the submittal register at project site until final approval of all work by Contracting Officer.

**e.** Retain a copy of approved submittals at project site.

### 1.4.7 Government Responsibilities

The Government will

**a.** Note date on which submittal was received from QC manager, on each submittal.

**b.** Perform a quality assurance (QA) review of submittals. Government will notify Contractor when comments for that design package are posted and ready for Contractor evaluation and resolution.

**c.** Upon submittal of final design package and resolution of comments by the Contractor, the Government will sign final design package, when approved, and return electronic copy of signed design documents to the Contractor.

#### 1.4.7.1 Actions Possible

Submittals will be returned with one of the following notations:

**a.** Submittals may be marked "approved."

**b.** Submittals marked "not reviewed" will indicate submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and certified by Contractor, or is not complete. Submittal will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.

**c.** Submittals marked "revise and resubmit" or "disapproved" indicate submittal is incomplete or does not comply with design concept or requirements of the contract documents and shall be resubmitted with appropriate changes. If work has been started on the unacceptable portion of the design submittal, the Contractor shall propose corrective action. No further work shall proceed until the issue is resolved in a manner satisfactory to the Government.

## 1.5 DESIGN DRAWINGS

### 1.5.1 Shop Drawings Used as Design Drawings

Design drawings may be prepared more like shop drawings to minimize construction submittals after final designs are approved. Therefore, the Contractor is encouraged to prepare and submit with the design drawings, appropriate connection, fabrication, layout, and product specific drawings.

### 1.5.2 Drawing Format for Shop Drawings Used as Design Drawings

The Contractor-originated drawings will be used as the basis for the record drawings. Shop drawings included as design documents shall comply with the same drawing requirements such as drawing form, sheet size, layering, lettering, and title block used in design drawings.

### 1.5.3 Identification of Shop Drawings Used as Design Drawings

The Contractor's transmittal letter shall indicate which shop drawings are being submitted as design drawings.

### 1.5.4 Drawing Standards

Prepare, organize, and present design drawings in accordance with the requirements of the AOC A/E Design Manual.

Submit all CADD files for the final drawings on CD-ROM disks in Microstation format. Drawing files shall be full files, uncompressed and unzipped. Refer to AOC CADD Standards for additional requirements.

### 1.5.6 Seal on Documents

All final Contractor-originated design drawings shall be signed, dated, and bear the seal of the registered architect or the registered engineer of the respective discipline. This seal shall be the seal of the Designer of Record for that drawing, and who is professionally registered for work in that discipline.

## 1.6 SPECIFICATIONS

Provide a Contractor-originated design specification that, in conjunction with the drawings, demonstrates compliance with materials, equipment, execution, and field quality control requirements of the RFP. The specified products, equipment, fixtures, devices, and systems submitted by the Contractor and approved by the Contracting Officer shall be used to construct the project.

### 1.6.1 Specifications Format

The Contractor may prepare design specifications that include manufacturer specific data and catalog cuts in lieu of prescriptive specifications. Organize the specifications using Construction Specification Institute (CSI) Masterformat™. A prescriptive specification is required for all items for which the Contractor has not made final materials and equipment choices. Provide specifications to include the following:

**a.** Cover sheet and table of contents.

**b.** Specification sections.

**c.** Manufacturer's Product Data.

### 1.6.2 Identification of Manufacturer's Product Data Used as Specifications

Provide complete and legible catalog cut sheets, product data, installation instructions, operation and maintenance instructions, warranty, and certifications for products and

equipment for which final material and equipment choices have been made. Indicate, by prominent notation, each product that is being submitted including optional manufacturer's features, and indicate where the product data shows compliance with the RFP.

### 1.6.3 Submittal Register

Provide cumulative register in format prescribed by the Government and that identifies the design and construction submittals required by that design package and previous submittals. The Designer of Record shall develop the submittal register and determine which items they need to review. To obtain Government approval of the final design package, complete all fields in the submittal register.

### 1.6.4 Specification Software

Submit the final specification source files in Wordperfect.

## 1.7 DESIGN ANALYSIS

The design analysis shall be a presentation of facts to demonstrate the concept of the project is fully understood and the design is based on sound engineering principles. Provide design analyses for each discipline and include the following:

**a.** Basis of design that includes:

(1) An introductory description of the project concepts that addresses the salient points of the design;

(2) An orderly and comprehensive documentation of criteria and rationale for system selection; and

(3) The identification of any necessary licenses and permits that are anticipated to be required as a part of the design and/or construction process.

**b.** Code and criteria search shall identify all applicable codes and criteria and highlight specific requirements within these codes and criteria for critical issues in the facility design.

**c.** Calculations as specified and as needed to support this design.

**d.** Traffic study showing how proposed layout meets expected vehicle usage requirements.

### 1.7.1 Basis of Design Format

The basis of design for each design discipline shall include a cover page indicating the project title and locations, contract number, table of contents, tabbed separations for quick reference, and bound in a single volume.

### 1.7.2 Design Calculations

Place the signature and seal of the designer responsible for the work on the cover page of the calculations for the respective design discipline.

## 1.8 RECORD DOCUMENTS

### 1.8.1 Record Drawings

The as-built modifications shall be accomplished by electronic drafting methods on the Contractor-originated .DGN design drawings to create a complete set of record drawings.

**a.** For each record drawing, provide CADD drawing identical to signed Contractor-originated .PDF drawings, that incorporates modifications to the as-built conditions. In addition, copy initials and dates from the Contracting Officer approved .PDF documents to the title block of the record CADD.DGN drawings. The RFP reference or definitive drawings are not required for inclusion in the record set of drawings.

**b.** After all as-built conditions are recorded on the CADD.DGN files, produce a PDF file of each individual record drawing. Electronic signatures are not required on record drawings.

### 1.8.2 Source Documents

Provide the specifications, design analysis, reports, surveys, calculations, and any other contracted documents on the CD-ROM disk with the record drawings.

# PART 2 PRODUCTS

## 2.1 DESIGN SUBMITTALS

Complete the Contractor-originated design submittals as defined by this contract, and coordinate with the approved design network analysis schedule.

### 2.1.1 Design Submittal Packages

The Government prefers to review for Quality Assurance (QA) as few submittal packages as possible. A Site Design Submittal Package is required, however Critical Path Design Submittals are acceptable if they are substantiated as having an impact to the critical path in the Government approved Progress Schedule. A Critical Path submittal shall include all design analyses, drawings, specifications and product data required to fully describe the project element for Government review.

Examples of project elements that may be submitted as Critical Path Design Submittal Packages are: Demolition Design, Foundation Design, long lead items, or any other construction activity or project element that can be organized into a submittal package that can be reviewed and approved by the Government without being contingent upon subsequent design submittals.

#### 2.1.1.1 Site Design

The Site Design typically includes the following components:

**a.** Demolition

**b.** Site work including Environmental

**c.** Site electrical work

**d.** Site civil/mechanical utilities

### 2.1.2 Required Design Submittals

Provide the following Design Submittal packages. Provide comprehensive, multi-discipline design packages that include design documentation for project elements, fully developed to the design stage indicated, except where specified otherwise.

**a.** Design Development - Government Progress QA. On or before 21 calendar days after contract award. 14 calendar day Government review time.

**b.** Prefinal (100%) Design - Government Progress QA. On or before 63 calendar days after contract award. 14 calendar day Government review time.

**c.** Final Design - Government QA. On or before 91 calendar days after contract award. 7 calendar day Government review time.

### 2.1.3 Critical Path Design Submittals

Provide Critical Path Design Submittals that include design documents for the project elements involved. Include and provide full documentation that would normally have been provided in earlier submittal stages, such as Design Development Phase.

**a.** 100 percent (Prefinal) Design - Government Progress QA. On or before 21 calendar days after contract award. 14 calendar day Government review time.

**b.** Final Design - Government QA. On or before 42 calendar days after contract award. 7 calendar day Government review time.

### 2.1.4 Review Copies of Design Submittal Packages

**a.** Provide copies of each design submittal package for review to the following reviewers. Addresses for mailing will be furnished at the kick-off meeting.

(1) 8 copies to the AOC.

**b.** Provide the same quantities of copies for resubmittals, as required for each design submittal.

## 2.2 IDENTIFICATION OF DESIGN SUBMITTALS

Provide a title sheet to clearly identify each submittal, the completion status, and the date. The title sheet shall be unique to a particular design submittal. Submit the project title sheet with design status and date for the design submittals.

### 2.2.1 Critical Path Submittal Title Sheet

Identify Critical Path submittals as such, and include a title sheet indicating the type of critical path submittal, the status, and the date.

## PART 3 EXECUTION

## 3.1 CONTRACTOR'S RESOLUTION OF COMMENTS

Provide written responses to all written comments by the Government. Resubmittal of an unacceptable design submittal shall be a complete package that includes all the required, specified components of that design submittal. When required by the Government, Contractor resubmittal of design package, due to nonconformance to the contract, is not a delay in the contract.

## 3.2 VARIATIONS

Variations from contract requirements require Government approval and will be considered where advantageous to the Government. The Designer of Record must approve any proposed variation prior to submittal to the Government.

## 3.3 THE CONTRACT AND ORDER OF PRECEDENCE

### 3.3.1 Contract Components

The contract consists of the solicitation, the approved proposal, and the final design.

### 3.3.2 Order of Precedence

In the event of conflict or inconsistency between any of the below described portions of the conformed contract, precedence shall be given in the following order:

**a.** Any portions of the proposal or final design that exceed the requirements of the solicitation.

(1) Any portion of the proposal that exceeds the final design.

(2) Any portion of the final design that exceeds the proposal.

(3) Where portions within either the proposal or the final design conflict, the portion that most exceeds the requirements of the solicitation has precedence.

**b.** The requirements of the solicitation, in descending order of precedence:

(1) Part 1 – Proposal Forms and Documents.

(2) Part 2 - General Requirements.

(3) Part 3 - Project Program Requirements.

(4) Part 4 - Performance Specifications

(5) Part 6 - Attachments.

#### 3.3.2.1 Government Review or Approval

Government review or approval of any portion of the proposal or final design shall not relieve the Contractor from responsibility for errors or omissions with respect thereto.

**-- End of Section --**

# SECTION 01450

# DESIGN AND CONSTRUCTION QUALITY CONTROL

## PART 1 GENERAL

### 1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

| | |
|---|---|
| ASTM E 329 | (2002) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction |

### 1.2 SUBMITTALS

Submit the following in accordance with Section 01330 DESIGN SUBMITTAL PROCEDURES and Section 01000 GENERAL REQUIREMENTS.

Preconstruction Submittals

Design Quality Control (DQC) Plan

Submit a DQC Plan prior to the Post Award Kickoff Meeting.

Construction Quality Control (CQC) Plan

Submit a Construction QC Plan prior to start of construction.

Certificates

Preliminary Inspections and Final Acceptance Testing

Closeout Submittals

Training Course Outline

Training Video Recording

### 1.3 QC PROGRAM REQUIREMENTS

Establish and maintain a QC program that is administered by a Design and Construction Quality Control organization, using Quality Control (Design and Construction) Plans, meetings, a Coordination and Mutual Understanding Meeting, three phases of control, submittal review and approval, testing, completion inspections, and QC certifications and documentation necessary to provide design, materials, equipment, workmanship, fabrication, construction and operations which comply with the requirements of this Contract. The QC program shall cover on-site and off-site work. No construction work or testing may be performed unless the QC Manager is on the work site.

### 1.3.1 Design and Construction Quality Control Plans

The Contractor shall provide a project specific Design Quality Control (DQC) Plan and Construction Quality Control (CQC) Plan, for review and acceptance by the Government. The Contractor shall perform no construction under this contract until the Contracting Officer accepts the DQC Plan and the CQC Plan. The Contractor's plan shall include the following:

**a.** The QC organization for this contract, including member resumes.

**b.** A letter from an officer of the company designating the QC Manager, Alternate QC Manager, and DQC Manager, and their authority.

**c.** QC Manager qualifications.

**d.** DQC Manager qualifications.

**e.** List of Definable Features of Work (DFOW) including list of design submittal packaging. DFOW is a task that is separate and distinct from other tasks and has control requirements and work crews unique to the task.

**f.** Plan to implement the "Three Phases of Control" for each DFOW.

**g.** Testing Plan, log and list of personnel and accredited laboratories that will perform tests. Construction materials testing laboratories must be accredited by a laboratory accreditation authority and will be required to submit a copy of the Certificate of Accreditation and Scope of Accreditation with the testing plan.

**h.** Submittal Log including design submittals, listing personnel who will review submittals and noting submittals for Government review.

**i.** Procedures for submitting and reviewing variations prior to submission to the Government.

## 1.4 QC ORGANIZATION

The QC Manager shall report to an officer of the firm and shall not be subordinate to the Project Superintendent or the Project Manager.

The Contracting Officer may require the QC Manager, or the DQC Manager, be removed and replaced, if the Contracting Officer determines that either is not performing satisfactorily.

### 1.4.1 QC Manager

QC Manager qualifications:

**a.** Five years of combined experience as a Superintendent, QC Manager, Project Manager, or Project Engineer on similar size and type construction contracts, and at least two years experience as a QC Manager.

**b.** Familiar with requirements of 29 CFR – 1910 and 1926, and experience in the areas of hazard identification and safety compliance.

QC Manager responsibilities:

**a.** Participate in the Post Award Kick-off, Design Development, and Coordination and Mutual Understanding Meetings.

**b.** Implement the "Three Phase of Control" plan for each DFOW and notify the Contracting Officer at least 3 business days in advance of each Preparatory and Initial Phase meeting. Submit respective checklists to the Contracting Officer the next business day.

**c.** Ensure that no construction begins before the DOR has finalized the design for that segment of work, and construction submittals are approved as required.

**d.** Inspect all work and rework, using International Conference of Building Officials certified QC specialists as applicable, to ensure its compliance with contract requirements. Maintain a rework log.

**e.** Immediately stop any segment of work, which does not comply with the contract plans and specifications, and direct the removal and replacement of any defective work.

**f.** Remove any individual from the site who fails to perform their work in a skillful, safe and workmanlike manner or whose work does not comply with the contract plans and specifications.

**g.** Prepare daily QC Reports.

**h.** Ensure that Contractor Production Reports are prepared daily.

**i.** Hold weekly QC meetings with the DQC, DOR (or representative), Superintendent and the Contracting Officer; participation shall be suitable for the phase of work. Post minutes of these meetings.

**j.** Ensure that Safety Officer inspections are performed. Attend weekly Toolbox meetings.

**k.** Ensure that design and construction submittals are reviewed and approved, as required by the contract, prior to allowing material on site and work to proceed with these items. Maintain a submittal log.

**l.** Update As-built drawings daily, maintaining up-to-date set on site.

**m.** Maintain a testing plan and log. Ensure that all testing is performed in accordance with the contract. Review all test reports and notify the Contracting Officer of all deficiencies, along with a proposal for corrective action.

**n.** Maintain deficiency log on site, noting dates deficiency identified, and date corrected.

**o.** Certify and sign statement on each invoice that all work to be paid under the invoice has been completed in accordance with contract requirements.

**p.** Perform Punch-out and Pre-final inspections, and participate in Final Inspections. Submit list of deficiencies to the Contracting Officer for each inspection. Correct all deficiencies prior to the Final inspection. Notify Contracting Officer prior to Final Inspection to establish a schedule date acceptable by the Contracting Officer.

**q.** Ensure that all required keys, operation and maintenance manuals, warranty certificates, and the As-built drawings are correct and complete, in accordance with the contract, and submitted to the Contracting Officer.

**r.** Assure that all applicable tests, special inspections, and observations required by the contract are performed.

**s.** Coordinate all factory and on-site testing, Testing Laboratory personnel, QC Specialists, and any other inspection and testing personnel required by this Contract.

**t.** Notify the Contracting Officer of any proposed changes to the QC plan.

**u.** Retain a copy of approved submittals at project site, including Contractor's copy of approved samples.

### 1.4.2 DQC Manager

DQC Manager qualifications:

**a.** A minimum of 5 years experience as a design Architect or Engineer on similar size and type designs /or design-build contracts. Provide education, experience, and management capabilities on similar size and type contracts.

**b.** Be a registered professional engineer or architect with active registration in the State in which the project will be constructed. Provide proof of registration as part of the resume submittal package.

DQC Manager responsibilities:

**a.** Be responsible for the design integrity, professional design standards, and all design services required.

**b.** Be a member of the Designer of Record's (DOR) firm.

**c.** Be responsible for development of the design portion of the QC Plan, incorporation and maintenance of the approved Design Schedule, and the preparation of DQC Reports and minutes of all design meetings.

**d.** Participate in the Post Award Kick-Off, all design planning meetings, design presentations, and QC meetings.

**e.** Implement the DQC plan and shall remain on staff and involved with the project until completion of the project.

**f.** Be cognizant of and assure that all design documents on the project have been developed in accordance with the Contract, and have been properly coordinated.

**g.** Develop the submittal register. Coordinate with each DOR to determine what items need to be submitted, and who needs to approve.

**h.** Coordinate all training issues and validate that the testing and training requirements of this contract are accomplished.

**i.** Provide QC certification for design compliance.

### 1.4.3 QC Specialists

QC Specialists shall assist and report to the QC Manager and may perform production related duties but must be allowed sufficient time to perform their assigned quality control duties. QC Specialists are required to attend the Coordination and Mutual Understanding Meeting, QC meetings and be physically present at the construction site to perform the three phases of control and prepare documentation for each definable feature of work in their area of responsibility.

## 1.5 THREE PHASES OF CONTROL

The Three Phases of Control shall adequately cover both on-site and off-site work and shall include the following for each DFOW.

### 1.5.1 Preparatory Phase

Notify the Contracting Officer at least two work days in advance of each preparatory phase meeting. The meeting shall be conducted by the QC Manager and attended by the QC Specialists, the DQC Manager, the Project Superintendent, and the foreman responsible for the DFOW. When the DFOW will be accomplished by a subcontractor, that subcontractor's foreman shall attend the preparatory phase meeting. Document the results of the preparatory phase actions in the Preparatory Phase Checklist. Perform the following prior to beginning work on each DFOW:

**a.** Review each paragraph of the applicable specification sections;

**b.** Review the Contract drawings;

**c.** Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required;

**d.** Review the testing plan and ensure that provisions have been made to provide the required QC testing;

**e.** Examine the work area to ensure that the required preliminary work has been completed;

**f.** Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data;

**g.** Discuss construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each DFOW; and

**h.** Review the APP and appropriate Activity Hazard Analysis (AHA) to ensure that applicable safety requirements are met, and that required Material Safety Data Sheets (MSDS) are submitted.

### 1.5.2 Initial Phase

Notify the Contracting Officer at least two work days in advance of each initial phase. When construction crews are ready to start work on a DFOW, conduct the initial phase with the QC Specialists, the DQC Manager, the Project Superintendent, and the foreman responsible for that DFOW. Observe the initial segment of the DFOW to ensure that the work complies with Contract requirements. Document the results of the initial phase in the Initial Phase Checklist. Repeat the initial phase for each new crew to work on-site, or when acceptable levels of specified quality are not being met. Perform the following for each DFOW:

**a.** Establish the quality of workmanship required;

**b.** Resolve conflicts;

**c.** Ensure that testing is performed by the approved laboratory, and

**d.** Check work procedures for compliance with the APP and the appropriate AHA to ensure that applicable safety requirements are met.

### 1.5.3 Follow-Up Phase

Perform the following for on-going work daily, or more frequently as necessary, until the completion of each DFOW and document in the daily CQC Report:

**a.** Ensure the work is in compliance with Contract requirements;

**b.** Maintain the quality of workmanship required;

**c.** Ensure that testing is performed by the approved laboratory; and

**d.** Ensure that rework items are being corrected.

### 1.5.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same DFOW if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a DFOW is resumed after substantial period of inactivity, or if other problems develop.

### 1.5.5 Notification of Three Phases of Control for Off-Site Work

Notify the Contracting Officer at least two weeks prior to the start of the preparatory and initial phases.

## 1.6 COMPLETION INSPECTIONS

The Contractor shall perform the necessary prefinal inspections, compile punchlists, and correct deficiencies. Notify the Contracting Officer 5 calendar days prior to the prefinal inspection to provide

Contracting Officer option to attend. Notify the Contracting Officer at least 14 calendar days prior to the date a final acceptance inspection can be held. The Government will perform final inspection to verify that the facility is complete and ready to be occupied. All items previously identified on the prefinal punchlist will have been corrected and acceptable.

## 1.7 TRAINING

The DQC Manager shall provide a comprehensive project-specific Government personnel training program for the systems of the facility specified in the technical specifications of this Contract. The core of this training will be based on manufacturer's recommendations and the operation and maintenance manual provided as a part of this Contract. Training shall include classroom discussion as well as hands on maintenance, replacement of typical components and repair type maintenance training for parts typically replaced or repaired in the field. Training shall be a minimum of 8 hours for a class size to be designated by AOC.

Provide each trainee in the course a written training course outline. Submit outline for approval at least 14 calendar days prior to training session. Provide to the Contracting Officer two copies of the training video recording in VHS or DVD format. Confirm media format required with the using activity. The recording shall capture, in video and audio, all instructors training presentations including question and answer periods with the trainees.

## 1.8 DOCUMENTATION

Maintain current and complete records of on-site and off-site QC program operations and activities.

**-- End of Section --**

# SECTION 01546

# SAFETY AND HEALTH

## PART 1 - GENERAL

### 1.1 DESCRIPTION OF WORK:

**A.** General: This section, general in nature, is applicable to all work performed under this contract and identifies some of the precautions necessary to protect the safety and health of employees, visitors, occupants and contract employees, and to prevent the loss of or damage to property and the environment.

1. Note the Construction Contractor submittal requirements outlined in Part 1 paragraph "Submittals" of this Section.

**B.** Related Work: The following sections, located elsewhere in this Project Manual, indicate the scope of work and specific measures to control hazardous materials/conditions:

1. Division 1 Section "General Requirements"

### 1.2 REFERENCES:

**A.** General: 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. Exclusion of any specific regulations/standards required by Federal and/or local codes does not relieve the Contractor of their legal and contractual obligations to adhere to such requirements.

**B.** National Standards / Code of Federal Regulations (CFRs):

1. 29 CFR 1910 - OSHA Occupational Safety and Health Standards.
2. 29 CFR 1926 - OSHA Safety and Health Regulations for Construction.
3. 40 CFR Parts 700-799, Subchapter R - Toxic Substance Control Act (TSCA).
4. 40 CFR Parts 50-99, Air Programs.
5. 40 CFR Parts 260-299, Hazardous Waste Management System (radionuclides).
6. 40 CFR Part 761 - Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.
7. 40 CFR Parts 104-140 and 401-471, Water Programs.
8. DOT Manual of Uniform Traffic Control Devices.
8. Americans with Disabilities Act (ADA), current with updates.

**C.** Related Building and System Codes:

1. International Building Code (IBC), 2003.
2. International Existing Building Code (IEBC), 2003.
3. National Fire Code - NFPA 101, 2003.

4. International Electrical Code, 2003; and related NEMA, NECA, and UL Standards.
5. International Mechanical Code, 2003.
6. International Plumbing Code, 2003.

**D.** Federal Standard 313A - Material Safety Data Sheets, Preparation and Submission.

**E.** Related District of Columbia, state, and local regulations shall apply.

## 1.3 DEFINITION OF HAZARDOUS MATERIALS:

**A.** General: Refer to hazardous and toxic materials/substances, Subparts H and Z of 29 CFR 1910 and related parts of 29 CFR 1926; 40 CFR 261; and to others as defined in Federal Standard 313.

**B.** Those hazardous materials most commonly encountered can include pesticides, cleaning agents, paints, adhesives, strippers, solvents, asbestos, polychlorinated biphenyls (PCB's), mercury vapor lamps, but may include others. Any unlabeled substance should be handled as hazardous material until properly identified.

**C.** All suspect asbestos containing materials (e.g., boiler insulation, duct insulation, pipe insulation), surfacing materials (i.e., plaster and sprayed-on fireproofing) and miscellaneous materials (i.e., asphalt flooring, ceiling tiles, adhesives and mastics, drywall, roofing, gaskets and cement board), must be considered asbestos containing unless proven otherwise in accordance with 29 CFR 1926.1101.

**D.** Pre-1978 Surfaces: All finished/painted surfaces of buildings constructed prior to 1978 shall be considered finished with lead based paint unless proven otherwise.

**E.** Products likely to contain PCB's include electrical transformers, capacitors, voltage regulators, oil switches, and some fluorescent light ballasts. Transformer vaults with PCB contaminated floors are identified by signage at the entry door (refer to Part 3 of this Section, article "Cautionary Procedures at Existing Vaults").

**F.** Products likely to include mercury include fluorescent light tubes, switches, gauges, thermostats, and older thermometers.

## 1.4 QUALITY ASSURANCE:

**A.** Pre-Construction Safety Meeting: Representatives of the Contractor must meet with the Contracting Officer and his/her representative(s) prior to the start of work under this contract. The purpose of the pre-construction meeting is to review the Contractor's Safety and Health Program and Policies, and to discuss the implementation of all safety and health provisions pertinent to the work to be performed under the contract. The Contractor shall be prepared to discuss, in detail, the measures he/she intends to take in controlling any unsafe or unhealthy conditions associated with the work to be performed under the contract. If directed by the Contracting Officer, this meeting may be held in conjunction with other pre-construction meetings such as the General Pre-Construction meeting. The level of detail of the safety meeting is dependent upon the nature of the work and the potential inherent hazards. The

Contractor's principal on-site representative(s), the general superintendent and his/her safety representative(s) shall be in attendance.

**B.** Compliance With Regulations: All work, including contact with the handling of hazardous or regulated materials, the disturbance or dismantling of structures containing hazardous or regulated materials, and/or the transport and disposal of hazardous or regulated materials shall comply with the applicable requirements of 29 CFR 1910/1926, 40 CFR, 49 CFR, and all other applicable federal, state, and local regulations.

**C.** Construction Site Lighting: Lighting intensity levels for construction areas shall meet the minimum requirements established by 29 CFR 1926.56: Illumination, including Table D-3 - *Minimum Illumination Intensities in Foot-Candles*.

**D.** Compliance/Conflicts: All work shall comply with applicable Federal, state and local safety and health requirements. Where there is a conflict between applicable regulations, the most stringent shall take precedence.

**E.** Contractor Responsibility: All Contractors shall assume full responsibility and liability for compliance with applicable regulations pertaining to the health and safety of personnel during the execution of work, and shall hold the Government harmless for any action on his/her part, or that of his/her employees or subcontractors, which results in illness, injury or death. The Contractor shall designate a single point-of-contact who is authorized to act on behalf of the contracting firm, authorized to take immediate corrective actions, and assigned the task of daily inspections and reporting outlined herein. Construction Contractors shall comply with the following additional requirements in accordance with 29 CFR 1926.16 (Prime/Subs):

1. Compliance with the accepted Accident Prevention Plan written by the prime Contractor for the specific work, submitted to the government, and reviewed by the COTR. The Contractor's plan will be job specific and will include work to be performed by the subcontractors, and measures to be taken by the Contractor to control hazards associated with materials, services, or equipment provided by suppliers.
2. Regularly scheduled safety meetings shall be held at least once a week for all supervisors on the project to review past activities, to plan ahead for new or changed operations, and to establish safe working procedures for the anticipated hazards. An outline of each meeting shall be submitted through the COTR to the Contracting Officer.
3. At least one "toolbox" safety meeting shall be conducted weekly before start of work by field supervisors or foreman for all workers. An outline report of the meeting, including date, time, duration, attendance, subjects discussed and the name of the director shall be maintained and copies furnished to the designated authority on request.

## 1.5 SUBMITTALS:

**A.** Submittal "Punch-List:" A submittal punch list for projects involving "other" hazardous materials as identified in the Construction Contractor's Safety and Health Program and Policies (paragraph B, below) and/or other recognized flammable or toxic products identified in the referenced codes/standards.

**B.** Contractor's Safety and Health Program and Policies: Submit a Plan of Action for handling hazardous materials (except for asbestos, lead based paint, PCBs and mercury lamps as they are covered by specific sections) and/or flammable or toxic products. Work shall not commence until the Contractor's safety program has been reviewed by the Architect. The Construction Contractor's Plan of Action shall contain the following:

1. Activity Hazard Analysis and Accident Prevention Plan: Identification of anticipated hazards, problems, and proposed mitigation measures/mechanisms.
2. Description of how applicable safety and health regulations and standards are to be met.
3. Protection of the public or others not related to the operation. Maintain code-compliant means of egress for project duration.
4. Means of protection for adjacent non-construction areas, permanent and temporary access ways, and occupants and for controlling noise/dust/fumes/debris generated by the work.
5. Contractor Safety Officer: Identify a lead Safety Officer and alternates, including 24-hour contact information for each.
6. Specialized training and experience of employees to be used for the work.
7. Type of protective equipment and work procedures to be used.
8. Material Safety Data Sheets (MSDSs) for, and proposed procedures for using, disposing of, or storing toxic/hazardous materials (also see 29 CFR1910.1200). All management and disposal of wastes shall be in accordance with Federal, states and local regulations.
9. Phasing requirements to minimize impact to non-construction work activities.
10. Emergency procedures for handling accidental spills, releases or potential exposures.
11. Interfacing of trades and control of subcontractors, if applicable.
12. Identification of any required analyses, test demonstrations, and validation requirements.
13. Hazard Communications Plan.
14. Trenching and Shoring Plan.
15. Confined Spaces employee certifications and related work procedures.
16. Multi-Employer Worksite Plan.
17. Demolition plans outlining protective measures and responsibilities required under 29 CFR 1926, Subpart T.

**C.** Accident Reporting: Serious accidents such as those resulting in: treatment of an injury at a medical facility; response by emergency medical personnel; or damage to property other than that of the Contractor will be reported to the contracting officer's representative by telephone within twenty-four hours of the occurrence. A copy of each accident report, which the Contractor or subcontractors submit to their insurance carriers, shall be forwarded through the Contracting Officer's Technical Representative (COTR) to the Contracting Officer (CO) as soon as possible (in no event later than seven (7) calendar days after the occurrence). All accidents/losses shall be reported using AOC "Incident Investigation Report" (from AOC Safety Policy 9-4, available from the COTR) or other form that meets OSHA Standards, as required. Any incident involving fatality or permanent total disability, or property damage to the Government or other property amounting to $100,000 or more requires immediate notification of the AOC Safety and Occupational Health Branch (SOHB).

**D.** MSDSs: The Contractor shall provide copies of each MSDS, in accordance with 29 CFR

1910.1200 - *App E* and with AOC 52.223-1. One copy shall be provided to the COTR per Division 1 submittal requirements, and a second copy shall be kept in an MSDS binder on the job site.

**E.** Waste Disposal: The Contractor shall dispose of all wastes and provide all paperwork, including but not limited to, manifests and disposal certifications, in accordance with all federal, state, and local regulations.

**F.** Hot Work Permits: When coordinating with the AOC's jurisdiction Superintendent for hot work, submit AOC designated "Hot Work Permit" (from AOC Safety Policy 10-14, available from the COTR) or other form that meets OSHA Standards, as required.

**G.** Worker Certifications: The Contractor shall provide copies of all worker certifications for handling Hazardous Materials, Working in Confined Spaces, and other certifications required by OSHA, EPA, and local regulatory agencies (not required by other technical sections in the Project Manual).

**H.** Scaffolding: All scaffolding that is erected on this job will be erected in accordance with the requirements of 29 CFR 1926, Subpart L -- *Scaffolds*. Per OSHA Standards, a scaffold erection plan will be developed by the Contractor, certified by an engineer (licensed in the District of Columba, Virginia, or Maryland) and provided to the CO prior to set up. Once in place, the Contractor's assigned safety officer shall inspect and document the conditions of the scaffold and scaffold anchor points prior to use, and once per shift thereafter. Any observed failures in the scaffold shall render it unusable until the condition is rectified and re-inspected. Weekly scaffold inspection reports shall be provided to the designated COTR for inclusion in the contract records.

1. Other Means of Access: Should the Contractor employ other means of access to the work area, they shall be utilized in accordance with the requirements of 29 CFR 1926, Subpart N -- *Cranes, Derricks, Hoists, Elevators, and Conveyors*. The Contractor shall submit a plan for use of such equipment, fully coordinated with any other plans for site facilities (i.e., scaffolding, staging, etc.).
2. Scaffolding constructed by the Contractor for use by AOC employees shall also comply with 29 CFR 1910.

## PART 2 - PRODUCTS

### 2.1 MATERIALS AND EQUIPMENT:

**A.** Special facilities, devices, equipment, clothing, and similar items used by the Contractor in the execution of work shall comply with all applicable regulations. Such materials and equipment shall be identified in the Plan of Action called for herein.

### 2.2 MATERIAL SAFETY DATA SHEETS (MSDSs):

**A.** MSDSs shall be available on-site for all products used under this contract. The prime contractor is responsible for meeting the hazard communication requirements, in accordance with 29 CFR 1910.1200. To the extent feasible, non-flammable and non-toxic products shall

be used.

## PART 3 - EXECUTION

### 3.1 HAZARDOUS MATERIALS:

**A.** General: The Contractor shall bring to the COTR's attention, any material suspected of being hazardous which he/she encounters during execution of the work. The COTR shall then determine whether the Contractor shall perform tests to determine the nature or toxicity of the material. If the COTR directs the Contractor to perform tests, and/or if the material is found to be hazardous and additional protective measures are needed, a change to the contract may be required (subject to the "AOC Official Procedure for Making Changes to Contracts"). Persons conducting sampling testing and laboratories processing samples shall be certified.

### 3.2 CONFINED SPACES:

**A.** Confined Spaces: It is the responsibility of the AOC to identify and demarcate all known confined spaces within our facilities. It is the Contractor's responsibility to notify and coordinate with the Superintendent's Office when confined space work is to be done, obtain permission from this office to enter the space, conduct all required testing of space prior to entry, and complete an entry permit as required by OSHA regulations and the Confined Space Program previously submitted to the AOC COTR for the project.

### 3.3 PROTECTION:

**A.** Contractor Responsibility: The Contractor shall take all necessary precautions to prevent injury to the public, building occupants and visitors, and damage to or contamination of property or the environment. For the purposes of this contract, the public or building occupants shall include all persons not employed by the Contractor or subcontractor thereof.

**B.** Welding, Cutting, and Brazing: The AOC specifically requires a permit for welding, cutting, and brazing. This AOC "Hot Work Permit" shall be approved each day by the AOC Superintendent's Safety Specialist, or his/her designee, and coordinated through the Superintendent's Office whenever welding, cutting or any open flame work is performed. Work areas shall be kept clear of combustibles within a 35-foot radius of any hot work. Combustibles which cannot be removed shall be covered with flame-resistant blankets. Compressed gas cylinders shall be secured in a vertical position and stored in accordance with Compressed Gas Association (GSA) Guidelines at all times. Valve protection caps shall be in place whenever cylinders are not in use, moved or stored. Appropriate fire extinguishers shall be maintained at welding and cutting operations. A designated fire watch shall sign and return the permit. The fire watch shall be on duty during operations and for a minimum of 30 minutes after completion of welding or cutting operations to ensure no possibility of fire exists.

1. Provide adequate ventilation to protect employees from fume or gas exposure.
2. During arc welding activities erect screens to shield activities.

**C.** Storage: It is prohibited to store, position, or use equipment, tools, materials, scraps, and trash in a manner likely to present a hazard to the public or building occupants by its accidental shifting, ignition, or other hazardous qualities. Storing of combustible or flammable liquids shall be in accordance with the current edition of the National Fire Code for Flammable and Combustible Materials (NFPA 30). Compressed gases shall be stored in accordance with Compressed Gas Association (CGA) guidelines.

**D.** Obstructions: No corridor, aisle, stairway, door, or exit shall be obstructed or used in such a manner as to encroach upon routes of ingress or egress utilized by the public or building occupants, or to present an unsafe or unhealthy condition to the public or building occupants.

**E.** Housekeeping: Housekeeping practices shall be in conformance with OSHA 29 CFR 1910.22, 29 CFR 1910.141, 29 CFR 1910.1001, 29 CFR 1910.1025, 29 CFR 1926.25, 29 CFR 1926.62, and 29 CFR 1926.1101, for non-construction and construction contracts respectively.

**F.** Protection of the Public and Federal Employees: Work shall not be performed in any area occupied by the public or Federal employees unless the Contractor takes adequate steps for the protection of the public and Federal employees, and work is specifically permitted by the contract/COTR/jurisdiction Superintendent. Comply with requirements of ANSI A10.34.2001.

**G.** Electrical Systems: In addition to complying with the referenced standards in this Section, refer to Division 1 requirements for "Temporary Facilities and Controls." Provide compliant electrical supply, overload/ground fault protection, lighting, and signage/notification systems. Ensure that arrangements and installations accommodate the Architect's lockout/tagout procedures.

**H.** Mechanical Systems: Mechanical systems and equipment, and the components thereof, will be arranged and installed to provide ready accessibility and ease of lock/tag application during lockout/tagout procedures for AOC employees, post construction.

**I.** Fences & Barricades: The work area shall be fenced, barricaded, or otherwise segregated from the public or building occupants to prevent unauthorized entry into the work area. Fence elements shall be installed in such a manner as to overcome the negative or hazardous effects of wind and weather typical to the region. The use of barbed wire is prohibited unless requested in writing by the Architect.

**J.** Pedestrian Access Ways: All interior and exterior paths of travel established for pedestrian circulation within and around a construction site shall meet the requirements of 28 CFR Part 36 (*ADAAG*), Appendix A (Standards for Accessible Design), Articles 4.3 through 4.5; when a path is changed to accommodate work, the Contractor shall also provide directional signage in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), 2003. All paths shall be maintained clear and level, without obstruction. Any proposed exceptions to these requirement must be approved in writing by the Architect prior to construction.

1. Lighting: All interior/exterior access ways, both permanent and temporary, shall be provided with a uniform minimum lighting level of 3 footcandles (fc) at the walking

surface, in accordance with 29 CFR 1926.56(a), Table D-3 - *Minimum Illumination Intensities in Foot-Candles*.

**K.** Alternate Precautions: When the nature of the work prevents isolation of the work area and the public or building occupants may be in or pass through, under or over the work area, alternate precautions such as the posting of signs, warning lights, the use of signal persons, the erection of barricades or similar controls around particularly hazardous operations shall be approved and used.

**L.** Work Over Thoroughfares: When work is to be performed over a public thoroughfare such as a sidewalk, lobby, or corridor, the thoroughfare shall be closed, if possible, or other precautions taken such as the installation of screens or barricades. When exposure to falling objects exists, as during the erection of building walls or during demolition, special protection of the type detailed in 29 CFR 1910/1926 shall be provided.

**M.** Temporary Construction Barriers: Temporary construction barriers, partitions which cover a hole in a rated fire wall, protect occupants from noise or vibration, or separate the construction from public access and exit corridors shall be erected floor-to-ceiling, wall-to-wall, and shall remain in place for the duration of the contract. The minimum construction standards for these temporary barriers shall be metal studs, anchored top and bottom at a maximum spacing of 16 inches (406 mm) on-center, and covered with a minimum of one layer of ½-inch gypsum wallboard.

**N.** Dust and Fume Control Measures: Work performed adjacent to occupied areas shall be done within dust control barriers (generally constructed of polyethylene sheeting or other barriers as approved by the Architect). To the extent feasible, maintain the work environment at a negative pressure differential with the adjoining occupied areas. The use of fume and odor producing products and materials shall be done in such a manner, or at such a time as to minimize impact on building occupants. Provide measures to minimize migration of dust, fumes, gases, and similar affects into the adjacent areas. Ensure that adequate ventilation is provided to work areas in conformance with OSHA regulations.

**O.** Roof Work: During the performance of roofing work, employees will be protected as required by the OSHA standards contained in 29 CFR 1926 - subpart M "Fall Protection."

**P.** Removal of Fences and Barricades: Fences and barricades shall be removed upon completion of the project, in accordance with local ordinance and to the satisfaction of the Contracting Officer or his/her representative(s).

**Q.** Completion of Work: Do not create or leave hazards unabated (e.g., open or absent electrical panels, unmarked circuit breakers/fuses, faceplates missing from receptacles, open manholes, un-barricaded trenches/excavations, etc.).

**-- End of Section --**

# PART 3 – PROJECT PROGRAM

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    A10 FOUNDATIONS
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DONT USE THIS PAGE

# Project Program

## E85 Fuel Pumping Station Installation
## Project No.: CG07001

Architect of the Capitol
Washington, DC

**July 16, 2007**

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# 1. PROJECT DESCRIPTION

The Architect of the Capitol (AOC) seeks to install an E85 pumping station fed by a 10,000 gallon double-walled fiberglass underground storage tank at their existing fueling station at 14 E Street, SE in Washington, DC. The project will include installation of a new underground storage tank, new pumping islands, connection to existing monitoring and accounting systems, site lighting, pavement and curb cuts, and required containment systems.

# 2. PROJECT OBJECTIVES

## 2.1 Mission Statement

The AOC anticipates the use of this station by approximately 200 Congressional vehicles and expects to dispense as much as 80,000 gallons of E85 fuel annually.

## 2.2 Facility Function

At the completion of the construction phase of the project the AOC will have a new 10,000 gallon double-walled fiberglass underground storage tank used to dispense E85 fuel. A new traffic pattern will have been developed and put in place to manage the anticipated flow of traffic through the station. The new fueling system, along with the current fueling system, will be monitored by the current Veeder-Root and Petro Vend accounting systems. All fueling stations will be well lighted without disturbing nearby residents. A new trench drain system will have been installed and designed to meet all D.C., AOC, and other U.S. Government regulations. All road and sidewalk surfaces will have been properly laid out and built to meet all local codes. All new equipment installed under this project will have been designed/labeled to dispense E85 fuel. Proper signage will have been installed to direct users to the proper fuel types desired.

## 2.3 Project Specific Priorities

### 2.3.1 Minimize Disruption

The fueling station is next to a residential neighborhood, and care shall be taken to minimize disruption to the neighbors both during construction and by design for the operation of the completed facility.

### 2.3.2 Fire Marshal Coordination

During design, the AOC fire marshal shall be consulted to ensure that all fire protection and fuel containment issues have been properly addressed for the facility. After construction, the facility must pass all required fire marshal inspections. While the DC fire marshal has no jurisdiction, and will not perform any inspections of the facility, DC fire fighters will be the first responders to an incident at the facility. Near the conclusion of the design, the designers shall conduct a meeting with the DC fire marshal's office to keep them apprised of the project.

# 3. SITE ANALYSIS

## 3.1 Existing Site Conditions

The site location for the new E85 Fuel Pumping Station is located in the Capitol Hill Complex, North of E Street, SE, between South Capitol Street and New Jersey Avenue. The site is bounded on the North by a chain link fence, on the South by E Street, on the east by a concrete driveway, and on the west by an existing building. Townhouses surround the site on either side along E Street, SE. The existing diesel tank shall remain undisturbed and operational during construction.

A recent Topographic survey and a Geotechnical report for the site have been prepared and are included in Part 6 of this RFP.

## 3.2 Site Development Requirements

The general location of the new facilities is indicated on the Site Layout Plan (C101) and Enlarged Site Plan (C102) drawings included with the Attachments in Part 6 of this RFP.

Minor demolition of curb and sidewalk is required to accommodate two new entrances to the Fuel Pumping Station site. Demolition of asphalt will be required where excavation is required for installation of the E85 tank.

A 10,000 gallon E85 tank will be installed underground. Two new dispenser islands, each having an E85 dispenser and a gasoline dispenser as well as an access key pad, will be installed on the site. One will be located directly above the existing 4,000 gal gasoline tank and one will be located directly above the E85 tank. The surface above the tank will be concrete and the concrete surface will extend to surround the area adjacent to the dispensers at grade. Bollards will be installed around the island to protect it from vehicular damage.

Other site work includes, but is not limited to, manhole relocation and utility installation/extension to support the facility. Traffic flow patterns and fuel islands were configured to maximize access and circulation for large passenger cars. Trucks will be able to access the fuel pump dispenser by backing into the site, similar to what is required currently.

# 6. ENGINEERING SYSTEMS REQUIREMENTS

# A10 FOUNDATIONS

## SYSTEM DESCRIPTION

Provide foundations for the dispenser station, E85 fuel tank, light poles, and miscellaneous site structures in accordance with IBC 2003. Foundation shall be designed to suit subsurface conditions, and shall be capable of transmitting all loads to suitable soil.

In addition, comply with the following loading criteria:

Live Loads

Refer to UFC 3-310-01. Live loads for occupancies or uses not provided in UFC 3-310-01 shall be as follows:

Occupancy or Use: All paved areas accessible to vehicles

Uniform Live load: Accommodating the load of an AASHTO HS 20 fuel truck, and not less than 250 pounds per square foot.

Concentrated Live Load: Accommodating the load of an AASHTO HS 20 fuel truck, and not less than 8000 pounds applied on an area of 20 $in^2$.

Dead Loads

Design the foundation to support the actual weight of materials, including soil overburden, weight of tank, and tank contents at maximum capacity.

Wind Loads

Wind design for foundations of all above-grade structures, including light poles, shall be based on Exposure B.

Importance Factors

Use Occupancy Category II in Table 1 of UFC 3-310-01 for determining Importance Factors for seismic and wind design of above-grade structures, including light poles. The corresponding Seismic Use Group is I.

Lateral Pressure Loads

Design the tank, foundation, and other subgrade components to resist lateral soil pressures as stipulated in the appended geotechnical report.

Foundation Design for allowable bearing pressure shall be based on a full tank of E85 fuel, and all other applicable loads as specified.

Foundation Design for hydrostatic uplift forces shall be conducted if the tank is wholly or partially located below the water table. The appended geotechnical report provides the approximate location of the water table. Design for hydrostatic uplift shall be based on an empty tank, all applicable dead loads, and no live loads.

Settlement

Settlement shall be limited to published manufacturer's tolerances of the selected tank infrastructure.

## GENERAL SYSTEMS REQUIREMENTS

A preliminary geotechnical report containing subsurface soil information is appended to this report.

The Contractor may commission the services of a geotechnical engineer registered as a Professional Engineer to provide supplementary information to the appended report.

A site-specific seismic ground motion study is not required.

Engage a registered Professional Engineer to provide inspection of excavations and soil/groundwater conditions throughout construction.

## A1010 FOUNDATION SUPPORT OF BURIED TANK

The E85 fuel tank may be supported directly on natural soil deposits. The tank may not be supported on Fill soils. The Contractor shall provide calculations based on the design criteria listed above to demonstrate that all applied loads fall within the recommended allowable bearing capacity of the soil. Refer to the appended geotechnical report for approximate locations of natural soil deposits.

Alternatively, the fuel tank may be supported on a subgrade reinforced concrete slab that bears on natural soil deposits. The slab may not be supported on Fill soils. The design of the slab thickness, slab extents, and connections to tank shall be based by the design criteria listed above. Provide calculations based on the design criteria listed above to demonstrate that all components can safely resist the applied loads, and that the recommended allowable bearing capacity of the soil is not exceeded.

## A1030 SLAB ON GRADE

Provide minimum 4" reinforced concrete bearing pad on grade at dispenser stations. Concrete pad shall have a continuous turn-down detail around the perimeter.

## A1040 LIGHT POLE FOOTINGS

Provide a round concrete pedestal foundation for all stand-alone light poles.

## A1050 BOLLARDS

Provide bollards in accordance with section G20 of this RFP. Comply with the design criteria for vehicle barriers in IBC Section 1607.7.

**--End of Section--**

# 6. ENGINEERING SYSTEMS REQUIREMENTS

# G10 SITE PREPARATION

## SYSTEM DESCRIPTION

The site preparation system consists of demolition, relocation, and earthwork, necessary to ready the site for other work associated with the project.

## GENERAL SYSTEM REQUIREMENTS

Develop the project site and perform all off-site work necessary to meet the requirements of the project, local codes, reference standards, technical specifications and performance criteria.

A topographic survey of the existing site was performed. Prior to starting work, physically verify the location of all existing utilities and obtain all additional survey data required to provide a quality final design.

Subsurface soil information, including a geotechnical report, is included in Part 6 of this RFP. The Contractor may commission the services of a geotechnical engineer registered as a Professional Engineer to provide supplementary information to the appended report.

Engage a registered Professional Engineer to provide inspection of excavations and soil/groundwater conditions throughout construction.

Unless otherwise noted, provide new facilities at the locations indicated on the drawings in another part of this RFP.

Minimize the impact of construction activity on operations and neighboring facilities.

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work.

Coordinate and obtain the AOC's approval for proposed haul route(s), work site access point(s), employee parking location(s) and material laydown and storage area(s).

Refer to Site Analysis and Building Requirements Sections for additional site preparation functional program information.

## G1010 SITE DEMOLITION & RELOCATIONS

To accommodate construction of new vehicle entrances to the site, concrete curb and sidewalk will be demolished as necessary. Also, an electric manhole will need to be adjusted to match the proposed grade of the driveway entrance. The section of chain link fence along the South site boundary will be removed as necessary for the proposed entrances.

### G101001 ABOVEGROUND SITE DEMOLITION

Demolish existing curb, sidewalk, and chain-link fence as necessary to accommodate the two new driveways to the site as indicated on the drawings in Part 6.

Demolish additional site features as required to facilitate project construction.

Preserve the following aboveground site elements: diesel fuel tank, fence.

## G101002 UNDERGROUND SITE DEMOLITION

Preserve the following underground site elements: utilities, and 4,000-gallon gasoline tank. Remove any old structures, foundations, or portions thereof as required during excavation.

## G101003 UTILITY RELOCATION

Comply with the requirements of the utility provider concerning the utility relocation: Electric. Relocate additional utilities as required to facilitate project construction.

## G101004 SITE CLEANUP

Remove rubbish and debris from Fuel Pumping Station site daily. Do not allow accumulations on site. Store materials that cannot be removed daily in areas specified by the Government.

# G1020 SITE EARTHWORK

## G102001 GRADING

Elevations of new facilities shall match existing grade.

# G1030 1.1 EXCAVATION

Perform excavation of contaminated material in accordance with applicable Federal, State and local codes and requirements.

# G1030 1.2 DISPOSAL

All waste materials shall become the property of the Contractor and shall be transported, disposed of and/or recycled in accordance with applicable Federal, State and local codes and requirements.

**--End of Section--**

# 6. ENGINEERING SYSTEMS REQUIREMENTS

# G20 SITE IMPROVEMENTS

## SYSTEM DESCRIPTION

The site improvements system consists of pavements and pavement related features, landscaping and other exterior site development work related to this project.

## GENERAL SYSTEMS REQUIREMENTS

Provide site improvements as required to make a useable facility that meets functional and operational requirements, incorporates all applicable physical security requirements and blends into the existing environment.

Provide site improvements in conformance with applicable requirements of the Uniform Federal Accessibility Standards.

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work, including, but not limited to, District of Columbia Water and Sewer Authority (DC WASA) and DC Department of Health – Watershed Protection Division.

Provide improvements as required to conform to all applicable physical security requirements.

Minimize the impact of construction activity on operations and neighboring facilities.

Locate new site improvements at locations indicated on the drawings in another part of this RFP. If specific locations are not provided, site the improvements to develop appropriate and positive relationships with other facilities and to conform to existing development patterns.

Refer to Site Analysis for additional site improvement functional program information.

## G2010 ROADWAYS

Provide asphalt or concrete driveway entrances to the site where indicated on the drawings in Part 6 of this RFP. Gravel pavement may not be used. Concrete pavement will be required surrounding the proposed Fuel Islands.

Provide roadways, as required, to allow for safe, convenient and logical circulation, while discouraging through traffic. The design of pavements shall take into consideration the anticipated daily traffic over the life of the project as well as the existing soil conditions at the site. A traffic study should be performed to support design layout and a copy shall be provided to the AOC.

Provide other roadway improvements including markings and signage to direct traffic through site and to appropriate fuel pump.

### G201001 CURBS & GUTTERS

Provide curb and gutter to tie into adjacent facilities.

### G201002 MARKING & SIGNAGE

Provide pavement markings and signage as appropriate to direct traffic through site and to appropriate fuel pump dispensers.

Provide temporary pavement markings and signage throughout construction to meet phasing requirements indicated in the project program. Provide temporary signage in accordance with the MUTCD.

## G201002 GUARDRAILS & BARRIERS

Provide bollards around the proposed Fuel Island as required to protect the island from vehicular damage.

## G2020 PEDESTRIAN PAVING

Provide a network of Portland cement concrete sidewalks, separated from, but connected to vehicular circulation systems, to allow pedestrian circulation between various elements of the project.

## G2030 SITE DEVELOPMENT

## G203001 SIGNAGE

Provide signage in accordance with the AOC guidelines.

**--End of Section--**

# 6. ENGINEERING SYSTEMS REQUIREMENTS

# G30 SITE CIVIL/MECHANICAL UTILITIES

## SYSTEM DESCRIPTION

The site civil/mechanical utility systems include spill containment systems, fuel distribution systems and associated appurtenances.

The site mechanical utility system consists of all piping and appurtenances for liquid fuel, including all accessories and devices as necessary and required for a complete and usable system.

## GENERAL SYSTEM REQUIREMENTS

Develop the site to provide spill containment, and fuel distribution services that meet the requirements of each applicable regulatory agency that governs and issues permits for the construction and operation of these systems.

Provide each system complete and ready for operation.

Physically verify the location of existing above and below ground utilities prior to starting work.

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. Copies of all permits, permit applications shall be forwarded to the Contracting Officer.

Minimize the impact of construction activity on facility operations and neighboring facilities.

Utility connection points are indicated on the drawings in another part of this RFP. Obtain final approvals from the Contracting Officer for all utility connection points associated with this work.

Coordinate with the local utility providers and pay any fees or charges required to connect to their utility.

Refer to Site Analysis Section for additional site civil/mechanical utilities information.

Provide all required fittings, connections and accessories required for a complete and usable system. All equipment shall be installed per the criteria of RFP Section G30 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "shall".

## G3030 STORM SEWER

The new spill containment system is an extension of the existing storm sewer system, which shall include a trench drain and oil/water separator. The existing storm sewer system serving the project site is owned by the District of Columbia Water and Sewer Authority. Provide the new spill containment system and connections to the existing storm sewer system in accordance with the utility provider's requirements; and the state stormwater management laws and regulations; whichever is more stringent.

Provide connection to the existing storm sewer collection system at location approved by the AOC. Confirm that the existing outfall has adequate capacity to receive the additional storm water flow generated by the project.

Vehicle wash areas are not to be provided.

## G303001 STORM SEWER PIPING

Provide storm sewer piping connecting trench drain with the oil/water separator. See drawings in Part 6 of this RFP for conceptual layout.

## G303002 STORM SEWER STRUCTURES

Provide a trench drain separating fueling facility from adjacent garage on the west. See drawings in Part 6 of this RFP for conceptual layout.

## G303090 OTHER STORM SEWER

An oil/water separator will be required. Provide a 250 gallon oil/water separator to handle AOC requirement of containing fuel spills or leaks.

The petroleum concentration in the effluent from the oil/water separator shall not exceed 10 mg/L. Remove all free oil droplets equal to or greater than 20 microns. The effluent of the oil/water separator shall discharge to the storm sewer system.

# G3060 FUEL DISTRIBUTION

All piping, equipment, and accessories for use with gasoline shall be UL-listed. All piping, equipment, and accessories for use with E85 shall be UL-listed for E85 use, if available. As UL-listing for E85 is not currently available at the writing of this RFP, if UL-listings are still not available at the time of installation, then all piping, equipment, and accessories shall be certified by the manufacturer as specifically manufactured for use with E85 fuel.

## G306001 LIQUID FUEL DISTRIBUTION PIPING

Provide fiberglass or steel fuel piping system manufactured for use with E85 fuel in accordance with NFPA 30 and 30A. Provide steel fuel piping system for gasoline in accordance with NFPA 30 and NFPA 30A.

## G306003 LIQUID FUEL STORAGE TANKS

Provide fiberglass double-wall below ground storage tank manufactured for E85 fuel in accordance with NFPA 30 and 30A. Provide a fuel pump manufactured for E85 located at, in or near the storage tank in accordance with NFPA 30A. Provide system which is compatible with Veeder-Root monitoring system and Petro Vend accounting system.

Option No. 1 requires contractor to also install a new pump for the existing gasoline fuel system underground, in, at or near the gasoline fuel tank. This gasoline fuel pump shall be configured in a similar manner to the E85 fuel pump.

## G306004 LIQUID FUEL DISPENSING EQUIPMENT

Provide two aboveground dispensers, each with two hoses and nozzles, capable of dispensing fuel simultaneously, manufactured for E85 fuel for dispensing E85. The E85 dispensers shall not include fuel pumps, because the pump will be located at the tank. Provide two aboveground dispensers, each with two hoses and nozzles, capable of dispensing fuel simultaneously, for gasoline. The existing gasoline dispenser may be considered for re-use if it can be relocated and maintained in good working order. In the base bid, the gasoline dispensers shall include fuel pumps, while under Option No. 1, they shall not, because the pump will be located at the tank. Fuel dispensing equipment shall comply with NFPA 30A.

**--End of Section--**

# 6. ENGINEERING SYSTEMS REQUIREMENTS

# G40 SITE ELECTRICAL UTILITIES

## SYSTEM DESCRIPTION

The site electrical utility system consists of all power from the existing distribution system point of connection including all connections, accessories and devices as necessary and required for a complete and usable system.

## GENERAL SYSTEM REQUIREMENTS

Provide an Electrical System complete in place, tested and approved, as specified throughout this RFP, as needed for a complete, usable and proper installation. All equipment shall be installed per the criteria of RFP Section G40 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "shall".

## G4010 ELECTRICAL DISTRIBUTION

Connect to the existing 208Y/120 volt three phase, four wire, 60 Hertz electrical power system in the adjacent E Street Garage. Provide a new panel to serve all new loads. The connection point shall be at the existing service entrance and extended to the project site underground.

Connect new fuel pump system to existing emergency power shutoff located on the exterior of the E Street Garage.

The available fault current at the point of connection shall be assumed to be an infinite bus.

Electrical wiring and equipment shall be as required by NFPA 70 and NFPA 30A. Provide exterior telephone labeled with instructions for notifying emergency personnel as required by NFPA 30A.

### G401006 UNDERGROUND ELECTRIC CONDUCTORS

Provide a 600 volt secondary underground electrical power distribution systems to meet the connection requirements as indicated in paragraph G4010 "Electrical Distribution".

### G401007 DUCTBANKS, MANHOLES, HANDHOLES AND RACEWAYS

Provide a direct buried underground power distribution system.

### G401008 GROUNDING SYSTEMS

Provide a complete grounding system for the electrical power distribution system.

## G4020 SITE LIGHTING

Provide site lighting for the pumping stations including underground distribution, handholes, grounding, poles, fixtures and controls as required for a complete and usable system.

### G402001 EXTERIOR LIGHTING FIXTURES AND CONTROLS

Provide site lighting that will provide the system user with adequate illumination to dispense fuel safely. Follow IESNA recommendations for lighting levels.

The lighting shall be designed in such a way that the side glare from the addition of lights will not disrupt nearby residents. Shield fixtures so that their maximum luminance is not directed at neighboring residents, and minimize light trespass beyond the property boundaries. Provide metal halide type lighting fixtures, complete with lamps.

This design shall provide a system of dual lighting at each station by different circuits so that the failure of one circuit will not place any equipment in the dark.

Provide an automatic lighting control system for exterior lighting fixtures utilizing lighting contactors, time switches, motion sensors, and photocell switches such that lighting will automatically turn "ON" when the area is occupied and turn "OFF" 30 minutes after the user has left. Motion sensor is to be one that is adjustable for motion and for time.

## G402004 LIGHTING POLES

Provide steel complete with foundations for site lighting.

## G402005 UNDERGROUND ELECTRIC CONDUCTORS

Provide a complete underground distribution system for all site lighting systems.

## G402006 DUCTBANKS, MANHOLES AND HANDHOLES

Provide a direct buried underground system including conduits and handholes to meet the connection requirements indicated in paragraph G4020 "Site Lighting".

## G402007 GROUNDING SYSTEMS

Provide a complete grounding system for all site lighting systems.

# G4090 OTHER SITE ELECTRICAL UTILITIES

Provide connections to the following special systems:

Veeder-Root monitoring system
Petro Vend accounting system

Provide as Option No. 2 a sustainable design feature related to the addition of lighting to the station. This option may incorporate photo voltaic (PV) on the roof of the garage that feeds a battery backup system sized to provide 12 hours of continuously powered lights at the pumping stations. This design will be installed in a way that provides power for lights at the pumping stations but only requires a minimum of interface to maintain.

Provide other site electrical utility systems consisting of including all conduit and wiring, underground structures, termination equipment, and grounding systems as required for a complete and usable system.

## G409001 GENERAL CONSTRUCTION ITEMS (ELECTRICAL)

Provide General Construction Items (Electrical) including, but not necessarily limited to, all connections, fittings, boxes and associated equipment needed by this and other sections of this RFP as required for a complete and usable system.

**-- End of Section --**

# PART 4 – PERFORMANCE TECHNICAL SPECIFICATIONS

A10 FOUNDATIONS
G10 SITE PREPARATIONS
G20 SITE IMPROVEMENTS
G30 SITE CIVIL/MECHANICAL UTILITIES
G40 SITE ELECTRICAL UTILITIES
Z10 GENERAL PERFORMANCE TECHNICAL SPECIFICATION

# SECTION A10

# FOUNDATIONS

## A10 GENERAL

### A10 1.1 - DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification.*

#### A10 1.1.1 - Standards

IBC 2003

### A10 1.2 - GENERAL REQUIREMENTS

#### A10 1.2.1 - Earthwork

Refer to section G20 of this RFP.

#### A10 1.2.2 - Geotechnical Report

##### A10 1.2.2.1 - Contractor-provided Geotechnical Engineer

The Contractor must provide a geotechnical engineer. The geotechnical engineer shall be experienced with soil conditions in the region where the project site is located. The geotechnical engineer shall evaluate the RFP data, and evaluate whether an additional subsurface exploration is required, and, if so, prepare a Geotechnical Report.

##### A10 1.2.2.2 - Subsurface Soils Information

Subsurface soil information is included for the contractor's information only, and is not guaranteed to fully represent all subsurface conditions. The data included in this RFP is intended for proposal preparation and preliminary design only. Contractor may perform, at his expense, supplementary subsurface exploration, investigation, testing, and analysis as his Designer of Record and geotechnical engineer deem necessary for the design and construction of the foundation system.

All work by the Contractor-provided Geotechnical Engineer at the project location shall be coordinated with the Contracting Officer and shall not interfere with facility operations. If supplementary geotechnical investigations are performed, prior to the Foundation Work Design submittal, include a Contractor Geotechnical Report (an Adobe Acrobat PDF version on CD and two printed copies) for review and record keeping purposes. The report shall become the property of the Government. Geotechnical reports generated during construction

shall be provided to the Contracting Officer (an Adobe Acrobat PDF version and two printed copies) for record keeping purposes.

**A10 1.2.2.3** – Optional Contractor-Provided Geotechnical Report

The contractor may submit a written Geotechnical report based upon Government-provided subsurface investigation data and all additional field and laboratory testing accomplished at the discretion of the Contractor's Geotechnical Engineer. Contractor may elect to use the design values in the preliminary geotechnical report. Any supplementary Geotechnical Report shall include the following:

a. The project site description, vicinity map and site map.

b. Results of all the field and laboratory testing, whether Government or Contractor-provided.

c. Engineering analysis, discussion and recommendations addressing:

1. Settlement
2. Bearing Capacity
3. Foundation selection and construction considerations, dimensions, and installation procedures.
4. Site preparation (earthwork procedures and equipment), compaction requirements, building slab preparation (as applicable), soil sensitivity to weather and equipment, and groundwater influence on construction
5. Sheeting and shoring considerations, as applicable
6. Pavement design parameters, actual or assumed, including recommended thicknesses and materials, be for design or for proposed modifications to the RFP provided pavement design only
7. Calculations to support conclusions and recommendations

The Geotechnical Report shall be signed by a registered Geotechnical Engineer.

The submitted report shall be accomplished by a cover letter identifying any recommendations of the report proposed to be adopted into the design which are interpreted by the Contractor as either conflicting with or being modifications to the Geotechnical or Pavement related requirements of the RFP.

**A10 1.2.2.4** – Geotechnical Site Data required in Design Drawings

The Contractor's final design drawings shall include the Government-provided subsurface data presented in the RFP as noted below, as well as any additional borings and laboratory test result data performed by the Contractor.

a. Logs of Borings and related summary of laboratory test results and groundwater observations.

b. The locations of all borings shall be indicated on the drawings. The applicable design drawings shall be revised to reference the Contractor's Geotechnical Report as being a basis for design.

**A10 1.2.4** - Pile Driver Analyzer (PDA)

Not used.

**A10 1.3** - PERFORMANCE VERIFICATION AND ACCEPTANCE TESTING

Verification of satisfactory construction and system performance shall be via Performance Verification Testing, as detailed in this section of the RFP.

**A10 1.3.1** - Earthwork

Perform quality assurance for earthwork in accordance with IBC Chapter 17. If a registered Professional Engineer is required to provide inspection of excavations and soil/groundwater conditions throughout construction, the Engineer shall be responsible for performing pre-construction and periodic site visits throughout construction to assess site conditions. The Engineer, with the concurrence of the contractor and the Contracting Officer, shall update the excavation, sheeting, shoring, and dewatering plans as construction progresses to reflect actual site conditions and shall submit the updated plan and a written report (with professional stamp) at least monthly informing the Contractor and the Contracting Officer of the status of the plan and an accounting of Contractor adherence to the plan; specifically addressing any present or potential problems. The Engineer shall be available to meet with the Contracting Officer at any time throughout the contract duration.

**A10 1.3.2** - Piles

Not used.

**A10 1.4** - CONSTRUCTION SUBMITTALS

Contractor shall submit to the Designer of Record (DOR) product submittals on all materials or systems installed at the site, in addition to the following reports and tests, if required for the project:

(Optional) Contractor-provided geotechnical report

Controlled fill or backfill material tests

**A1010 STANDARD FOUNDATIONS**

**A1010 1.1** - SHEETING AND SHORING

Provide sheeting and shoring as required. Sheeting and shoring plans shall be signed by the Contractor's geotechnical/structural engineer.

**A1010 1.2** - TERMITE CONTROL

Not used.

**A101001 WALL FOUNDATIONS**

Not used.

**A101002 PILE CAPS**

Not used.

**A1020 SPECIAL FOUNDATIONS**

Not used.

**A102001 PILE FOUNDATIONS**

Not used.

**A102002 CAISSONS**

Not used.

**A102004 DEWATERING**

Dewater site for foundation construction as required by soil conditions and local subsurface waters and surface water, including rainfall, and considering any potential adverse impact, including settlement, on adjacent facilities. Dewatering requirements and methods shall be established by the Contractor's geotechnical/structural engineer, based on his subsurface exploration and investigation.

**A102005 RAFT FOUNDATIONS**

Not used.

**A102006 PRESSURE INJECTED GROUTING**

Not used.

**A102090 OTHER SPECIAL FOUNDATIONS**

Not used.

**A1030 SLAB ON GRADE**

**A103001 STANDARD SLAB ON GRADE**

Not used.

**A103003 TRENCH DRAINS**

Trench drains shall be constructed of reinforced concrete with water proof joints and seals to prevent ground water infiltration.

## A103004 PITS AND BASES

Pits and bases shall be constructed of reinforced concrete with water proof joints and seals to prevent ground water infiltration.

## A103005 FOUNDATION DRAINAGE

Not used.

**-- End of Section --**

# SECTION G10

# SITE PREPARATION

## G10 GENERAL

### G10 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification.*

#### G10 1.1.1 Industry Standards and Codes

Refer to UMRL for reference designation identification.

### G10 1.2 PERFORMANCE VERIFICATION AND ACCEPTABLE TESTING

Compliance with the requirements will be determined by a review of the design and construction submittals and by field inspection.

Verification of satisfactory earthwork performance shall be via field testing.

### G10 1.3 CONSTRUCTION SUBMITTALS

Submit in accordance with Section Z10, *General Performance Technical Specification.*

Prepare demolition plan in accordance with AOC Design Manual and Design Standards.

### G10 1.4 GEOTECHNICAL DATA

A Geotechnical Report is included in Part 6 of this RFP. For additional requirements see Section A10 1.2.2 of this RFP.

## G1010 SITE DEMOLITION & RELOCATIONS

### G1010 1.1 GENERAL

Demolition work shall include the demolition, removal and legal disposal of existing construction debris as required to accommodate the new construction. The Contractor shall take care to prevent damages to existing utilities, construction and materials not scheduled for demolition, repair or replacement, and shall repair damages to the construction and materials to the satisfaction of the AOC and at no additional cost to the AOC.

### G1010 1.2 AUTHORIZATION

Do not begin demolition until the Demolition Plan has been approved by and authorization is received from the AOC.

### G1010 1.3 TITLE TO MATERIALS

Whenever possible, all features demolished shall be salvaged or recycled in lieu of being disposed of as waste in a landfill. Existing features to be demolished which are not salvageable or reused, shall become the property of the Contractor and shall be removed from project site. The Government will not be responsible for the condition, loss of, or damage to, such property after contract award. Materials and equipment shall not be viewed by prospective purchasers or sold on the site.

**G1010 1.4** REUSE OF MATERIALS AND EQUIPMENT

Remove and store materials and equipment to be reused or relocated to prevent damage, and reinstall as the work progresses.

**G1010 1.5** SALVAGED MATERIALS AND EQUIPMENT

Salvage materials and equipment that are to be removed by the Contractor and that are to remain the property of the Government, and deliver to a storage site on the station in accordance with instructions of the Contracting Officer.

**G101001 ABOVEGROUND SITE DEMOLITION**

**G101001 1.1** DUST AND DEBRIS CONTROL

Prevent the spread of dust and debris to occupied portions of a building or on pavements and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water for dust control if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Sweep pavements as often as necessary to control the spread of debris that may result in foreign object damage potential to aircraft.

**G101001 1.2** PROTECTION

**G101001 1.2.1** Traffic Control

Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights. Provide temporary traffic control in accordance with the FHWA's Manual on Manual Traffic Control Devices (MUTCD).

**G101001 1.2.2** Existing Work

Protect existing work that is to remain in place, be reused, or remain the property of the AOC. At no additional expense to the government, repair all items that are damaged during performance of the work to their original condition, or replace with new. Do not overload pavements to remain.

**G101001 1.2.3** Noise Pollution

Make the maximum use of low-noise emission products, as certified by the EPA.

**G101002 1.1** PAVING AND SLABS

Remove concrete and asphaltic concrete paving and slabs as required for construction of project. Remove the existing aggregate base in areas to receive new pavement to the depth of the proposed pavement section below new finish grade. Remove the existing aggregate base in areas not to receive new pavement to a depth of 8 inches below existing adjacent grade. Provide neat sawcuts at

limits of pavement removal; protect sawcuts so that new pavement will butt against the existing without feathering.

**G101002 UNDERGROUND SITE DEMOLITION**

**G101003 UTILITY RELOCATION**

Repair relocated items that are damaged or replace damaged items with new undamaged items as approved by the AOC and at no additional expense to the AOC.

**G101004 SITE CLEANUP**

Remove rubbish and debris from the station daily; do not allow accumulations inside or outside the building(s) or on pavements. Store materials that cannot be removed daily in areas specified by the AOC.

**G1020 SITE EARTHWORK**

**G1020 1.1** GENERAL

This section includes the design and construction requirements for earthwork and grading related to construction of the roadways, parking, paved areas and other related sitework. Refer to Section A10 for earthwork related to construction of structures, including building, footings, foundations, retaining walls, slabs, tanks, and utility appurtenances.

**G102001 GRADING**

**G102001 1.2** SITE GRADING

The Contractor shall preserve natural topographic features to minimize the impact on the existing drainage patterns at and adjacent to the site.

**G102001 1.3** FINISHED SURFACES

Finish grading shall provide drainage towards new and existing drainage features. Finish grading shall not result in low spots that hold water or that direct runoff towards new or existing facilities and/or site amenities.

**G102002 COMMON EXCAVATION**

The Contractor shall preserve natural topographic features to minimize cut and fill requirements. All unsuitable material and surplus excavation shall become the property of the Contractor and shall be disposed of in accordance with Federal, State and Local Regulations.

**G102003 ROCK EXCAVATION**

Requests for additional compensation shall not be made by the Contractor for degree of hardness or difficulty encountered in removal of material. All unsuitable material and surplus excavation shall

become the property of the Contractor and shall be disposed of in accordance with Federal, State and Local Regulations.

## G102004 FILL & BORROW

### G102004 1.1 SOURCES

Where sufficient topsoil and satisfactory materials are not available on the project site, provide suitable borrow materials.

### G102004 1.2 UNSATISFACTORY SOIL MATERIALS

Remove unsatisfactory soil materials from the site in accordance with the Project Program and replace with in accordance with Federal, State and Local Regulations.

## G102005 COMPACTION

Provide compaction in accordance with the recommendations of the Geotechnical Report included in this RFP, as applicable.

## G102006 SOIL TREATMENT

### G102006 1.2 RODENT AND VEGETATION CONTROL

Prevent and eliminate standing water.

## G102007 SHORING

Provide sheeting, shoring, bracing, cribbing and underpinning in accordance with the applicable Federal, State and local codes and requirements.

Provide protection of existing structures.

## G102008 TEMPORARY DEWATERING

The design of the temporary dewatering system shall account for soil conditions, rainfall, fluctuations in the groundwater elevations and the potential settlement impact on adjacent facilities due to dewatering. While the excavation is open, the water level shall be maintained continuously, at least 1.0 foot below the working level.

French drains, sumps, ditches or trenches will not be permitted within 3 feet of the foundation of any structure without written approval of the AOC.

## G102009 TEMPORARY EROSION & SEDIMENT CONTROL

### G102009 1.1 TEMPORARY EROSION & SEDIMENT CONTROL

Develop and implement temporary erosion and sediment control measures and other Best Management Practices (BMPs) prior to or in conjunction with commencement of earthwork in accordance with the state Erosion and Sediment Control Laws and Regulations. Remove all non-permanent erosion control measures after vegetation is fully established.

**G102009 1.2** MAINTENANCE

Maintain temporary erosion control measures in accordance with state Erosion and Sediment Control Laws and Regulations throughout the project until areas are fully stabilized.

**-- End of Section --**

Provide thickened edge expansion joints at the intersection of two rigid pavements. Use preformed joint filler, ASTM D 1751. Filler must be compatible with joint sealer material. Preformed joint filler shall be securely held in position during concreting operations.

**G201003 1.2.2** Isolation Joints

Provide thickened edge isolation joints by placing a ½-inch preformed joint filler (ASTM D 1751) around each structure that extends into or through the pavement before concrete is placed at that location.

**G201003 1.2.3** Contraction Joints

Joint lines shall be sawed within specified tolerance, straight, and extend for width of transverse joint, and for entire length of longitudinal joint.

**G201003 1.2.4** Construction Joints

If an emergency stop occurs remove the concrete back to location of transverse joint and install a construction joint.

**G201003 1.2.5** Preformed Compression Seals

Use performed compression seals in areas where silicone joint sealant does not perform, such as areas subject to water inundation, blasts, or constant/repeated fuel spillage.

ASTM D 2628. ASTM D 2835, for lubricant.

**G201003 1.3** PRIME COAT

Use prime coat in accordance with the DDOT Specifications. Prime coat shall be emulsified asphalt materials.

**G201003 1.4** TACK COAT

Tack coat is required for bituminous pavement overlays and on vertical cut faces of pavement patches. Tack coat shall be in accordance with the DDOT Specifications.

**G201003 1.5** PAVEMENT PATCHES

Provide pavement patches for existing pavements where required for installation of utility trenches. Sawcut 12 inches beyond edge of trench. Thicknesses of pavement materials shall be equal to or greater than the existing pavement section.

For spalls or repairs of existing concrete pavement, perform repairs in conformance with DDOT Specifications.

**G201004 MARKING & SIGNAGE**

**G201004 1.1** MARKING

Pavement markings shall be in accordance with the DDOT Specifications. Materials shall be designed for life expectancy of at least 3 years under an average daily traffic count per lane of approximately 9000 vehicles. Water based paints shall have durability rating of at least 4 when determined in the wheel path area.

Provide a half-rate initial marking application on bituminous pavements. Provide the remaining application at the end of the normal curing period.

**G201004 1.2** SIGNAGE

Provide signage in accordance with the FHWA's Manual on Uniform Traffic Control Devices (MUTCD).

**G201005 GUARDRAILS & BARRIERS**

**G201005 1.1** BOLLARDS

Bollards shall be 4" diameter minimum steel pipe filled with concrete and embedded in a portland cement concrete foundation.

**G2030 PEDESTRIAN PAVING**

Locate new sidewalks such that they maintain continuity of pedestrian traffic to and from the existing sidewalks adjacent to the site(s).

**G203001 BASES & SUBBASES**

Provide as required by local standards or geotechnical report; refer to Section G201001.

**G203002 PAVED SURFACES**

**G203002 1.1** SIDEWALKS

Sidewalks shall match existing.

**G203002 1.2** HANDICAPPED RAMPS

Provide handicapped ramps of portland cement concrete pavement with a minimum compressive strength at 28 days of 3500 psi and an exposed aggregate finish, truncated domes, or as required by the DDOT at roadway intersections.

**G203003 GUARDRAILS & BARRIERS**

Refer to Section G201005.

**-- End of Section --**

**G303090 1.1** OIL/WATER SEPARATOR

Provide a three chamber oil/water separator of no less than 250 gallons in size to remove free oil from oil-in-water mixtures originating from proposed facility operations. Provide grit protection and a pre-catch basin upstream of the oil/water separator.

The oil/water separator shall utilize coalescing media and conform to the applicable guidelines of the American Petroleum Institute (API).

Provide materials or a coating system which will protect the separator from the oil-in-water mixture, atmosphere, and in-situ soil conditions.

The separator is to be accessible by panels located over each of the three chambers.

**G3060 FUEL DISTRIBUTION**

**G306001 LIQUID FUEL DISTRIBUTION PIPING**

**G306001 1.1** E85

All piping shall comply and be installed in accordance with NFPA 30 Chapter 5 and NFPA 30A Chapter 5 for Class IB flammable liquids. Fuel piping shall be:

Non metallic, corrosion proof pipe (fiberglass pipe). Piping shall have been approved and tested according to UL971 for alcohol compatibility, and certified by the manufacturer for use with E85.

Pipe thread sealants shall be Teflon based pipe thread compound.

All fittings, connectors, valves and adaptors shall be made of stainless steel, black iron or bronze. Aluminum or brass fittings are not acceptable. All gaskets used shall be designed for use with E85 fuel.

**G306001 1.2** GASOLINE

Fuel piping shall be ASTM A 53, Type E (electric-resistance welded, Grade A or B) or Type S (seamless, Grade A or B), black steel or API SPEC 5L, seamless, submerged-arc weld or gas metal-arc weld, Grade B, black steel. Provide Weight Class STD (Standard) for welding end connections. Provide Weight Class XS (Extra Strong) for threaded end connections.

**G306003 LIQUID FUEL STORAGE TANKS**

**G306003 1.1** STORAGE TANKS

Underground, double-wall fiberglass storage tank with a 10,000 gallon capacity in accordance with UL 142 and UL 2085 with secondary containment and leak monitoring. Provide with overfill/spill containment, overfill protection and vents. The tank shall be certified by the manufacturer for use with E85 fuel and shall comply with NFPA 30 Chapter 4 and NFPA 30A Chapter 4 for storage of Class IB flammable liquids. All gaskets used shall be designed for use with E85 fuel. Provide required signage identifying tank as containing E85 fuel.

**G306003 1.2** FUEL PUMPS

Fuel pumps shall comply with NEMA MG 1, NFPA 70, and be designed for use with E85 fuels and working pressure of 275 psig at 100 degrees F. Pump shall be UL listed for E85 if one is available at time of construction, and shall be certified by the manufacturer for use with E85. Fuel pumps shall use impellers made from steel. Fuel pumps shall be located in, at, or near the E85 fuel tank. The pump shall not be located in the dispensing station. Fuel pumps shall comply with NFPA 30A Chapter 6.4 Requirements for Remote/Submersible pumps for use with Class IB Liquids. All gaskets used shall be designed for use with E85 fuel.

For Option No. 1 a fuel pump shall be installed in, at or near the existing gasoline fuel tank to match the pumping configuration in the E85 system. The pump for the existing gasoline fuel system shall not be in the dispensing equipment under the option.

**G306003 1.3** FUEL METERS

The additional E85 system must be incorporated with existing Veeder-Root monitoring system and the existing Petro Vend accounting system. One access key pad shall be installed on each new fueling island.

**G306004 LIQUID FUEL DISPENSING EQUIPMENT**

Fuel dispensing equipment shall comply with NFPA 30A Chapter 6 Fuel Dispensing systems.

**G306004 1.1** E85 DISPENSERS

Dispensing equipment shall be UL-listed for E85 if one is available at time of construction, and shall be certified by the manufacturer for use with E85. Dispensing nozzles shall be stainless steel or nickel plated iron and shall be designed for use with E85 fuel. Dispensing nozzles shall not be aluminum.

Provide a 2-micron or smaller dispenser filter for the E85 system.

Hoses in the dispensing system shall be alcohol-resistant hoses and shall be deemed 100% methanol compatible.

All fittings, connectors, valves, and adaptors shall be made of stainless steel, black iron or bronze. Aluminum or brass fittings are not acceptable. All gaskets used shall be designed for use with E85 fuel.

Each dispenser shall have two hoses and nozzles capable of simultaneously dispensing fuel.

**G306004 1.2** GASOLINE DISPENSERS

Dispensing equipment shall be UL-listed for gasoline.

Provide a 10-micron or smaller dispenser filter for the gasoline system.

Each dispenser shall have two hoses and nozzles capable of simultaneously dispensing fuel.

**-- End of Section --**

# SECTION G40

# SITE ELECTRICAL UTILITIES

## G40 1.1 - NARRATIVE

This section covers installations exterior to the facility up to the five foot line. See Section D50, *Electrical*, for continuation of systems into the building.

## G40 1.2 - ELECTRICAL DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification.*

### G40 1.2.1 - Government Standards

UNITED FACILITIES CRITERIA (UFC)

UFC 3-500-10N, *Electrical Engineering*

UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

UFGS 33 52 13, *Exterior Fuel Distribution*

UFGS 33 58 00, *Leak Detection for Fueling Systems*

## G40 1.3 - QUALITY ASSURANCE

Qualifications, certifications, and Test Plans indicated herein shall be submitted 45 calendar days prior to the expected date of execution. Notify the Contracting Officer 14 calendar days prior to all testing. Submit test results within 7 calendar days of completion of testing.

The Designer of Record is responsible for approving the submittals listed below.

### G40 1.3.1 - Qualified Testing Organization

Contractor shall engage the services of a qualified testing organization to provide inspection, testing, calibration, and adjustment of the electrical distribution system and equipment listed in paragraph entitled "Acceptance Tests and Inspections" herein. Organization shall be independent of the supplier, manufacturer, and installer of the equipment. The organization shall be a first tier subcontractor.

a. Submit name and qualifications of organization. Organization shall have been regularly engaged in the testing of electrical materials, devices, installations, and systems for a minimum of 5 years. The organization shall have a calibration program, and test instruments used shall be calibrated in accordance with NETA ATS.

b. Submit name and qualifications of the lead engineering technician performing the required testing services. Include a list of three comparable jobs performed by the technician with specific

names and telephone numbers for reference. Testing, inspection, calibration, and adjustments shall be performed by an engineering technician, certified by NETA or the National Institute for Certification in Engineering Technologies (NICET) with a minimum of 5 years' experience inspecting, testing, and calibrating electrical distribution and generation equipment, systems, and devices.

**G40 1.3.2** - NEC Qualified Worker

Provide in accordance with NFPA 70. Qualified Workers shall be allowed to be assisted by helpers on a 1 to 1 ratio, provided such helpers are registered in recognized apprenticeship programs. Submit a certification confirming NEC Qualified Worker requirements.

**G40 1.3.8** - Material Standards

Ensure service support and provide manufacturer's nameplate in accordance with PTS Section Z10, *General Performance Technical Specification.*

**G40 1.3.8.1** - Warning Labels

Each enclosure of electrical equipment, including substations, pad-mounted transformers, pad-mounted switches, pad-mounted sectionalizing termination cabinets, and switchgear, shall have a warning label identifying the enclosure as 1) containing energized electrical equipment and 2) an arc flash hazard.

**G40 1.3.9** - Factory Testing

The Government reserves the right to witness all factory testing. The manufacturer shall have a calibration program that assures that all applicable test instruments are maintained within rated accuracy.

**G40 1.3.10** - Electrical System Startup and Testing

Submit test plans for approval. The test plans shall be tailored to the systems provided.

The test plan shall list make and model and provide functional description of the test instruments and accessories and shall describe the setup of the tests to be conducted. Test instruments shall be capable of measuring and recording or displaying test data at a higher resolution and greater accuracy than specified for the equipment's performance.

**G40 1.3.10.1** - Factory Trained Engineer

Provide a factory trained engineer to supervise start-up and testing as required in referenced specifications.

**G40 1.3.10.2** - Performance Verification Testing

The Contractor shall show by demonstration in service that all circuits and devices are in operating condition. Tests shall be such that each item of control equipment will function not less than five times. The Contractor shall provide all necessary test equipment, tools, fuel, load banks, etc., labor, and materials for testing. As a minimum, all systems shall be tested in accordance with manufacturer's recommendations. Additional testing requirements for the

various systems are described with those systems, hereinafter. The Contractor shall assure that all applicable test instruments are maintained within rated accuracy. Dated calibration labels shall be visible on all test equipment.

Submit a separate electrical field test plan in accordance with manufacturer's recommendations and that conforms to NETA ATS for each piece of Electrical Distribution Equipment and/or System requiring Performance Verification Testing.

The following items identify specific test requirements. Additional test requirements are contained in the applicable UFGS.

a. Cable – Test cable in accordance with the manufacturer's recommendations and NETA ATS. Adhere to precautions and limits as specified in the applicable NEMA/ICEA Standard for the specific cable.

b. Grounding - Test ground systems in accordance with the manufacturer's recommendations and NETA ATS.

c. Site Lighting - Contractor's Quality Control (CQC) representative shall perform a field survey of site lighting systems in accordance with IESNA for acceptance. Show that the lighting system operates in accordance with the user's requirements and is in accordance with designed levels. Provide certification that the measured lighting levels conform to the design requirements.

**G40 1.3.10.3 -** Acceptance Tests and Inspections

The Qualified Testing Organization shall provide the Acceptance Tests and Inspections test plan and procedures and perform the acceptance tests and inspections. Test methods, procedures, and test values shall be performed and evaluated in accordance with NETA ATS, the manufacturer's recommendations, and paragraph entitled "Field Quality Control" of each applicable specification section. Tests identified as optional in NETA ATS are not required unless otherwise specified. Equipment shall be placed in service only after completion of required tests and evaluation of the test results have been completed. Contractor shall supply to the testing organization complete sets of shop drawings, settings of adjustable devices, and other information necessary for an accurate test and inspection of the system prior to the performance of any final testing.

Specific test requirements are contained in the UFGS for equipment.

## G40 1.4 - DESIGN SUBMITTALS

Design submittals shall be in accordance with PTS Section Z10, *General Performance Technical Specification*; UFGS 01 33 10.05 20, *Design Submittal Procedures*; and UFC 3-500-10N, *Electrical Engineering*.

## G40 1.5 - CONSTRUCTION SUBMITTALS

The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*. Construction submittals shall be in accordance with UFGS 01 33 00.05 20, *Construction Submittal Procedures*.

If an OMSI manual is not a contract requirement, then provide product data for all equipment; and submit operation and maintenance data in accordance with Section 01 78 24.05 20, *Facility Operation and Maintenance Support Information*.

Provide certification that all adjustable protective device settings have been set in accordance with the coordination study for the as-built equipment and configuration.

## G4010 ELECTRICAL DISTRIBUTION

### G401001 SUBSTATIONS

When secondary unit substations are required, the Designer of Record shall utilize Section 26 11 13, *Secondary Unit Substation*, and Section 26 23 00, *Switchboards and Switchgear*, for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

### G401002 TRANSFORMERS

When transformers are required, the Designer of Record shall utilize Section 26 12 19.10, *Three-Phase Pad Mounted Transformers*, Section 26 12 19.20, *Single-Phase Pad Mounted Transformers*, or Section 33 71 01.00 20, *Overhead Transmission and Distribution*, for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

### G401003 SWITCHES, CONTROLS AND DEVICES

When switches or control devices are required, the Designer of Record shall utilize Section 26 13 00.00 20, *SF6 Insulated Pad Mounted Switchgear*, or Section 33 71 01.00 20, *Overhead Transmission and Distribution*, for the project specification, and shall submit the edited specification section as a part of the design submittal for the project.

### G401006 UNDERGROUND ELECTRIC CONDUCTORS

Route underground cables to minimize splices. Cable pulling tensions shall not exceed the maximum pulling tension recommended by the cable manufacturer. Medium voltage cable termination shall be suitable for the location installed and meet IEEE Std. 48 Class 1 requirements.

### G401007 DUCTBANKS, MANHOLES, HANDHOLES AND RACEWAYS

Concrete manholes and handholes shall be standard type pre-cast concrete. Composite/Fiberglass handholes shall be polymer concrete reinforced with a heavy weave fiberglass reinforcing as indicated. Load ratings of manholes and handholes shall be suitable for the location installed.

### G401008 GROUNDING SYSTEMS

### G401009 METERING

### G401010 CATHODIC PROTECTION SYSTEMS

Cathodic protection systems shall be in accordance with UFC 3-570-02N.

## G4020 SITE LIGHTING

### G402001 EXTERIOR LIGHTING FIXTURES AND CONTROLS

Maintained mean area lighting levels shall be 6 lux (0.5 fc). Lighting uniformity shall be maintained with the following average to minimum (avg/min) uniformity ratios:

a. Highway Lighting, 3:1

b. Secondary Street Lighting, 6:1

c. Residential Streets, 6:1

d. Area And Parking Lighting, 6:1

### G402004 LIGHTING POLES

Poles shall meet Uniform Building Code for street lighting poles, and AASHTO loadings for highway and sports lighting poles taking into account the effective projected areas of the luminaries provided. Poles shall be direct set or anchor-base type designed for use with underground supply conductors.

### G402005 UNDERGROUND ELECTRIC CONDUCTORS

Provide in accordance with Paragraph G401006.

### G402006 DUCTBANKS, MANHOLES AND HANDHOLES

Handholes and underground conduits for site lighting shall be in accordance with Paragraph G401007.

### G402007 GROUNDING SYSTEMS

### G403003 CABLES AND WIRING

Provide underground copper cable pair in accordance with RUS 345-67. Provide aerial cable in accordance with RUS 345-67 except that it shall be suitable for aerial installation and shall be Figure 8 distribution wire with 26,700 N (6,000 pound) Class A galvanized steel or 26,700 N (6,000 pound) aluminum-clad steel strand. Screen-compartmental core cable shall be filled cable meeting the requirements of RUS 345-67. Fiber optic media shall meet all performance requirements of EIA/TIA-568-A and the physical requirements of ICEA S-87-640 and EIA/TIA-598-A.

### G403004 DUCTBANKS, MANHOLES AND HANDHOLES

Provide in accordance with paragraph G401007.

### G403005 TOWERS, POLES AND STANDS

Provide in accordance with paragraph G401005.

### G403009 GROUNDING SYSTEMS

**--End of Section--**

# SECTION Z10

# GENERAL PERFORMANCE TECHNICAL SPECIFICATION

## GENERAL

### 1.1 - NARRATIVE

All Performance Technical Specification (PTS) sections must be used in conjunction with all parts of the Performance Based Request for Proposal (RFP) to determine the full requirements of this solicitation. This PTS section provides general requirements for the other PTS sections of this RFP and is used in conjunction with the other PTS sections.

Refer to section 01330, "Design Submittal Procedures" for the Order of Precedence of the RFP Parts. Requirements listed in the Project Program take precedence over the PTS sections requirements; therefore, requirements identified in the Project Program eliminate options related to that requirement in the PTS sections.

### 1.2 - DESIGN GUIDANCE

Provide work in compliance with the following design standards and codes, as a minimum. Government standards listed in this RFP take precedence over industry standards.

The PTS Sections reference published standards, the titles of which can be found in the Unified Master Reference List (UMRL) on the Whole Building Design Guide at the Unified Facilities Guide Specification (UFGS) Website. The publications referenced form a part of this specification to the extent referenced. The publications are referred to in the section text by the basic designation only. Industry standards, codes, and Government standards referenced in the section text, and not found in the UMRL, are listed at the beginning of the PTS sections.

The advisory provisions of all codes, requirements, and standards shall be mandatory; substitute words such as "shall", "must", or "required" for words such as "should", "may", or "recommended," wherever they appear. The results of these wording substitutions incorporate these code and standard statements as requirements. Reference to the "authority having jurisdiction" shall be interpreted to mean "Contracting Officer". Comply with the required and advisory portions of the current edition of the standard at the time of contract award.

The following list of codes and standards is not comprehensive and is augmented by other codes and standards referenced and cross-referenced in the RFP.

#### 1.2.1 - INDUSTRY CODES

INTERNATIONAL BUILDING CODE (IBC)

INTERNATIONAL MECHANICAL CODE (IMC)

INTERNATIONAL PLUMBING CODE (IPC)

INTERNATIONAL FIRE CODE (IFC)

**1.2.2** - GOVERNMENT STANDARDS

**1.2.2.1** - FEDERAL STANDARDS:

Uniform Federal Accessibility Standard (UFAS)

American with Disabilities Act Architectural Guidelines (ADAAG)

Occupational Safety and Health Association (OSHA)

## 1.3 - MATERIALS AND EQUIPMENT REQUIREMENTS IDENTIFICATION

**1.3.1** - MATERIALS STANDARD

Refer to the Project Program for identification of Government Furnished Equipment.

The equipment items shall be supported by service organizations that are convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

Materials, equipment, fixtures, and other appurtenances shall comply with applicable Underwriters Laboratories, (UL) Inc., American National Standards Institute, Inc., and National Electrical Manufacturer's Association standards or applicable standards of a similar independent testing organization. All materials shall be new, and shall bear the label of Underwriters Laboratories whenever standards have been established and label service is normally and regularly furnished by the agency. All equipment provided shall be listed and labeled suitable for the specified purpose, environment, and application and installed in accordance with manufacturer's recommendations. Insulation shall be asbestos free.

**1.3.2** - EQUIPMENT NAMEPLATE IDENTIFICATION

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.

**1.3.3** - FIELD-APPLIED NAMEPLATES

Provide laminated plastic nameplates for each piece of equipment. Each nameplate must identify the function and, when applicable, the number designation of that piece of equipment as used in the design documents. Provide melamine plastic nameplates, 3 mm (0.125 inch) thick, white with black center core.

## 1.4 - PERFORMANCE VERIFICATION AND ACCEPTANCE TESTS

Verification of satisfactory construction and system performance shall be via Performance Verification Testing, Acceptance Tests, and submittal of test reports certified by the Designer of Record (DOR), that work is in compliance with requirements of the RFP. The Government reserves the right to witness all Performance Verification and Acceptance Tests, review data, and request other such additional inspections and repeat tests as necessary to ensure that the work and provided services conform to the stated requirements.

Refer to each PTS section to identify Performance Verification and Acceptance Testing related to the work identified in that PTS section.

## 1.5 - DESIGN SUBMITTALS

Design submittals shall be in accordance with section 01330, "Design Submittal Procedures", and other discipline-specific guidelines listed in the applicable PTS sections.

## 1.6 - CONSTRUCTION SUBMITTALS

Submit to the Designer of Record (DOR), construction submittals on all materials and systems installed in the project. Refer to each PTS section for further construction submittal requirements relating to the work identified in that PTS section.

Provide submittals in accordance with section 01000, "General Requirements".

**--End of Section--**

# 6.1 EXISTING SITE PHOTOS

Photo 1: From above, gasoline dispenser shown on right, part of above ground diesel storage tank and dispenser shown in lower left, and outlined in red is suggested placement of new underground E85 fuel storage tank.

Photo 2: Above ground diesel storage tank and dispenser and residential parking lot.

Photo 3: Curbside on E St. S.E. in the direction of S. Capitol St. S.E.

Photo 4: Current entrance to the fueling station.

# REPORT ON
# GEOTECHNICAL INVESTIGATION AND FOUNDATION RECOMMENDATIONS FOR E85 FUEL PUMPING STATION
# 14 E STREET, SE
# WASHINGTON, D.C.

by

Haley & Aldrich, Inc.
McLean, Virginia

for

Hayes, Seay, Mattern & Mattern, Inc.
Washington, DC

File No. 29210-003
July 2007

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ALDRICH

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HALEY&
ALDRICH

12 July 2007
File No. 29210-003

Hayes, Seay, Mattern & Mattern, Inc.
Three Lafayette Center
1155 21st Street, NW Suite 1000
Washington, DC 20036

Attention: Mr. Bob Priest, P.E.
Project Manager

Subject: Geotechnical Investigation and Foundation Recommendations
E85 Fuel Pumping Station
14 E Street, SE
Washington, DC

Ladies and Gentlemen:

We are pleased to submit our report entitled, "Geotechnical Investigation and Foundation Recommendations, E85 Fuel Pumping Station, 14 E Street, SE, Washington DC." This report has been prepared in accordance with our proposal dated 27 June 2007, and your subsequent authorization.

## UNDERSTANDING OF THE PROJECT

The Architect of the Capitol (AOC) plans to install an E85 pumping station fed by a 10,000 gallon underground storage tank at their existing fuel station at 14 E Street, SE in Washington, DC as shown on Figure 1, "Project Locus". The proposed tank will be approximately 8 ft in diameter and 12 ft long. The top and bottom of the tank is anticipated to be at approximately 5 ft and 12 ft, respectively, below the ground surface. The Architect of the Capitol expects to dispense approximately 80,000 gallons of E85 fuel annually. This project will be procured by the Architect of the Capitol using the Design/Build delivery process.

## PURPOSE AND SCOPE

The purpose of this study was to investigate the subsurface soil and groundwater conditions at the proposed site and develop foundation design recommendations for the proposed underground storage tank. To achieve this objective, the scope of work undertaken for this investigation included the following:

- Conducted a field exploration program consisting of drilling, logging and sampling of two (2) test borings.

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- Conducted a geotechnical laboratory testing program to aid in soil classification and for determination of engineering properties required in foundation design for the underground storage tank.

- Conducted an analytical testing program on soil and groundwater to assess the release of petroleum products from the existing tank.

- Performed engineering analyses related to the geotechnical engineering aspects of foundation design and construction.

## ELEVATION DATUM

The elevations cited in this report are in feet and are referenced to NGVD 1929 datum. We were not provided with any topographic information at the site. Accordingly, the ground surface elevations were determined by Haley & Aldrich by linear interpolation between ground surface elevation contour lines shown on the USGS topographic plan (Figure 1).

## SUBSURFACE EXPLORATIONS AND LABORATORY INVESTIGATIONS

An exploration program was undertaken at the site to obtain subsurface information for engineering analyses and project design. The program consisted of drilling two test borings (designated B1 and B2) on 5 July 2007. GeoServices Corporation, Inc. of Forestville, Maryland drilled the borings using a truck-mounted, Mobile LME 45 drill rig. A Haley & Aldrich representative was present in the field to monitor the borings. The locations of the test borings are shown on Figure 2, "Subsurface Exploration Location Plan."

The locations of the borings were recommended by HSMM and provided to Haley & Aldrich prior to drilling. The as-drilled locations of the test borings were determined by Haley & Aldrich in the field by tape measurement from existing site features. Ground surface elevations of the borings were determined by linear interpolation between ground surface contour lines shown on the USGS topographic plan (Figure 1). The locations and elevations of the explorations should be considered accurate only to the degree implied by the method used.

The test borings were advanced using 3-1/4-in. inside diameter (i.d.) hollow-stem augers. Split-spoon samples were typically obtained at approximately 5 ft intervals for the upper 10 ft of the borings, and at 2.5 ft intervals between 10 to 20 ft and 5 ft intervals thereafter. The standard penetration resistance was determined at each sample level by counting the number of blows required to drive a standard split-spoon sampler (1- 3/8 in. i.d., 2 in. o.d.) to a distance of 18 in. into undisturbed soil under the impact of a 140-lb hammer free-falling 30 in. The number of blows required to advance the sampler was recorded for each 6 in. interval. The standard penetration resistance N-value is determined by summing the number of blows required to advance the sampler the last 12 in. of the 18 in. sampling range.



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The test borings were monitored by Haley & Aldrich personnel, who used a MiniRAE 2000 PhotoIonization Detector (PID) to conduct headspace screening of the soil samples for the presence of volatile contamination to assess the potential for a release to have occurred from the existing tank. The PID was calibrated the morning of the field activities prior to start of drilling. PID measurements are noted on the boring logs presented in Appendix A.

A temporary standpipe was installed in completed boring B2 in order to evaluate the groundwater level at the site and to facilitate sampling of groundwater. The observation well consisted of a 1-inch I.D. slotted PVC well point attached to a 1-inch I.D. PVC riser pipe. Boring B2 was left overnight to equilibrate. Borings B1 and B2 were both backfilled with drill spoils and capped with concrete after completion of soil and groundwater sampling for geotechnical and analytical laboratory testing.

Soil and groundwater samples were maintained by Haley & Aldrich personnel on ice under standard chain-of-custody documentation. The samples for geotechnical evaluations were taken to Haley & Aldrich's office and those for analytical testing were delivered to Caliber Analyical Services, Towson, Maryland.

**Geotechnical Laboratory Testing**

A laboratory testing program was conducted on soil samples recovered from subsurface explorations to aid in soil classification and for determination of engineering properties required in foundation design of the proposed underground storage tank. The primary purpose of the testing program was to evaluate the index properties of the soils present at the site. Testing included water content determinations, Atterberg limits, grain size distributions, and percent fines determinations. All of the tests were performed in general conformance with the applicable ASTM test procedures. Results of the laboratory testing program are presented in Appendix B.

**Analytical Sample Collection and Laboratory Testing**

Analytical laboratory analyses were conducted on soil and groundwater samples based on field observations and PID headspace screening results. PID readings ranged from 0.1 ppm to a maximum of 6.6 ppm (measured close to the ground surface where asphalt was present). Since the PID did not register detectable concentrations and visual observations indicated a minimal likelihood of potential contamination, soil samples located nearest to the groundwater level were selected for analytical testing. Upon collection of soil samples they were placed in laboratory supplied 2 oz. and 4 oz. glass soil sample jars and kept chilled. Soil samples were analyzed for VOCs (plus oxygenates), PAHs and TPH DRO.

Groundwater samples were collected at boring B2 using dedicated disposable bailer and collected directly into pre-preserved laboratory supplied containers. Groundwater samples were analyzed for VOCs (plus oxygenates), PAHs, TPH DRO and Lead content (total).



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Soil and Groundwater Results

Analytical soil results indicate no detectable concentrations for the analytes tested. No visual or olfactory evidence of impacted soil was detected in the other samples analyzed from borings B1 and B2.

Analytical groundwater results for the groundwater sample collected from the temporary standpipe at Boring B2 report detectable concentrations of TPH DRO and lead. The TPH DRO concentration of 0.39 mg/L, is below the D.C. regulatory ground water quality standard of 1.0 mg/L. The concentration of lead, 63 ug/L, is above the D.C. regulatory ground water quality standard of 50 ug/L for drinking water. However groundwater in D.C. is not used as a potable water source. While there is evidence of minor contamination in the groundwater, no contamination was detected in the soil, which indicates that the groundwater impacts are unlikely to be related to the existing underground storage tank.

## SURFACE, SUBSURFACE AND GROUNDWATER CONDITIONS

### Surface Conditions

The site is located on a paved and leveled parking lot. The existing ground surface at the proposed location is approximately El. 30 as determined by reviewing an USGS topographic plan. E Street, SE is located on the south side of existing parking lot. There are two existing fuel stations adjacent to the proposed E85 fuel pumping station and underground storage tank.

### Subsurface Conditions

Descriptions of the soil conditions encountered during the subsurface exploration program conducted at the site are provided below in order of increasing depth below ground surface. Refer to the test boring logs in Appendix A for specific descriptions of soil samples obtained from the borings. The boring logs and related information depict subsurface conditions only at the specific locations and at the particular time designated on the logs. Soil conditions at other locations may differ from conditions occurring at the boring locations. In addition, the passage of time may result in a change in the soil conditions at these boring locations.

- *ASPHALT* – At the ground surface there is a layer of asphalt. Asphalt was encountered at both boring locations. The thickness of the asphalt was 6 in. at B1 and B2.

- *FILL* –Below the asphalt, there is a stratum of man-placed FILL primarily described as light brown, brown and dark brown poorly-graded GRAVEL with sand (GP), well-graded GRAVEL with sand (GW) and clayey SAND with gravel (SC). Occasional layers of dark brown and brown sandy SILT (ML), and sandy lean CLAY (CL) were also encountered. This stratum was fully penetrated in both borings. The thickness of this stratum was approximately 14.5 ft at both borings. The consistency of fine-grained soils encountered in this stratum ranged from very soft to medium stiff. The density of coarse-grained soils encountered in this stratum ranged from very loose to very dense.



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- *NATURAL SOIL* -Below the FILL, there is a stratum of natural soil primarily described as gray and tan to brown to yellow-brown, lean CLAY with sand (CL), clayey SAND (SC), poorly-graded SAND (SP), poorly-graded SAND with gravel (SM) and poorly-graded GRAVEL with sand (GW). The consistency of fine-grained soils encountered in this stratum was medium stiff. The density of coarse-grained soils encountered in this stratum ranged from loose to very dense. This stratum was encountered in both borings, but was not fully penetrated in either boring.

**Groundwater Conditions**

Groundwater levels were measured in the boreholes when groundwater was encountered during drilling and approximately 24 hours after the test borings were completed. Measured groundwater levels are listed on the boring logs. Groundwater levels measured during and after 24 hours of drilling generally ranged from a depth of 27.2 to 27.5 ft below ground surface, which corresponds to El. 2.8 to El. 2.5.

Groundwater level readings have been made in the boreholes at times and under conditions discussed herein. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in season, rainfall, temperature, dewatering activities, and other factors not evident at the time measurements were made and reported herein.

**FOUNDATION RECOMMENDATIONS**

Our conclusions and recommendations for support of the tank are based on subsurface information obtained during our field investigation, and information about the proposed construction obtained from HSMM. Based on the results of our subsurface investigation, it is our opinion that natural soil below the FILL is suitable for direct support of the tank at a depth of 14.5 ft below the ground surface.

- A maximum allowable bearing pressure of 4 kips per square foot (ksf) should be used for bearing the underground tank on natural soil deposits.

- The proposed 64 kip tank could be supported directly on soil or alternatively on slab foundation since virtually no settlement is predicted at the location of the proposed underground storage tank. For the tank supported by the natural soil subgrade, a layer of bedding material should be placed under and adjacent to the tank in accordance with the tank manufacturer's recommendations.

- There will be no effect of buoyancy as the groundwater level is at a greater depth from the ground surface than the proposed tank bearing level.

- The tank bearing level should be a minimum of 30 in. below the lowest adjacent ground surface exposed to freezing.



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- The tank should be founded below a 2 horizontal to 1 vertical (2H:1V) slope line drawn upward from the bottom of any adjacent utility.

- No existing buried foundations were encountered while drilling. However it was reported by AOC personnel that remnants of old foundations may exist in the area where the proposed tank will be constructed.

- An equivalent fluid pressure of 60 lbs per cubic ft should be assumed for a lateral earth pressure load.

- If excavation for construction of the underground storage tank is made with an open cut, the sides should be sloped no steeper than 1H: 1V. However, if an open cut excavation has the potential to undermine adjacent structures or utilities, or affect their continued performance, then an excavation support system such as soldier piles and lagging should be considered.

**Structural Fill**

Structural fill placed around the tank should conform to the tank manufacturer's requirements. To evaluate the suitability and the quality of the fill source, we recommend that the laboratory testing program presented below be performed in accordance with the indicated ASTM Test Methods.

| Test | ASTM Designation |
|---|---|
| Moisture Content | D2216 |
| Sieve Analysis | D422 |
| Atterberg Limits | D4318 |

As a minimum, structural fill should be placed in horizontal lifts not exceeding 8 in. thickness (loose measure) and compacted in accordance with the tank manufacturer's recommendation. Structural fill should be compacted by self-propelled vibratory rollers or other approved compaction equipment. Where compaction occurs in confined areas, the loose lift thickness should be reduced to 4 in. and compaction performed by hand-guided vibratory compactors or tampers.

Structural fill should not be placed on frozen ground or uncompacted soil. During periods of freezing weather, each lift of fill should be compacted immediately following placement. During such periods, the last lift of compacted fill at the close of the working day should be rolled with a smooth roller to remove all ridges of soil. Concrete should be placed immediately after approval of subgrade.

Backfill in utility trenches located beneath pavements and areas, other than the tank should consist of clean, sandy gravel, gravelly sand, or sand and gravel mixture, free of organic material, snow, ice, frozen soil, or other objectionable materials. The fill should have a liquid limit no



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greater than 40 percent and a plasticity index no. greater than 10. In addition, the fill material should be well-graded within the following limits:

| Sieve Size | Percent Finer By Weight |
|---|---|
| 8 cm | 100 |
| No. 4 | 30-95 |
| No. 40 | 10-50 |
| No. 200 | 0-25 |

## CONSTRUCTION CONSIDERATIONS

The following sections of the report include comments on items related to excavation, foundation construction, earthwork and related geotechnical engineering aspects of the proposed construction. This section is written primarily for the engineer responsible for preparation of plans and specifications. Since this section identifies potential construction problems related to foundations and earthwork, it will also aid personnel who monitor the construction activity.

Prospective contractors for the project must evaluate potential construction problems on the basis of their own knowledge and experience in the Washington, DC area and on the basis of similar projects in other localities, taking into account their own proposed construction methods and procedures.

All excavation and other construction activities should conform to the requirements of the Occupational Safety and Health Administration (OSHA), and all other applicable regulations, including municipal, state and federal regulatory agencies.

### Clearing and Stripping

Existing utilities or underground obstructions should be clearly marked, and protected or demolished and removed from the site. Material generated from clearing and demolition operations should be removed and disposed off site

### Excavation

Temporary excavation for tank installation should be achievable using conventional earthmoving equipment in proper working condition. Excavation will be required for tank installation and utility trenches. It is recommended that prior to any fill placement, soil within the tank excavation be removed down to the top of natural soil.

The excavation subgrade will likely consist of Natural soil deposits. During excavation, extreme care should be taken not to disturb the exposed natural soils on which the tank will bear. The following excavation guidelines are recommended:



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- The final excavation to design subgrade level should be delayed as long as possible, to minimize the time during which the subgrade surfaces are exposed. Excavation to final subgrade level should be made with a backhoe equipped with a smooth edge bucket.

- The exposed subgrade soils should be examined in the field by the geotechnical engineer to verify the strength and bearing capacity of these soils.

- Any over-excavation of soils below design bearing grade should be backfilled with compacted bedding fill as recommended by the tank manufacturer.

Temporary construction excavations above the water table such as those anticipated for the proposed construction, may be constructed with 1H:1V side slopes. Localized instabilities in such excavations may occur due to the heterogeneity of the near-surface soils. In such areas, the excavation sides should be sloped at an inclination of 1½H:1V, or flatter. Side slopes should be protected from excessive disturbance and surface water runoff. All excavations should be performed in accordance with local, state, and federal regulations, including current OSHA excavation safety standards. Alternatively, if the open cut slopes have the potential to undermine adjacent structures and utilities, or affect their future performance, then a temporary excavation support system such as soldier piles and lagging should be installed.

**Construction Monitoring**

Placement and compaction of all fill materials should be monitored and tested by a qualified technician under supervision of a professional geotechnical engineer. We recommend that all fill placement be tested in accordance with ASTM D2922 and D3017 (Nuclear Density Method) to verify the density, degree of compaction, and moisture content of the fill. The specifications should call for frequent testing on each lift. In the event any portion of the fill fails to meet the compaction requirements, the area should be reworked, recompacted, and retested until the specified compaction is achieved.

It is recommended that the design-build contractor's geotechnical engineer or technician, qualified by training and experience be present during construction to:

- Monitor, proofroll, test and approve subgrade before, during and after fill placement.

- Perform field density tests in accordance with ASTM D 1556 (sand cone method) or ASTM D 2922 and D3017 (nuclear method) to verify required soil compaction.

- Submit a field report for each day's work summarizing the test results and observations, including comments on the contractor's activities.

- Monitor, test and observe the tank foundation construction, and confirm the allowable bearing pressure capacity of the compacted structural fill.



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- Perform additional laboratory tests, as required during construction to help determine the suitability of proposed structural granular fill.

## LIMITATIONS

This report has been prepared for specific application to the E85 Fuel Pumping Station as understood at this time, in accordance with generally accepted geotechnical engineering practice common to the local area. In the event that changes in the nature, design or location of the tank are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed by Haley & Aldrich, Inc. and the conclusions of this report modified or verified in writing.

The analyses and recommendations are based, in part, upon the data obtained from the referenced subsurface explorations. The nature and extent of variations between explorations may not become evident until construction. If variations then appear, it may be necessary to reevaluate the recommendations of this report.

We appreciate the opportunity to provide engineering consulting services on this project. Please do not hesitate to call if you have any questions or comments.

Sincerely yours,
HALEY & ALDRICH, INC.

Derrick A. Shelton, P.E
Senior Engineer

David A. Schoenwolf, P.E.
Senior Vice President

Enclosures:

Figure 1 - Project Locus
Figure 2 - Subsurface Exploration Location Plan
Appendix A – Test Boring Logs
Appendix B – Laboratory Test Results

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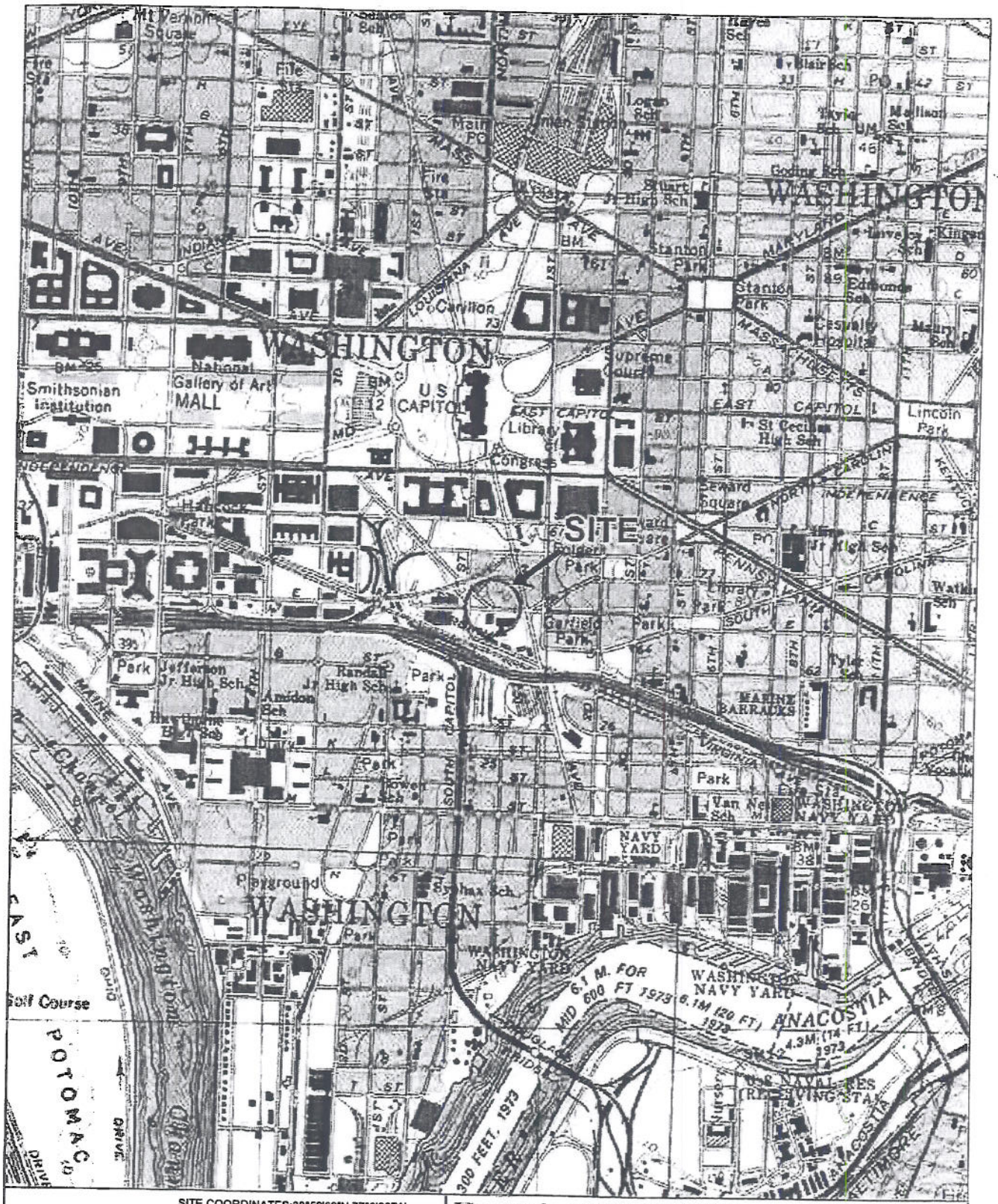
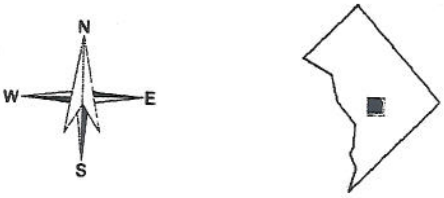



SITE COORDINATES:38°52'60"N 77°0'28"W




U.S.G.S. QUADRANGLE: WASHINGTON WEST, DC

HALEY & ALDRICH

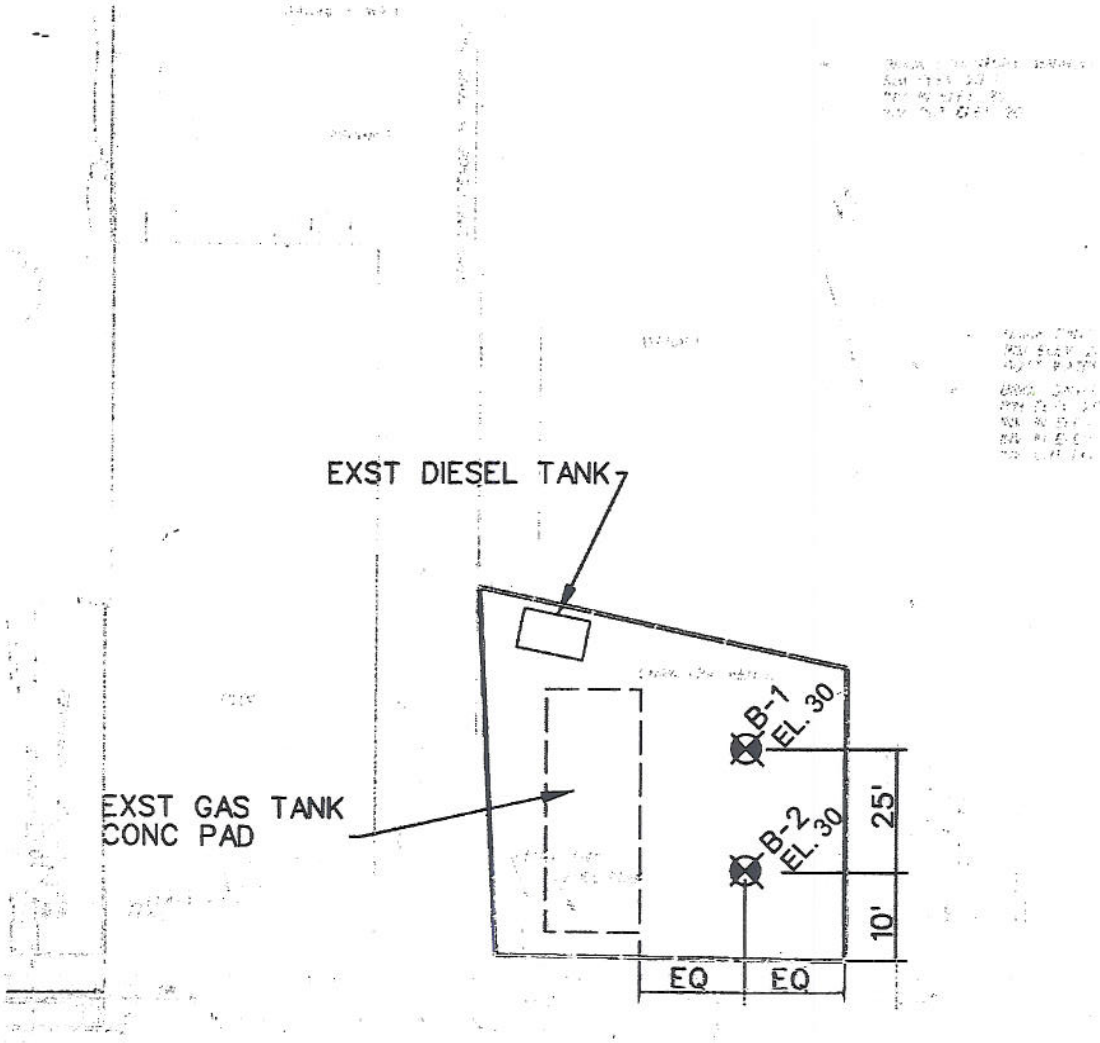
E85 FUEL PUMPING STATION
14 E STREET, SE
WASHINGTON, DISTRICT OF COLUMBIA

PROJECT LOCUS

SCALE: 1:24,000
JULY 2007

FIGURE 1

29210-003 1.PDF

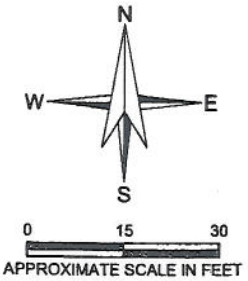



NOTES

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM AN ELECTRONIC PDF PLAN OF THE SITE PROVIDED TO HALEY & ALDRICH, INC. BY HAYES, SEAY, MATTERN & MATTERN, INC. ON 29 JUNE 2007.
2. ELEVATIONS INDICATED ON THIS DRAWING ARE IN FEET. THE DATUM IS NGVD 1929.
3. TECHNICAL MONITORING OF TEST BORINGS WAS PERFORMED BY HALEY & ALDRICH.
4. AS-DRILLED LOCATIONS OF TEST BORINGS WERE DETERMINED IN THE FIELD BY HALEY & ALDRICH BY TAPE MEASUREMENTS FROM EXISTING SITE FEATURES. GROUND SURFACE ELEVATIONS WERE DETERMINED BY HALEY & ALDRICH BY LINEAR INTERPOLATION BETWEEN GROUND SURFACE ELEVATION CONTOUR LINES SHOWN ON THE USGS TOPOGRAPHIC PLAN (FIGURE 1).

LEGEND

B-2 EL. 30 — DESIGNATION, APPROXIMATE LOCATION, AND GROUND SURFACE ELEVATION OF TEST BORINGS PERFORMED BY GEOSERVICES CORPORATION OF FORESTVILLE, MARYLAND ON 5 JULY 2007.




HALEY & ALDRICH

E85 FUEL PUMPING STATION
14 E STREET, SE
WASHINGTON, DC

SUBSURFACE EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
JULY 2007

FIGURE 2

G:\29210-003\CAD\DRAWINGS\29210-003-0A01-BLP.DWG

# APPENDIX A

## Test Boring Logs

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# TEST BORING REPORT

**Boring No.** B1

Project E85_Fuel Pumping Station 14 E Street SE, Washington DC
Client HSMM
Contractor GeoServices Corporation

File No. 29210-003
Sheet No. 1 of 2
Start July 5, 2007
Finish July 5, 2007
Driller J. Boyce
H&A Rep. R. O'Banion
Elevation 30.0
Datum NGVD
Location See Plan

| | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|---|---|---|---|---|
| Type | HSA | SS | - | Rig Make & Model: Truck CME 45 |
| Inside Diameter (in.) | 3-1/4 | 1-3/8 | - | Bit Type: Cutting Head |
| Hammer Weight (lb.) | - | 140 | - | Drill Mud: None |
| Hammer Fall (in.) | - | 30 | - | Casing: spun |
| | | | | Hoist/Hammer: Winch / Automatic Hammer |

| Depth (ft.) | SPT[1] | Sample No. & Rec. (in.) | Sample Depth (ft.) | Well Diagram | Elev./Depth (ft.) | USCS Symbol | Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation) | Gravel % Coarse | Gravel % Fine | Sand % Coarse | Sand % Medium | Sand % Fine | % Fines | Field Test Dilatancy | Field Test Toughness | Field Test Plasticity | Field Test Strength |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | 29.5 | | Asphalt top 6 inches. | | | | | | | | | | |
| | 18 22 28 | S1 14 | 0.5 2.0 | | 0.5 | GW | Dense, light brown well-graded GRAVEL with sand (GW), mps = 35 mm, dry PID = 6.6 ppm -FILL- | 30 | 25 | 20 | 15 | 5 | 5 | | | | |
| 5 | 3 3 2 | S2 10 | 4.5 6.0 | | | | Similar to S1, except loose | 20 | 30 | 15 | 10 | 20 | 5 | | | | |
| | | | | NO WELL INSTALLED | 20.5 | | | | | | | | | | | | |
| 10 | 2 1 2 | S3 18 | 9.5 11.0 | | 9.5 | SC | Very loose, light brown to black clayey SAND with gravel (SC), mps = 6 mm, moist, Note: Some asphalt in sample PID = 0.1 ppm | | 20 | 10 | 10 | 15 | 45 | | | | |
| | | | | | 18.0 | | | | | | | | | | | | |
| | 1 1 1 | S4 18 | 12.0 13.5 | | 12.0 | ML | Very soft, dark brown sandy SILT (ML), moist PID = 0 ppm | | | | | 40 | 60 | | L | L | |
| | | | | | 15.5 | | | | | | | | | | | | |
| 15 | 2 3 5 | S5 18 | 14.5 16.0 | | 14.5 | CL | Medium Stiff, gray-brown lean CLAY with sand (CL), mps = 4 mm, moist, Note: Some brick found. PID = 0 ppm -NATURAL SOIL- | | 3 | | | 10 | 87 | | M | M | |
| | 1 3 4 | S6 18 | 17.0 18.5 | | | CL | Medium Stiff, tan to light brown lean CLAY with sand (CL) PID = 0.1 ppm | | | | | 20 | 80 | | | | |
| | | | | | 10.5 | | | | | | | | | | | | |
| 20 | 6 | S7 | 19.5 | | 19.5 | SP | Medium dense, light brown poorly-graded SAND with gravel (SP), mps | 20 | | | 15 | 60 | 5 | | | | |

**Water Level Data**

| Date | Time | Elapsed Time (hr.) | Depth (ft.) to: Bottom of Casing | Bottom of Hole | Water |
|---|---|---|---|---|---|
| 7/5/2007 | 10:15 | - | 28.5 | 30.0 | 27.2 |

**Sample Identification**
O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

**Well Diagram**
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

**Summary**
Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples 9S

**Boring No.** B1

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

**Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.**

USCS_TB3A_PIDCENTER USCSLIB5.GLB USCSTC3A.GDT G:\PROJECTS\29210 -- HSMM\003- AOC UNDERGROUND STORAGE TANK\GINT\2007-0705-29210-003BORINGLOGS.GPJ Jul 12, 07

HALEY & ALDRICH

# TEST BORING REPORT

**Boring No.** B1
File No. 29210-003
Sheet No. 2 of 2

| Depth (ft.) | SPT[1] | Sample No. & Rec. (in.) | Sample Depth (ft.) | Well Diagram | Elev./Depth (ft.) | USCS Symbol | Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation) | Gravel % Coarse | Gravel % Fine | Sand % Coarse | Sand % Medium | Sand % Fine | % Fines | Field Test Dilatancy | Field Test Toughness | Field Test Plasticity | Field Test Strength |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 6<br>12 | 15 | 21.0 | | | SP | = 7 mm, moist<br>PID = 0.6 ppm | | | | | | | | | | |
| 25 | 7<br>11<br>17 | S8<br>15 | 24.5<br>26.0 | | | SP | Medium dense, gray poorly-graded SAND (SP), moist<br>PID = 1.9 ppm | 5 | 5 | | 5 | 85 | | | | | |
| | 9<br>12<br>11 | S9<br>14 | 28.5<br>30.0 | | | SP | Medium dense, yellow-brown poorly-graded SAND with gravel (SP), mps = 15 mm, wet<br>PID = 0.2 ppm | | 15 | 20 | 40 | 20 | 5 | | | | |
| 30 | | | | | 0.0<br>30.0 | | -Bottom of Exploration at 30 ft- | | | | | | | | | | |

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.
NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. B1

HALEY & ALDRICH

# TEST BORING REPORT

**Boring No. B2**

Project E85 Fuel Pumping Station 14 E Street SE, Washington DC
Client HSMM
Contractor GeoServices Corporation

File No. 29210-003
Sheet No. 1 of 2
Start July 5, 2007
Finish July 5, 2007
Driller J. Boyce
H&A Rep. R. O'Banion
Elevation 30.0
Datum NGVD
Location See Plan

| | Casing | Sampler | Barrel | Drilling Equipment and Procedures |
|---|---|---|---|---|
| Type | HSA | SS | - | Rig Make & Model: Truck CME 45 |
| Inside Diameter (in.) | 3-1/4 | 1-3/8 | - | Bit Type: Cutting Head<br>Drill Mud: None |
| Hammer Weight (lb.) | - | 140 | - | Casing: spun |
| Hammer Fall (in.) | - | 30 | - | Hoist/Hammer: Winch / Automatic Hammer |

| Depth (ft.) | SPT[1] | Sample No. & Rec. (in.) | Sample Depth (ft.) | Well Diagram | Elev./Depth (ft.) | USCS Symbol | Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation) | Gravel % Coarse | Gravel % Fine | Sand % Coarse | Sand % Medium | Sand % Fine | % Fines | Field Test Dilatancy | Field Test Toughness | Field Test Plasticity | Field Test Strength |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | 29.5 | | Asphalt top 6 inches. | | | | | | | | | | |
| | 18 25 29 | S1 14 | 0.5 2.0 | | 0.5 | GP | Very dense, light brown-gray poorly-graded GRAVEL with sand (GP), mps = 20 mm, dry<br>PID = 1.5 ppm | 55 | 20 | | 5 | 10 | 10 | | | | |
| | 8 9 9 | S2 16 | 2.0 3.5 | | | | Similar to S1, except medium dense<br>PID = 1.8 ppm<br>-FILL- | | | | | | | | | | |
| 5 | 8 8 9 | S3 15 | 4.5 6.0 | | | GP | Medium dense, light brown poorly-graded GRAVEL with sand (GP), mps = 25 mm, dry to moist<br>PID = 2.6 ppm | 25 | 25 | | | 45 | 5 | | | | |
| | | | | | 20.5 | | | | | | | | | | | | |
| 10 | 2 2 3 | S4 18 | 9.5 11.0 | | 9.5 | SC | Loose, dark brown clayey SAND with gravel (SC), mps = 10 mm, moist, with 3-in. thick layer of yellow-brown lean CLAY<br>PID = 1.2 ppm | | 17 | 10 | 15 | 14 | 44 | | | | |
| | | | | | 18.0 | | | | | | | | | | | | |
| | 1 1 3 | S5 18 | 12.0 13.5 | | 12.0 | CL | Medium stiff, brown sandy lean CLAY (CL), moist<br>PID = 0 ppm | | | | 10 | 30 | 60 | | | | |
| | | | | | 15.5 | | | | | | | | | | | | |
| 15 | 1 2 4 | S6 18 | 14.5 16.0 | | 14.5 | SC | Loose, brown clayey SAND (SC), moist<br>PID = 0.4 ppm<br>-NATURAL SOIL- | | 10 | | 11 | 31 | 48 | | | | |
| | 3 4 11 | S7 18 | 17.0 18.5 | | | SC | (SC)Similar to S6<br>PID = 0.2 ppm | | | | | | | | | | |
| 20 | 2 | S8 | 19.5 | | | SC | Loose, brown clayey SAND (SC), mps = 6 mm, moist | | 15 | | 5 | 40 | 40 | | | | |

**Water Level Data**

| Date | Time | Elapsed Time (hr.) | Depth (ft.) to: Bottom of Casing | Bottom of Hole | Water |
|---|---|---|---|---|---|
| 7/5/2007 | 08:35 | - | 28.5 | 30.0 | 28.5 |
| 7/5/2007 | 08:50 | 0.25 | 29.5 | 29.5 | 27.0 |
| 7/6/2007 | 06:10 | 22 | 29.5 | 29.5 | 27.5 |

**Sample Identification**

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

**Well Diagram**

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

**Summary**

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples 10S

**Boring No. B2**

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

**Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.**

USCS_TB3A_PIDCENTER USCSLI85.GLB USCSTC3A.GDT G:\PROJECTS\29210 – HSMM\003- AOC UNDERGROUND STORAGE TANK\GINT\2007-0705-29210-003BORINGLOGS.GPJ Jul 12, 07

HALEY & ALDRICH

# TEST BORING REPORT

**Boring No.** B2
File No. 29210-003
Sheet No. 2 of 2

| Depth (ft.) | SPT[1] | Sample No. & Rec. (in.) | Sample Depth (ft.) | Well Diagram | Elev./Depth (ft.) | USCS Symbol | Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation) | Gravel % Coarse | Gravel % Fine | Sand % Coarse | Sand % Medium | Sand % Fine | % Fines | Field Test Dilatancy | Field Test Toughness | Field Test Plasticity | Field Test Strength |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 2<br>4 | 18 | 21.0 | | | SC | PID = 0.3 ppm | | | | | | | | | | |
| | | | | | 5.5<br>24.5 | SP | Medium dense, light brown poorly-graded SAND with gravel (SP), mps = 25 mm, dry to moist<br>PID = 1.5 ppm | 5 | 20 | 20 | 25 | 25 | 5 | | | | |
| 25 | 5<br>8<br>6 | S9<br>16 | 24.5<br>26.0 | | | | | | | | | | | | | | |
| | | | | | 1.5<br>28.5 | GW | Very dense, light brown poorly-graded GRAVEL with sand (GW), mps = 50 mm, wet<br>PID = 1.8 ppm | 40 | 15 | 20 | 20 | 5 | | | | | |
| | 17<br>24<br>27 | S10<br>10 | 28.5<br>30.0 | | | | | | | | | | | | | | |
| 30 | | | | | 0.0<br>30.0 | | -Bottom of Exploration at 30 ft-<br><br>Note: Temporary 1-3/4" i.d. PVC observation well installed. See well diagram | | | | | | | | | | |

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. B2

USCS_TB3A_PIDCENTER USCSLIB5.GLB USCSTC3A.GDT G:\PROJECTS\29210 -- HSMM\003- AOC UNDERGROUND STORAGE TANK\GINT\2007-0705-29210-003BORINGLOGS.GPJ Jul 12, 07

# APPENDIX B

## Laboratory Test Results

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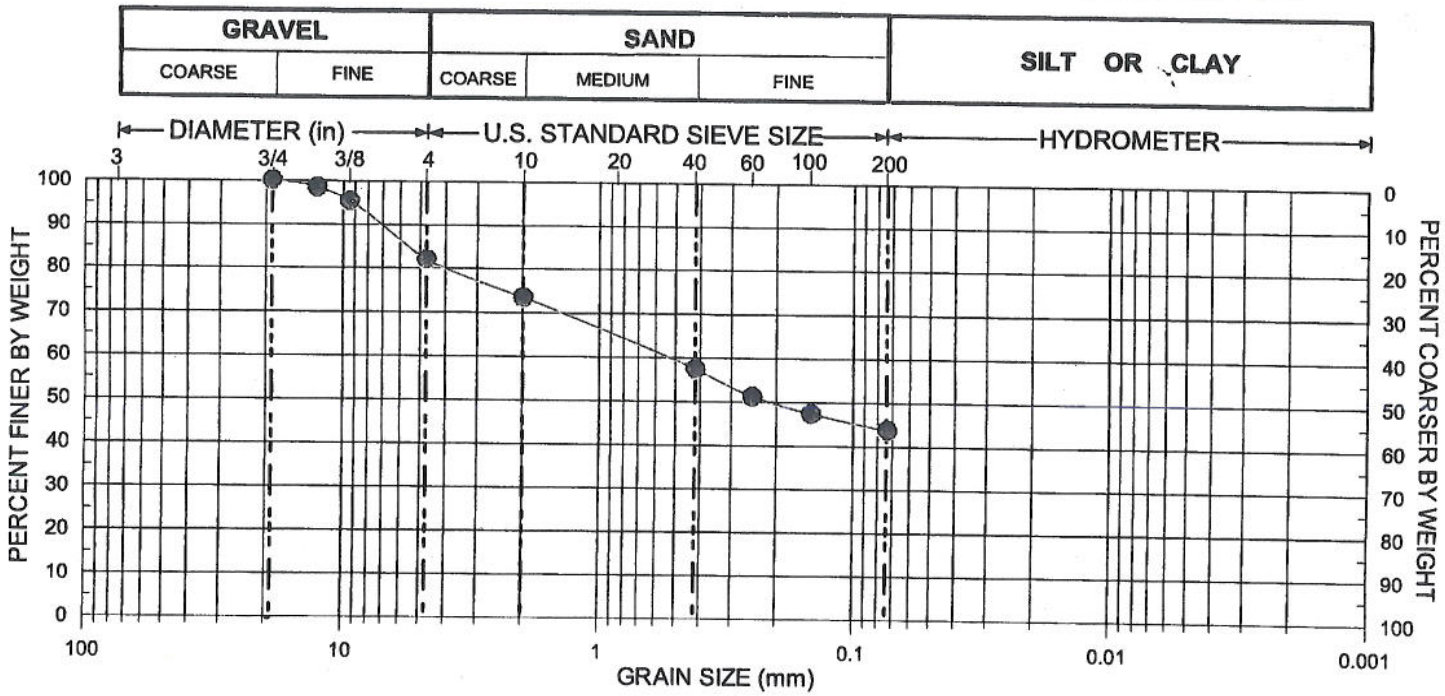
ALDRICH

Printed on 30% post-consumer recycled paper

# SUMMARY OF LABORATORY TESTING
# AOC UNDERGROUND STORAGE TANK

| Exploration Number | Sample Number | Depth (ft.) | Moisture Content (%) | ATTERBERG LIMITS Liquid Limit | Plastic Limit | Plasticity Index | Percent Passing #200 | Grain Size | USCS Class. |
|---|---|---|---|---|---|---|---|---|---|
| B-1 | S-1 | 0.5 | 10.6 | | | | | | |
| B-1 | S-2 | 4.5 | 9.2 | | | | | | |
| B-1 | S-5 | 14.5 | 24.0 | 40 | 22 | 18 | 87.1 | | CL |
| B-1 | S-7 | 19.5 | 10.7 | | | | | | |
| B-1 | S-9 | 28.5 | 10.0 | | | | | | |
| B-2 | S-3 | 9.5 | 26.9 | | | | 43.8 | ** | |
| B-2 | S-6 | 17.0 | 16.0 | 23 | 15 | 8 | 47.6 | | SC |
| B-2 | S-9 | 24.5 | 5.3 | | | | | | |

**PROJECT NAME: AOC Underground Storage Tank**
**LOCATION: 14 E Street SW**
**FILE NUMBER: 29210-003**




| KEY | EXPLORATION NUMBER | SAMPLE NUMBER | DEPTH (ft.) | MC (%) | LL | PL | PI | SOIL DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| ● | B-2 | S-3 | 9.5 | 26.9 | --- | --- | --- | Brown clayey SAND with rock |

## GRADATION ANALYSIS

TESTED BY: JMK
CHECKED BY: DS
DATE: 7-11-07
SHEET: 1 of 1

***JAY KAY TESTING***
**Taneytown, Maryland**

# CALIBER ANALYTICAL SERVICES

## Certificate of Analysis

Haley & Aldrich, Inc
7921 Jones Branch Dr.
Suite 550
McLean, VA 22102

Date Sampled: 07/05/07 10:15
Date Received: 07/06/07 16:33
Date Issued: 07/10/07

Project: AOC-UST
Site Location: 14 E Street SW, DC
Project: Number 29210-003

SDG Number: 07070607

Field Sample ID: B-1 Soil  Matrix: Soil  Lab ID: 07070607-01

| | Result | Unit | LLQ | Method | Prepared | Analyzed | Init. |
|---|---|---|---|---|---|---|---|
| **Percent Solids** | | | | | | | |
| Percent Solids | 71 | % | | SM2540B | 07/09/07 | 07/10/07 15:53 | SK |
| **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Acenaphthylene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Anthracene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Benzo[a]anthracene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Benzo[a]pyrene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Benzo[b]fluoranthene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Benzo[g,h,i]perylene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Benzo[k]fluoranthene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Chrysene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Dibenz[a,h]anthracene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Fluoranthene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Fluorene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Indeno[1,2,3-cd]pyrene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| 2-Methylnaphthalene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Naphthalene` | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Phenanthrene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| Pyrene | ND | ug/kg | 130 | EPA 8270C | 07/09/07 | 07/10/07 1:33 | CBS |
| **Target Compound List - VOLATILES** | | | | | | | |
| Dichlorodifluoromethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Chloromethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Vinyl chloride | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Bromomethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Chloroethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Trichlorofluoromethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,1-Dichloroethene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Acetone | ND | ug/kg | 61 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Carbon disulfide | ND | ug/kg | 12 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Methyl acetate | ND | ug/kg | 31 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Methylene chloride | ND | ug/kg | 73 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| trans-1,2-Dichloroethene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Methyl t-butyl ether (MTBE) | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,1-Dichloroethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| cis-1,2-Dichloroethene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 2-Butanone (MEK) | ND | ug/kg | 61 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Chloroform | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,1,1-Trichloroethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Cyclohexane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Carbon tetrachloride | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Benzene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |

# CALIBER ANALYTICAL SERVICES

## Certificate of Analysis

Haley & Aldrich, Inc
7921 Jones Branch Dr.
Suite 550
McLean, VA 22102

Date Sampled: 07/05/07 10:15
Date Received: 07/06/07 16:33
Date Issued: 07/10/07

Project: AOC-UST
Site Location: 14 E Street SW, DC
Project: Number 29210-003

SDG Number: 07070607

Field Sample ID: B-1 Soil | Matrix: Soil | Lab ID: 07070607-01

| | Result | Unit | LLQ | Method | Prepared | Analyzed | Init. |
|---|---|---|---|---|---|---|---|
| **Target Compound List - VOLATILES** | | | | | | | |
| 1,2-Dichloroethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Trichloroethene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Methylcyclohexane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,2-Dichloropropane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Bromodichloromethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| cis-1,3-Dichloropropene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Toluene | ND | ug/kg | 12 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| trans-1,3-Dichloropropene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,1,2-Trichloroethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Tetrachloroethene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 2-Hexanone (MBK) | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Dibromochloromethane | ND | ug/kg | 12 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,2-Dibromoethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Chlorobenzene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Ethylbenzene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| m&p-Xylene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| o-Xylene | ND | ug/kg | 12 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Styrene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Bromoform | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Isopropylbenzene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,3-Dichlorobenzene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,4-Dichlorobenzene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,2-Dichlorobenzene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,2-Dibromo-3-chloropropane | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| 1,2,4-Trichlorobenzene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Naphthalene | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Ethyl t-butyl ether (ETBE) | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| tert-Butanol (TBA) | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| Diisopropyl ether (DIPE) | ND | ug/kg | 31 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| tert-Amyl methyl ether (TAME) | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| tert-Amyl alcohol (TAA) | ND | ug/kg | 6 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| tert-Amyl ethyl ether (TAEE) | ND | ug/kg | 31 | EPA 8260B | 07/08/07 | 07/08/07 17:04 | CBS |
| **Total Petroleum Hydrocarbons - DRO (C10-C28)** | | | | | | | |
| Diesel Range Organics | ND | mg/kg | 14 | EPA 8015B | 07/09/07 | 07/10/07 14:03 | SAK |

# CALIBER ANALYTICAL SERVICES

## Certificate of Analysis

Haley & Aldrich, Inc
7921 Jones Branch Dr.
Suite 550
McLean, VA 22102

Date Sampled: 07/05/07 10:15
Date Received: 07/06/07 16:33
Date Issued: 07/10/07

Project: AOC-UST
Site Location: 14 E Street SW, DC
Project: Number 29210-003

SDG Number: 07070607

Field Sample ID: B-1 Soil  Matrix: Soil  Lab ID: 07070607-01

| | Result | Unit | LLQ | Method | Prepared | Analyzed | Init. |
|---|---|---|---|---|---|---|---|

Notes/Qualifiers:
LLQ- Lowest Level of Quantitation
ND - Not Detected at a concentration greater than or equal to the LLQ.
Results reported on a dry weight basis.

Approved by: Matt Cohen
QC Chemist

# CALIBER ANALYTICAL SERVICES

## Certificate of Analysis

Haley & Aldrich, Inc
7921 Jones Branch Dr.
Suite 550
McLean, VA 22102

Date Sampled: 07/05/07 8:30
Date Received: 07/06/07 16:33
Date Issued: 07/10/07

Project: AOC-UST
Site Location: 14 E Street SW, DC
Project: Number 29210-003

SDG Number: 07070607

Field Sample ID: B-2 Soil  Matrix: Soil  Lab ID: 07070607-02

| | Result | Unit | LLQ | Method | Prepared | Analyzed | Init. |
|---|---|---|---|---|---|---|---|
| **Percent Solids** | | | | | | | |
| Percent Solids | 78 | % | | SM2540B | 07/09/07 | 07/10/07 15:53 | SK |
| **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Acenaphthylene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Anthracene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Benzo[a]anthracene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Benzo[a]pyrene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Benzo[b]fluoranthene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Benzo[g,h,i]perylene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Benzo[k]fluoranthene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Chrysene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Dibenz[a,h]anthracene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Fluoranthene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Fluorene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Indeno[1,2,3-cd]pyrene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| 2-Methylnaphthalene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Naphthalene` | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Phenanthrene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| Pyrene | ND | ug/kg | 110 | EPA 8270C | 07/09/07 | 07/10/07 2:12 | CBS |
| **Target Compound List - VOLATILES** | | | | | | | |
| Dichlorodifluoromethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Chloromethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Vinyl chloride | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Bromomethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Chloroethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Trichlorofluoromethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,1-Dichloroethene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Acetone | ND | ug/kg | 52 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Carbon disulfide | ND | ug/kg | 10 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Methyl acetate | ND | ug/kg | 26 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Methylene chloride | ND | ug/kg | 62 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| trans-1,2-Dichloroethene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Methyl t-butyl ether (MTBE) | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,1-Dichloroethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| cis-1,2-Dichloroethene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 2-Butanone (MEK) | ND | ug/kg | 52 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Chloroform | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,1,1-Trichloroethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Cyclohexane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Carbon tetrachloride | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Benzene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |

# CALIBER ANALYTICAL SERVICES

## Certificate of Analysis

Haley & Aldrich, Inc
7921 Jones Branch Dr.
Suite 550
McLean, VA 22102

Date Sampled: 07/05/07 8:30
Date Received: 07/06/07 16:33
Date Issued: 07/10/07

Project: AOC-UST
Site Location: 14 E Street SW, DC
Project: Number 29210-003

SDG Number: 07070607

Field Sample ID: B-2 Soil | Matrix: Soil | Lab ID: 07070607-02

| | Result | Unit | LLQ | Method | Prepared | Analyzed | Init. |
|---|---|---|---|---|---|---|---|
| **Target Compound List - VOLATILES** | | | | | | | |
| 1,2-Dichloroethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Trichloroethene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Methylcyclohexane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,2-Dichloropropane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Bromodichloromethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| cis-1,3-Dichloropropene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/kg | 10 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Toluene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| trans-1,3-Dichloropropene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,1,2-Trichloroethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Tetrachloroethene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 2-Hexanone (MBK) | ND | ug/kg | 10 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Dibromochloromethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,2-Dibromoethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Chlorobenzene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Ethylbenzene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| m&p-Xylene | ND | ug/kg | 10 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| o-Xylene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Styrene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Bromoform | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Isopropylbenzene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,3-Dichlorobenzene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,4-Dichlorobenzene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,2-Dichlorobenzene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,2-Dibromo-3-chloropropane | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| 1,2,4-Trichlorobenzene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Naphthalene | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Ethyl t-butyl ether (ETBE) | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| tert-Butanol (TBA) | ND | ug/kg | 26 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| Diisopropyl ether (DIPE) | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| tert-Amyl methyl ether (TAME) | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| tert-Amyl alcohol (TAA) | ND | ug/kg | 26 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| tert-Amyl ethyl ether (TAEE) | ND | ug/kg | 5 | EPA 8260B | 07/08/07 | 07/08/07 17:35 | CBS |
| **Total Petroleum Hydrocarbons - DRO (C10-C28)** | | | | | | | |
| Diesel Range Organics | ND | mg/kg | 12 | EPA 8015B | 07/09/07 | 07/10/07 14:39 | SAK |

# CALIBER ANALYTICAL SERVICES

## Certificate of Analysis

Haley & Aldrich, Inc
7921 Jones Branch Dr.
Suite 550
McLean, VA 22102

Date Sampled: 07/05/07 8:30
Date Received: 07/06/07 16:33
Date Issued: 07/10/07

Project: AOC-UST
Site Location: 14 E Street SW, DC
Project: Number 29210-003

**SDG Number: 07070607**

**Field Sample ID: B-2 Soil** **Matrix: Soil** **Lab ID: 07070607-02**

| | Result | Unit | LLQ | Method | Prepared | Analyzed | Init. |
|---|---|---|---|---|---|---|---|

Notes/Qualifiers:
LLQ- Lowest Level of Quantitation
ND - Not Detected at a concentration greater than or equal to the LLQ.
Results reported on a dry weight basis.

Approved by: Matt Cohen
QC Chemist

# CALIBER ANALYTICAL SERVICES

## Certificate of Analysis

Haley & Aldrich, Inc
7921 Jones Branch Dr.
Suite 550
McLean, VA 22102

Date Sampled: 07/06/07 7:00
Date Received: 07/06/07 16:33
Date Issued: 07/10/07

Project: AOC-UST
Site Location: 14 E Street SW, DC
Project: Number 29210-003

SDG Number: 07070607

Field Sample ID: B-2 Water | Matrix: Water | Lab ID: 07070607-03

| | Result | Unit | LLQ | Method | Prepared | Analyzed | Init. |
|---|---|---|---|---|---|---|---|
| **Polynuclear Aromatic Hydrocarbons** | | | | | | | |
| Acenaphthene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Acenaphthylene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Anthracene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Benzo[a]anthracene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Benzo[a]pyrene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Benzo[b]fluoranthene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Benzo[g,h,i]perylene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Benzo[k]fluoranthene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Chrysene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Dibenz[a,h]anthracene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Fluoranthene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Fluorene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Indeno[1,2,3-cd]pyrene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| 2-Methylnaphthalene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Naphthalene` | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Phenanthrene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| Pyrene | ND | ug/L | 11 | EPA 8270C | 07/09/07 | 07/09/07 13:26 | CBS |
| **RCRA Metals** | | | | | | | |
| Lead | 63 | ug/L | 5 | EPA 6020A | 07/10/07 | 07/10/07 15:05 | MBC |
| **Target Compound List - VOLATILES** | | | | | | | |
| Dichlorodifluoromethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Chloromethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Vinyl chloride | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Bromomethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Chloroethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Trichlorofluoromethane | ND | ug/L | 5 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,1-Dichloroethene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,1,2-Trichlorotrifluoroethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Acetone | ND | ug/L | 10 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Carbon disulfide | ND | ug/L | 5 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Methyl acetate | ND | ug/L | 5 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Methylene chloride | ND | ug/L | 5 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| trans-1,2-Dichloroethene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Methyl t-butyl ether (MTBE) | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,1-Dichloroethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| cis-1,2-Dichloroethene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 2-Butanone (MEK) | ND | ug/L | 5 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Chloroform | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,1,1-Trichloroethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Cyclohexane | ND | ug/L | 5 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Carbon tetrachloride | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Benzene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |

# CALIBER ANALYTICAL SERVICES

## Certificate of Analysis

Haley & Aldrich, Inc
7921 Jones Branch Dr.
Suite 550
McLean, VA 22102

Date Sampled: 07/06/07 7:00
Date Received: 07/06/07 16:33
Date Issued: 07/10/07

Project: AOC-UST
Site Location: 14 E Street SW, DC
Project: Number 29210-003

SDG Number: 07070607

Field Sample ID: B-2 Water  Matrix: Water  Lab ID: 07070607-03

| | Result | Unit | LLQ | Method | Prepared | Analyzed | Init. |
|---|---|---|---|---|---|---|---|
| **Target Compound List - VOLATILES** | | | | | | | |
| 1,2-Dichloroethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Trichloroethene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Methylcyclohexane | ND | ug/L | 5 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,2-Dichloropropane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Bromodichloromethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| cis-1,3-Dichloropropene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/L | 5 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Toluene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| trans-1,3-Dichloropropene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,1,2-Trichloroethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Tetrachloroethene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 2-Hexanone (MBK) | ND | ug/L | 5 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Dibromochloromethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,2-Dibromoethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Chlorobenzene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Ethylbenzene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| m&p-Xylene | ND | ug/L | 2 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| o-Xylene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Styrene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Bromoform | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Isopropylbenzene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,3-Dichlorobenzene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,4-Dichlorobenzene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,2-Dichlorobenzene | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,2-Dibromo-3-chloropropane | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| 1,2,4-Trichlorobenzene | ND | ug/L | 2 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Naphthalene | ND | ug/L | 3 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Ethyl t-butyl ether (ETBE) | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| tert-Butanol (TBA) | ND | ug/L | 25 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| Diisopropyl ether (DIPE) | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| tert-Amyl methyl ether (TAME) | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| tert-Amyl alcohol (TAA) | ND | ug/L | 25 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| tert-Amyl ethyl ether (TAEE) | ND | ug/L | 1 | EPA 8260B | 07/09/07 | 07/09/07 19:40 | CBS |
| **Total Petroleum Hydrocarbons - DRO (C10-C28)** | | | | | | | |
| Diesel Range Organics | 0.39 | mg/L | 0.28 | EPA 8015B | 07/06/07 | 07/10/07 12:50 | SAK |

# CALIBER ANALYTICAL SERVICES

## Certificate of Analysis

Haley & Aldrich, Inc
7921 Jones Branch Dr.
Suite 550
McLean, VA 22102

Date Sampled: 07/06/07 7:00
Date Received: 07/06/07 16:33
Date Issued: 07/10/07

Project: AOC-UST
Site Location: 14 E Street SW, DC
Project: Number 29210-003

**SDG Number: 07070607**

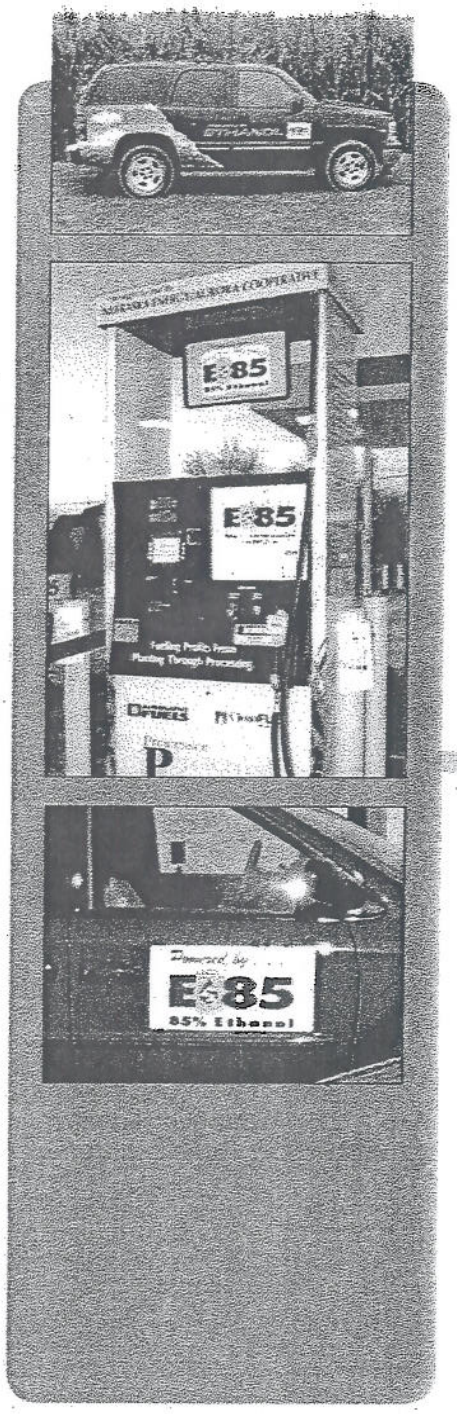
**Field Sample ID: B-2 Water** **Matrix: Water** **Lab ID: 07070607-03**

| | Result | Unit | LLQ | Method | Prepared | Analyzed | Init. |
|---|---|---|---|---|---|---|---|

Notes/Qualifiers:
LLQ- Lowest Level of Quantitation
ND - Not Detected at a concentration greater than or equal to the LLQ.

Approved by: Matt Cohen
QC Chemist

# 6.5 ADDITIONAL E85 INFORMATION




# Handbook for Handling, Storing, and Dispensing E85

U.S. Department of Energy
Energy Efficiency and Renewable Energy
Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable

Clean Cities

## Disclaimer

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# Acknowledgements

This publication was prepared by the National Renewable Energy Laboratory (NREL), a Department of Energy (DOE) national laboratory, with the assistance of the National Ethanol Vehicle Coalition (NEVC). The NEVC is a nonprofit advocacy organization that was established to promote the use of 85% ethanol as a renewable form of alternative transportation fuel while enhancing agricultural profitability, advancing environmental stewardship, and promoting national energy independence.

Every effort has been made to ensure that this manual is accurate, complete, and comprehensive at the time of publication. This manual is intended to be used as a guide and resource document. The authors strongly encourage all parties with an interest in establishing E85 fueling systems to engage professional support during installation to ensure fuel integrity and systems compatibility.

NREL and the NEVC would like to thank the Petroleum Equipment Institute for their support in identifying equipment and materials that are alcohol compatible.

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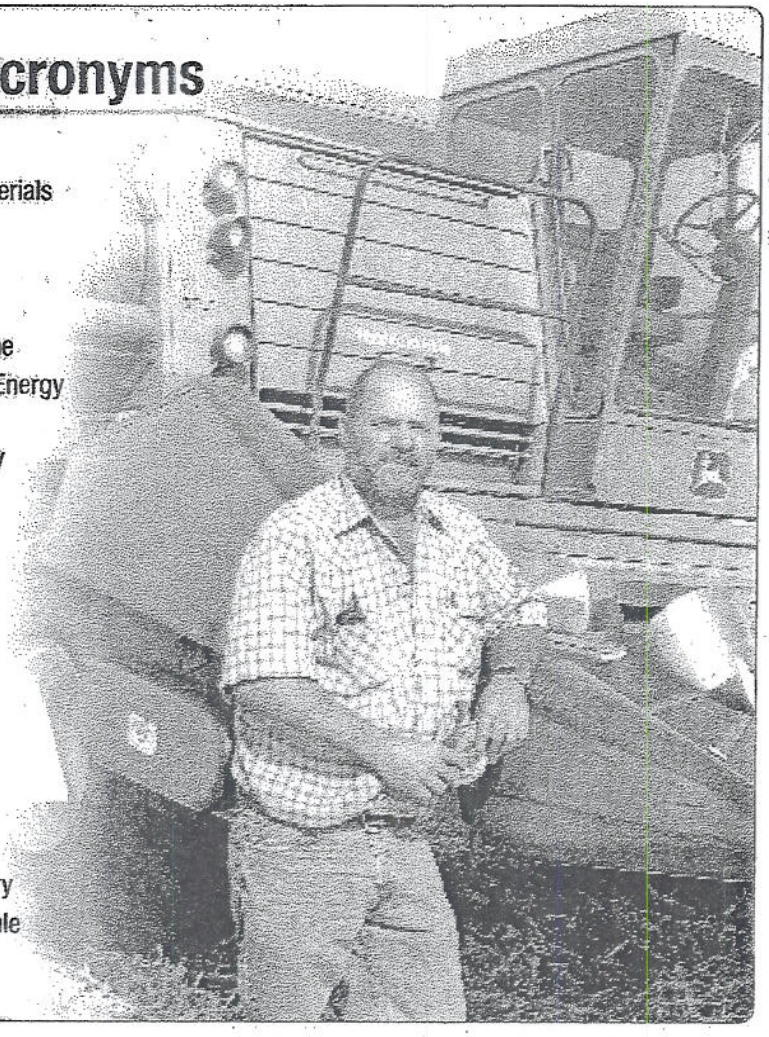
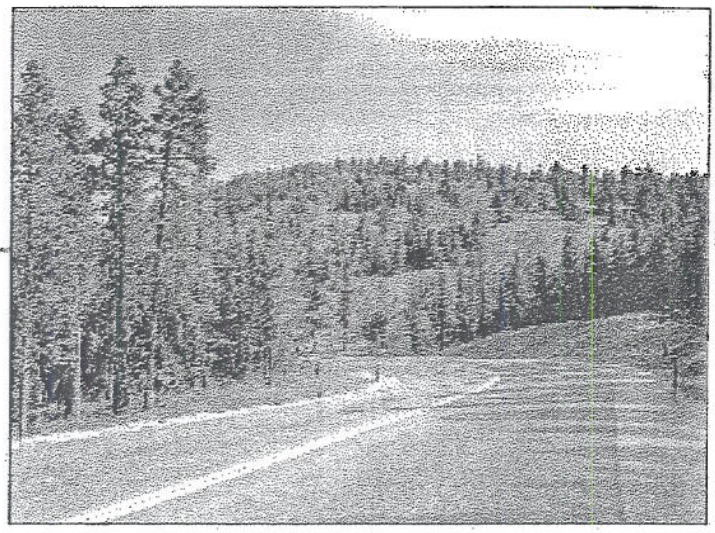
# Abbreviations and Acronyms

| | |
|---|---|
| AFV | alternative fuel vehicle |
| ASTM | American Society of Testing and Materials |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| DOE | U.S. Department of Energy |
| E85 | blend of up to 85% ethanol in gasoline |
| EERE | U.S. Department of Energy Office of Energy Efficiency and Renewable Energy |
| EPA | U.S. Environmental Protection Agency |
| EPAct | Energy Policy Act of 1992 |
| ETBE | ethyl tertiary butyl ether |
| FFV | flexible fuel vehicle |
| HC | hydrocarbon |
| LDV | light-duty vehicle |
| MSDS | materials safety data sheet |
| MTBE | methyl tertiary butyl ether |
| NEVC | National Ethanol Vehicle Coalition |
| NFPA | National Fire Protection Agency |
| NMHC | non-methane hydrocarbon |
| NREL | National Renewable Energy Laboratory |
| S&FP | State and Alternative Fuel Provider Rule |
| UL | Underwriters Laboratory, Inc. |



Warren Gretz, NREL/PIX 10489



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# Why Use Fuel Ethanol?

As concerns about our nation's dependence on foreign oil increase, and as Americans become more aware of the environmental impacts of petroleum use, interest in alternative fuels such as ethanol is increasing. In many ways ethanol is an ideal transportation fuel. It's better for the environment than petroleum, it is domestically produced, and its use supports farmers and rural economies. By switching to ethanol fuels and vehicle technologies, fleet owners are leading the way to both energy security and cleaner air.

Currently, 10% ethanol is added to approximately one third of all the gasoline used in the United States. Ethanol is added to gasoline today to fulfill oxygenate requirements for federal clean air programs, to increase octane, and to extend the petroleum fuel supply.

Another ethanol fuel, E85 (blend of up to 85% ethanol by volume), is gaining popularity. During the past several years, major automobile manufacturers have developed flexible fuel vehicles (FFVs) that can run on gasoline and E85 fuel. As of 2005, the National Ethanol Vehicle Coalition estimated that approximately 6 million FFVs have already been sold in the United States, although many buyers remain unaware that they may fuel with E85.

Wisconsin Clean Cities

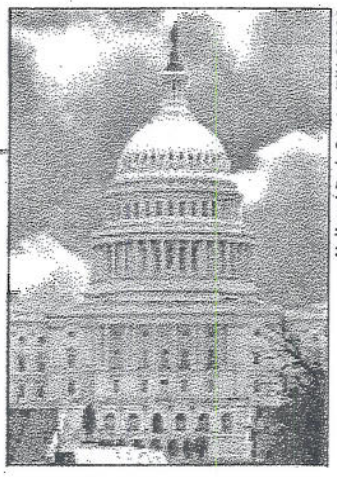
**Auto manufacturers that have produced FFVs**

- General Motors
- Daimler Chrysler
- Ford
- Isuzu
- Mazda
- Mercedes
- Mercury
- Nissan

To learn more about E85 FFVs, visit the Alternative Fuels Data Center's E85 Toolkit on the Web at *www.eere.energy.gov/afdc/e85toolkit/eth_vehicles.html.*

This guidebook contains information about EPAct alternative fuels regulations for fleets, FFVs, E85 properties and specifications, and handling and storage guidelines. The information provided in this guidebook is based on proven practices developed by experienced fuel providers, fleet managers, and vehicle manufacturers and describes how to successfully and safely use fuel ethanol, including E85, in vehicles.

# Energy Policy Act


National Park Service/PIX 05690

The Energy Policy Act of 1992 (EPAct) was passed to reduce our nation's reliance on foreign petroleum and improve air quality. Officially known as Public Law 102-486, EPAct includes provisions that address all aspects of energy supply and demand. In 2005 it was amended to include new transportation, solar, and other energy efficiency measures.

Several parts of EPAct were designed to encourage use of alternative fuels. Under EPAct, the following fuels are defined as alternative:

- Methanol, ethanol, and other alcohols
- Blends of 85% or more of alcohol (such as ethanol) with gasoline
- Natural gas and liquid fuels domestically produced from natural gas
- Liquefied petroleum gas (propane)
- Coal-derived liquid fuels
- Hydrogen
- Electricity
- Biodiesel (B100)
- Fuels (other than alcohol) derived from biological materials
- P-Series.

EPAct activities employ both voluntary and regulatory approaches to encourage changes necessary for building a self-sustaining alternative fuel market. EPAct's voluntary activities are implemented through DOE's Clean Cities initiative, which helps create markets for alternative fuels and vehicles through public/private partnerships in more than 80 U.S. cities.

Congress established several regulatory activities within EPAct that focus on building an inventory of Alternative Fuel Vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. For certain fleets, EPAct requires that a portion of their annual acquisitions of light-duty vehicles be AFVs. DOE's FreedomCAR and Vehicle Technologies Program manages these acquisition requirements through the following initiatives.

**Federal Fleet Requirements** - Federal fleet activities are shaped by the requirements of EPAct and Executive Order (E.O.) 13149. Under section 303 of EPAct, 75% of a federal fleet's new Light Duty Vehicle (LDV) acquisitions in a metropolitan area must be AFVs. Issued in April 2000, E.O. 13149 goes a step further by establishing a petroleum reduction goal of 20% compared to their fiscal year 1999 usage. Acquiring AFVs and using alternative fuels are integral parts of achieving this goal. Agencies are required to annually report compliance with EPAct and E.O. 13149 requirements. Both requirements apply to the major department level agencies within the federal government.

**State & Alternative Fuel Provider Rule** - The State & Alternative Fuel Provider Rule (S&FP) is authorized in Sections 501 and 507 of EPAct and applies to certain fleets in metropolitan areas. Under the regulation, 75% of a covered state fleet's annual light-duty vehicle acquisitions must be AFVs. For alternative fuel providers, the percentage of required AFVs is 90% of new LDVs. In addition to acquisition requirements, fuel provider fleets are required to use alternative fuels whenever possible. State and fuel provider fleets must also annually report compliance activity to DOE, which uses its authority to enforce the S&FP Rule.

**Alternative Fuel Designation Authority** - EPAct authorizes DOE to add fuels to the list of EPAct-authorized alternative fuels through rulemaking. Developers of new fuels can petition DOE with sufficient technical data to have them evaluated for possible inclusion.

For their request to be considered, petitioners must prove that the fuel:

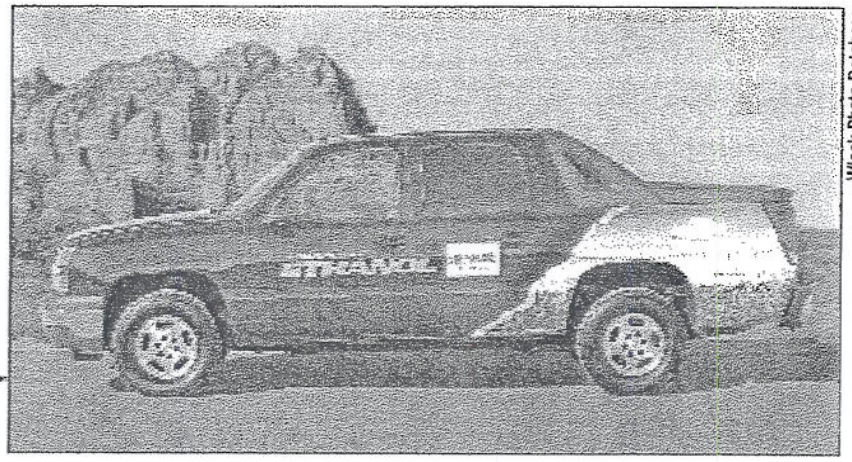
- Is substantially nonpetroleum,
- Yields substantial energy security benefits,
- Offers substantial environmental benefits.

One type of fuel, P-Series, was approved through this process. Other petitions have also been evaluated by DOE.

The EPAct regulatory initiatives have collectively put more than 150,000 AFVs on U.S. roadways. Manufacturers are now making more than 25 different models of light-duty AFVs—up from just a handful at the time of EPAct's passage in 1992. Additionally, there has been tremendous growth in fuel availability, particularly for ethanol and biodiesel.

For more information on EPAct, visit *www.eere.energy.gov/vehiclesandfuels/epact.*

# E85-Powered Flexible Fuel Vehicles




Wleck Photo Database

To safely and effectively operate a vehicle on E85, the vehicle must be compatible with alcohol use. Aftermarket conversion of gasoline-powered vehicles to ethanol-fueled vehicles, although possible, is not recommended because of the changes in component materials necessary, the high cost, and the need for extensive engine recalibration. Also, U.S. Environmental Protection Agency regulations restrict aftermarket conversions.

To resolve refueling infrastructure problems, automakers have developed vehicles called flexible-fuel vehicles (FFVs) that can operate on any blend of ethanol and gasoline, from 0% ethanol and 100% gasoline, up to 85% ethanol and 15% gasoline. FFVs are similar to gasoline vehicles; their main differences are the materials used in the fuel management system and modifications to the engine calibration system. There are no switches to flip, no additional fueling tanks or fuel dispensing systems required, and E85 can be handled in the same manner as gasoline.

E85 vehicles are refueled by pumping the fuel from a storage tank through a dispenser and hose, just like gasoline-powered vehicles. Differences in the fueling installations are discussed later in this guidebook. Although the alcohol content of the blend while it is in the storage tank may be specified, the alcohol content of the fuel after it has been dispensed to the vehicle may be different because it may mix with any fuel already in the vehicle's tank. However, the Powertrain Control Module (your vehicle's computer) automatically makes the adjustments your vehicle needs to operate on either gasoline or E85, making E85 use "transparent" to the driver.

Flexible-fuel vehicles manufactured by several major auto companies are available in the marketplace. These vehicles are fully warranted and available at no extra cost to the consumer. For a list of FFVs available for purchase, visit EERE's Vehicle Buyer's Guide for consumers (*www.eere.energy.gov/cleancities/vbg/consumers/e85.shtml*) or for fleets (*www.eere.energy.gov/cleancities/vbg/fleets/about_ethanol.html*).

**Always follow the manufacturer's recommendations for maintenance, lubricants, and replacement parts for the FFV. Training on ethanol-fueled vehicles is helpful for mechanics, but if the specified parts and lubricants are used, routine maintenance can be performed easily.**

Additional information can be found on the NEVC flexible fuel Web site (*www.e85fuel.com/e85101/flexfuelvehicles.php*), through the NEVC hotline, 877-485-8595, or by contacting your automobile dealer.

In order to advance the use of all forms of alternative transportation fuels, the federal government has established some incentives and credits for purchasing FFVs. For a list of state and federal incentives, visit the Alternative Fuels Data Center's State and Federal Incentives and Laws Web page at *www.eere.energy.gov/afdc/laws/incen_laws.html*.

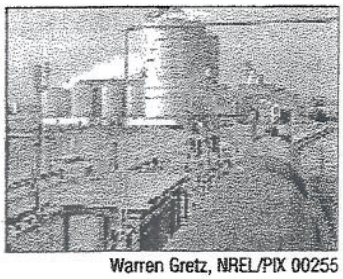
# Production, Properties, and Environmental Impacts

## Figure 1. Ethanol Distribution - From A to Z

A

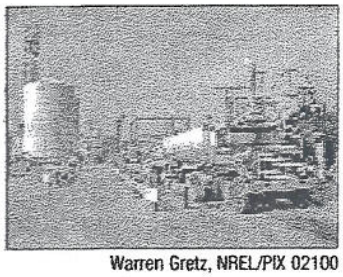
Chris Standlee/PIX 07265

Ethanol Production Facility



Warren Gretz, NREL/PIX 00255

Denatured Ethanol* Transported by Rail, Truck, or Barge

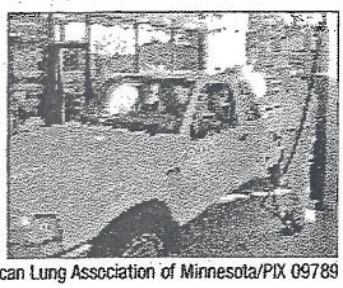


Warren Gretz, NREL/PIX 02100

Fuel Supplier

Warren Gretz, NREL/PIX 04061

Fuel Carrier



American Lung Association of Minnesota/PIX 09789

Fuel Marketer

Z

## Production

Ethanol is also known as ethyl alcohol or grain alcohol. Like gasoline, ethanol contains hydrogen and carbon, but ethanol also contains oxygen in its chemical structure. The oxygen makes ethanol a cleaner burning fuel than gasoline. It can be produced chemically from ethylene or biologically from grains, agricultural wastes, or any material containing starch or sugar. In the United States, ethanol is produced mainly from corn grown in the Midwest. One bushel of corn (approximately 56 pounds) produces 2.8 gallons of ethanol. During the production of

- 100% ethanol is produced at an ethanol production facility. Prior to transporting, the ethanol must be denatured.*
- The denatured ethanol is transported to the fuel supplier.
- Denatured ethanol is dispensed into the fuel supplier's ethanol storage tank—in the same manner as gasoline, kerosene, and diesel fuel.
- A fuel carrier orders a tanker full of E85 (85% denatured ethanol and 15% unleaded gasoline).
- The fuel supplier dispenses 8.5 parts denatured ethanol to 1.5 parts unleaded gasoline into the tanker truck.
- The fuel carrier delivers E85 to the retail fuel marketer for sale to the public.

* Denatured refers to the required "poisoning" of ethanol before it leaves the production plant. Typically, this is done by blending in 5% gasoline to ensure fuel ethanol is not consumed by humans.

ethanol from corn, only the starch is removed. The protein, vitamins, oil, and minerals remain for use by poultry, swine, cattle, or fish as a highly concentrated and valuable feed. Because ethanol can be produced from crops, it is classified as a "renewable fuel."

While beverage and fuel alcohols are basically produced in a similar manner, ethanol that will be used for fuel is denatured with a small amount (2%–5%) of some product, like gasoline, to make it unfit for human consumption.

## Physical Properties

The properties of E85 are listed in Table 1. Ethanol is a flammable, colorless liquid (E100 is clear like water) with a faint alcohol odor. The color of ethanol fuel blends depends on the color of the gasoline in the blend. Blends may also have a gasoline-like odor.

In the same way a gallon of gasoline contains approximately 12% less energy than a gallon of #2 diesel fuel; one gallon of E85 contains 27% less energy than gasoline. This results in a proportional reduction in fuel economy. A comparison of the properties of E85 to those of methanol, ethanol, and gasoline is found in Table 2.

## Emissions

According to the U.S. Federal Highway Administration, the average vehicle on the road today emits more than 4,600 pounds of pollution into the air each year. These harmful emissions include carbon monoxide, volatile organic compounds, particulate matter, oxides of nitrogen, and carbon dioxide. These emissions have significant health implications because they contribute to the amount of smog and carbon monoxide in our air. Carbon monoxide emissions have also been implicated in global warming.

**Table 1. Properties of Fuel Ethanol**

| Property | Comment |
|---|---|
| Vapor density | Ethanol vapor, like gasoline vapor, is denser than air and tends to settle in low areas. However, ethanol vapor disperses rapidly. |
| Solubility in water | Fuel ethanol will mix with water, but at high enough concentrations of water, the ethanol will separate from the water. |
| Energy content | For identical volumes, ethanol contains less energy than gasoline. On an energy basis, 1.0 gallon of E85 is equivalent to 0.72 gallons of gasoline. |
| Flame visibility | A fuel ethanol flame is less bright than a gasoline flame but is easily visible in daylight. |
| Specific gravity | Pure ethanol and ethanol blends are heavier than gasoline. |
| Conductivity | Ethanol and ethanol blends conduct electricity. Gasoline, by contrast, is an electrical insulator. |
| Stoichiometric fuel-to-air ratio | E85 needs more fuel per pound of air than gasoline; therefore, E85 cannot be used in a conventional vehicle. |
| Toxicity | Ethanol is less toxic than gasoline or methanol. Carcinogenic compounds are not present in pure ethanol; however, because gasoline is used in the blend, E85 is considered to be potentially carcinogenic. |
| Flammability | At low temperatures, the vapor concentration in an E85 tank can fall into the flammable range. The temperature for flammable E85 vapors depends on the E85 volatility. Although less likely than with E85, gasoline tanks can also contain flammable vapors at extremely low temperature. |

* In addition to the ethanol, one bushel of corn in a dry grind ethanol plant produces 18 lb. of Dried Distillers Grains with Solubles (DDGS), and 18 lb. of carbon dioxide ($CO_2$).

**Table 2. Comparison of Fuel Properties**

| Property | Methanol | Ethanol | Gasoline (87 Octane) | E85 |
|---|---|---|---|---|
| Chemical formula | $CH_3OH$ | $C_2H_5OH$ | $C_4$ to $C_{12}$ chains | * |
| Main constituents (% by weight) | 38 C, 12 H, 50 O | 52 C, 13 H, 35 O | 85–88 C, 12–15 H | 57 C, 13 H, 30 O |
| Octane (R+M)/2 | 100 | 98-100 | 86-94 | 105 |
| Lower heating value (Btu/lb) | 8,570 | 11,500 | 18,000-19,000 | 12,500 |
| Gallon equivalent | 1.8 | 1.5 | 1 | 1.4 |
| Miles per gallon compared to gasoline | 55% | 70% | – | 72% |
| Relative tank size to yield (driving range equivalent to gasoline) | Tank is 1.8 times larger | Tank is 1.5 times larger | 1 | Tank is 1.4 times larger |
| Reid vapor pressure (psi) | 4.6 | 2.3 | 8–15 | 6–12 |
| Ignition point - | | | | |
| Fuel in air (%) | 7–36 | 3–19 | 1–8 | * |
| Temperature (approx.) (°F) | 800 | 850 | 495 | * |
| Specific gravity (60/65°F) | 0.796 | 0.794 | 0.72–0.78 | 0.78 |
| Cold weather starting | Poor | Poor | Good | Good |
| Vehicle power | 4% power increase | 5% power increase | standard | 3%–5% power increase |
| Stoichiometric air/fuel ratio (by weight) | 6.45 | 9 | 14.7 | 10 |

* Depends on percentage and type of the hydrocarbon fraction.

One of the benefits of using E85 vehicles is a reduction in the amount of pollutants emitted into the air we breathe. In general, the type of emissions from vehicles using E85 will be similar to that from gasoline-powered vehicles, but the amount of the emissions will be less. The quantity of pollutants released depends on how well the vehicle's emissions control system captures and burns emissions and how well the engine is designed and "tuned" for using fuel ethanol. The emissions control systems found on ethanol-powered vehicles manufactured today have been engineered to meet or exceed all federal and state emissions control regulations.

Two types of emissions are released by all vehicles: exhaust and evaporative. Although compliance with federal and state regulations has already resulted in a decrease in exhaust emissions from gasoline-powered vehicles, ethanol-fueled vehicles can further reduce pollutant emissions by a modest, but meaningful, amount. Compared with gasoline-fueled vehicles, most ethanol-fueled vehicles produce lower carbon monoxide (CO) and carbon dioxide ($CO_2$) emissions and the same or lower levels of hydrocarbon (HC) and nonmethane hydrocarbon (NMHC) emissions. Nitrogen oxides (NOx) emissions are about the same for ethanol and gasoline vehicles.

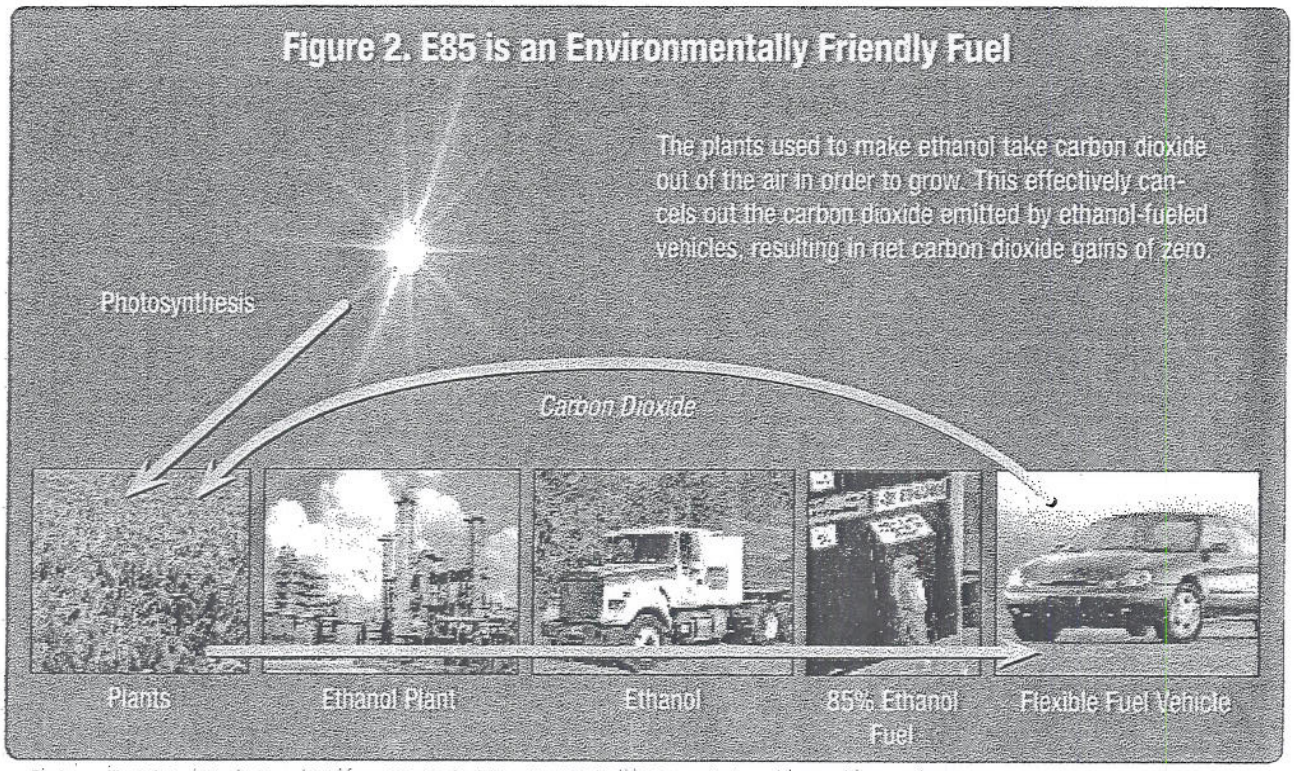
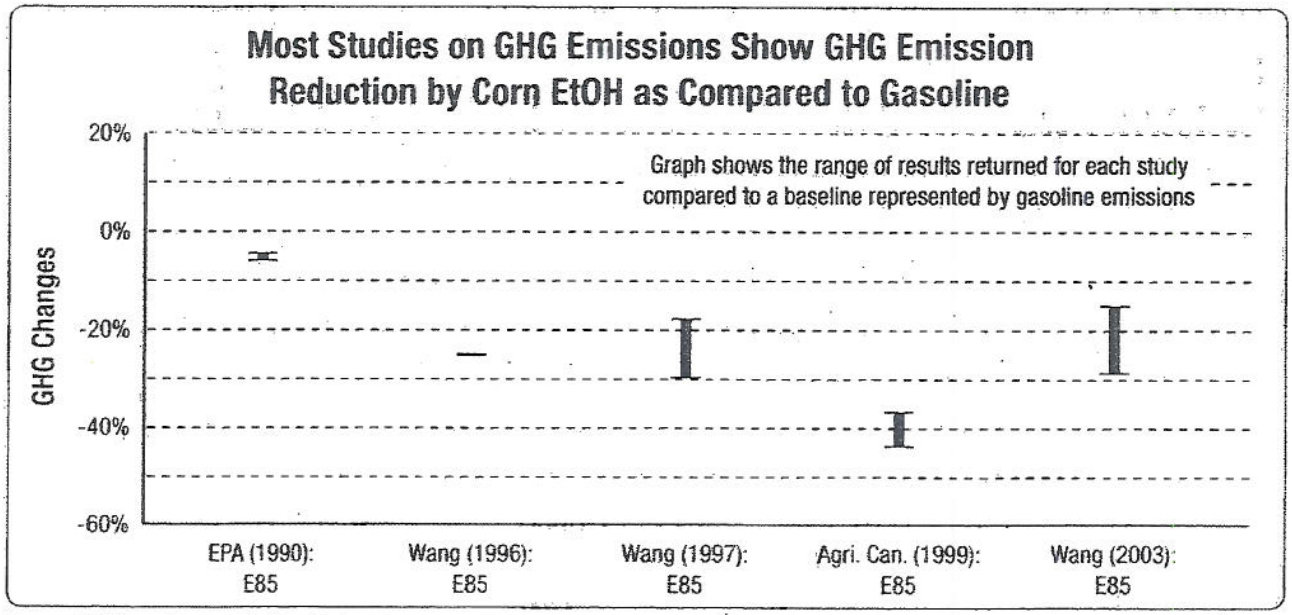


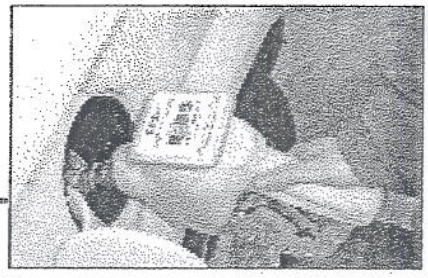

Photo credits, left to right, starting with "Ethanol Plant": Chris Standlee/PIX 07265; Warren Gretz, NREL/PIX 03875 and PIX 07133; Ford Motor Company/PIX 01548

Emissions resulting from fuel evaporation are a potential problem for any vehicle, regardless of the fuel. The build-up of heat in the engine compartment and sometimes even the heat reflected from the pavement onto the fuel tank can cause the most volatile parts of the fuel to boil off and leak into the air, causing pollution. E85 has a lower vapor pressure than the gasoline used for blending or E10 and so has fewer emissions resulting from evaporation.




*Source: M. Wang, Argonne National Laboratory*

# E85 Specifications & Standards


NEVC

While E85 is a liquid fuel that is handled in a manner similar to that of gasoline, the chemical properties of alcohol are different than those of gasoline and must be recognized when establishing a fuel handling standard.

To reduce the chance for failure or contamination of alcohol equipment and systems, select proper materials and control the fuel composition. Ethanol is not compatible with aluminum, and all aluminum products must be removed from a gasoline dispensing system that will to be used to dispense E85. The American Society for Testing and Materials (ASTM) and the Alliance of Automobile Manufacturers have established standards for E85. While the two standards are similar, only the ASTM standards (Table 3) are discussed in this section.

## ASTM Fuel Standard Specification

The ASTM standard specification for blended ethanol fuel, designated ASTM D5798, covers fuel blends for different seasons and geographical areas. These specifications, shown in Table 3, represent the minimum commercial standards and reflect the consensus of many stakeholders. The ethanol and hydrocarbon denaturant used in making fuel ethanol must meet the requirements of ASTM D 4806. (Specification D4806-01a—Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel.)

## Seasonally Adjusted Blends

The amount of alcohol in the fuel ethanol blend depends on the geographical region and the season. (A complete breakdown by volatility class for the geographical fuel regions can be found in Appendix A). In cold weather, more gasoline is added to the blend to ensure proper starting. A minimum of 70% by volume of alcohol is permitted in the winter blend by the ASTM fuel standard. This seasonal blending from 15% to 30% gasoline limits concerns about winter cold starting and are similar to seasonal adjustments of volatility (vapor pressure) used in gasoline blending throughout the United States.

## Hydrocarbons

The most common form of hydrocarbon used in the blending of E85 is unleaded gasoline. The hydrocarbon blended with the ethanol in E85 must comply with the same standards as gasoline. Depending on state regulations, the hydrocarbon may contain ethyl tertiary butyl ether (ETBE), methyl tertiary butyl ether (MTBE), or other aliphatic ethers as blending components. Natural gasoline is also commonly used to denature fuel ethanol.

## Fuel Additives

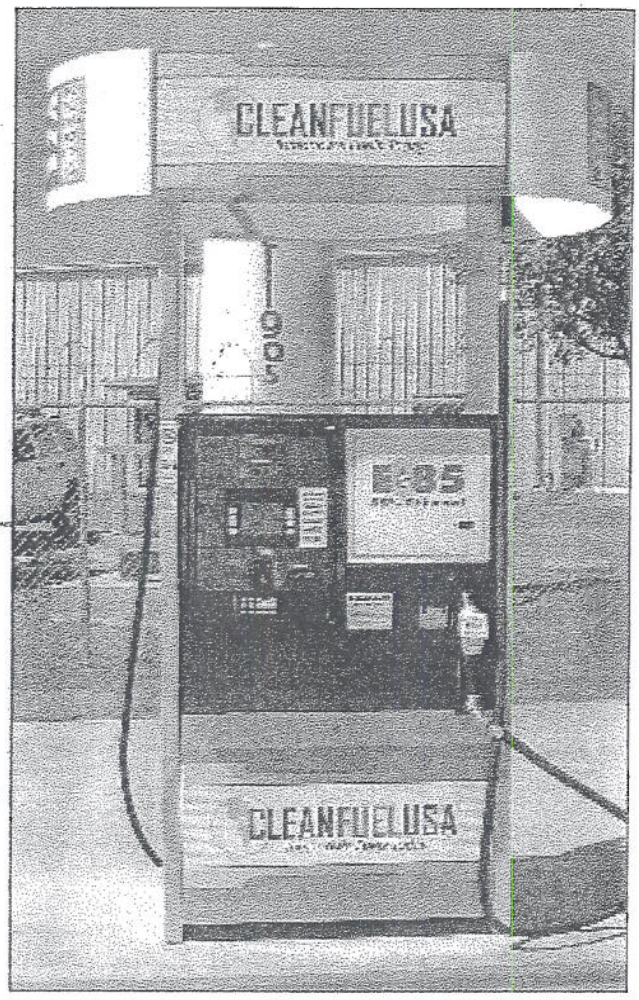
According to EPA regulations, all commercial grades of gasoline must contain certain additives, detergents, and corrosion inhibitors. In a finished blend of E85, any additives that were previously in the gasoline component are now contained in the E85 (although at reduced levels). While adding detergent additives to the hydrocarbon component of E85 is necessary, it is NOT necessary to add detergent additives based on the alcohol portion of the product. Overuse of additives with E85 may result in poor vehicle operation.

**Table 3. ASTM D 5798-99 Standard Specification for Fuel Ethanol for Automotive Spark-Ignition Engines**

| Property | Value for Class | | | Test Method |
|---|---|---|---|---|
| ASTM volatility class | 1 | 2 | 3 | N/A |
| Ethanol, plus higher alcohols (minimum volume %) | 79 | 74 | 70 | ASTM D5501 |
| Hydrocarbons (including denaturant) (volume %) | 17-21 | 17-26 | 17-30 | ASTM D4815 |
| Vapor pressure at 37.8°C - | | | | |
| kPa | 38–59 | 48–65 | 66–83 | ASTM D4953, D5190, D5191 |
| psi | 5.5–8.5 | 7.0–9.5 | 9.5–12.0 | - |
| Lead (maximum, mg/L) | 2.6 | 2.6 | 3.9 | ASTM D5059 |
| Phosphorus (maximum, mg/L) | 0.3 | 0.3 | 0.4 | ASTM D3231 |
| Sulfur (maximum, mg/kg) | 210 | 260 | 300 | ASTM D3120, D1266, D2622 |
| Methanol (maximum, volume %) | - | 0.5 | N/A | - |
| Higher aliphatic alcohols, C3-C8 (maximum volume %) | - | 2 | - | N/A |
| Water (maximum, mass %) | - | 1.0 | - | ASTM E203 |
| Acidity as acetic acid (maximum, mg/kg) | - | 50 | - | ASTM D1613 |
| Inorganic chloride (maximum, mg/kg) | - | 1 | - | ASTM D512, D7988 |
| Total chlorine as chlorides (maximum, mg/kg) | - | 2 | - | ASTM D4929 |
| Gum, unwashed (maximum, mg/100 mL) | - | 20 | - | ASTM D381 |
| Gum, solvent-washed (maximum, mg/100 mL) | - | 5.0 | - | ASTM D381 |
| Copper (maximum, mg/100 mL) | - | 0.07 | - | ASTM D1688 |
| Appearance | - | Product shall be visibly free of suspended or precipitated contaminants (shall be clear and bright | - | Appearance determined at ambient temperature or 21°C (70°F), whichever is higher. |

N/A = Not Applicable

# Materials Recommendations




NEVC

As is the case with all liquid fuels, it is vitally important that proper fuel handling techniques be practiced to prevent fuel contamination. Certain materials commonly used with gasoline may be incompatible with high-level alcohol blends. Some materials may degrade and contaminate the fuel, which may result in engine damage and poor performance. Even if engine parts do not fail, operating any vehicle with contaminated fuel can cause deposits that may eventually harm the engine. The materials and parts presented in this guidebook have been shown to perform well with E85.

Some materials degrade over time and in the presence of high-level alcohol blends. Zinc, brass, lead, and aluminum are some of the more sensitive metals. Terne (lead-tin-alloy)-plated steel, which is commonly used for gasoline fuel tanks, and lead-based solder are also incompatible with E85. Avoid using these metals because of the possibility of fuel contamination and potential difficulties with vehicle driveability. Unplated steel, stainless steel, black iron, and bronze have shown acceptable resistance to ethanol corrosion.

Nonmetallic materials that degrade when in contact with fuel ethanol include natural rubber, polyurethane, cork gasket material, leather, polyvinyl chloride (PVC), polyamides, methyl-methacrylate plastics, and certain thermoplastic and thermoset polymers. Nonmetallic materials that have been successfully used for transferring and storing fuel ethanol include thermoset reinforced fiberglass, thermoplastic piping, and thermoset reinforced fiberglass tanks as listed by Underwriters Laboratories, Inc. Buna-N, Neoprene rubber, polypropylene, nitrile, Viton, and Teflon materials may also be used with E85.

# Storing and Dispensing E85

St. Louis Regional Clean Cities

The same technologies used to store and dispense gasoline and diesel fuels are used for alcohol-based fuels because, like gasoline, they are liquid at ambient pressures and temperatures. However, only E85 compatible materials should be used in the storage and dispensing systems.

Most operating problems with ethanol-fueled vehicles have been traced to contaminated fuel. Consequently, choosing the right materials for fuel storage and dispensing systems and following proper fuel-handling procedures are crucial for successfully operating ethanol-fueled vehicles. Although material research and testing is expected to continue, the parts and materials discussed in this guidebook have performed well with E85.

## Using Existing Fueling Systems

In many cases, existing gasoline and diesel fuel systems may also be used to store and dispense E85. Most metal underground storage tanks that meet the U.S. Environmental Protection Agency (EPA) December 1998 codes, can be used to store E85. Many underground fiberglass tanks that meet the EPA standards may also be used to store E85. However, fiberglass storage tanks manufactured before 1992 should NOT be used with E85. If you are considering the use of an existing fiberglass underground storage tank (UST) that was manufactured before 1992, contact the NEVC for additional information.

If an existing UST will be used to store E85 and if the tank is either metal or fiberglass that is certified for E85, the following steps should be taken.

**Important! Before planning any fuel storage system, check your local building and fire codes. While E85 falls under the same handling and storage requirements as gasoline within the provisions of National Fire Protection Agency (NFPA) Standards 30 and 30A, local fire provisions and regulations MUST be considered. See Safety Codes on page 19.**

## Tanks

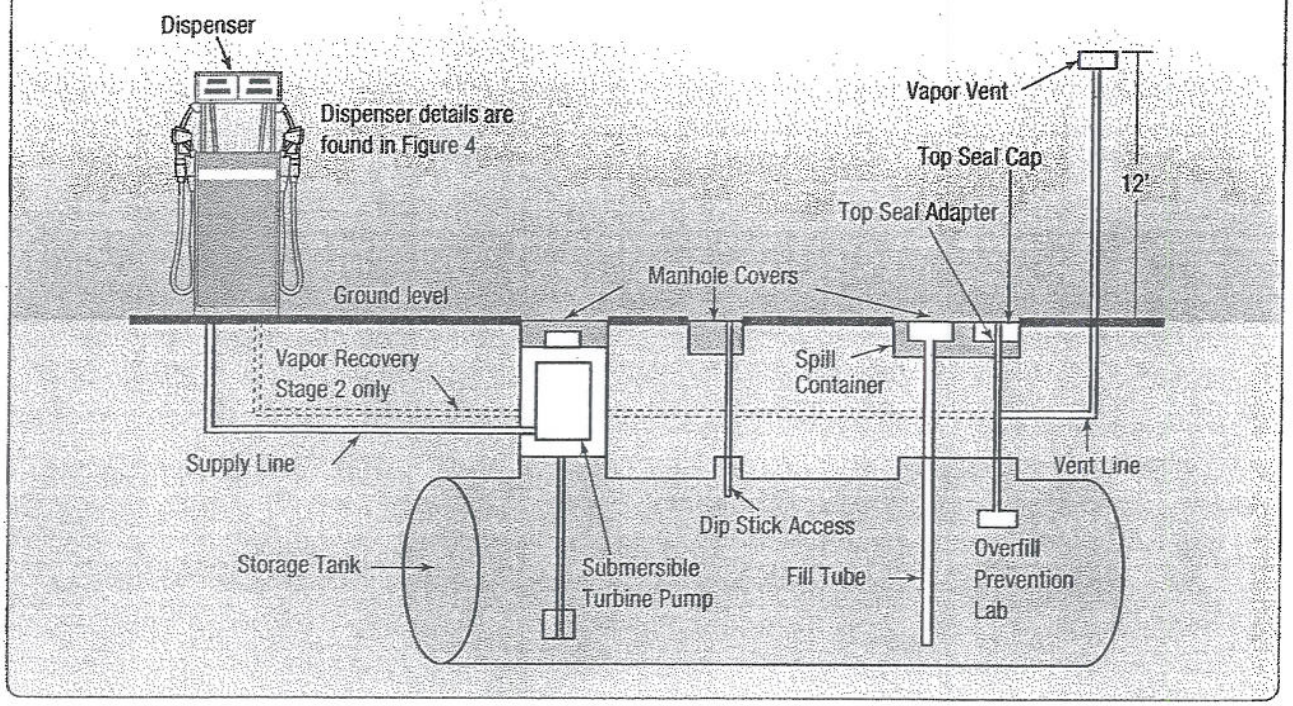
### Cleaning tanks

If another type of fuel was stored in the tank you are planning to use for E85, the tank must be cleaned. During storage, particles and moisture can build up over time to form sludge or what is called "water bottoms." Since ethanol is miscible with water, when introducing E85 or another ethanol blend into a dirty storage tank, ethanol's "cleaning action" will mix with the water bottoms and remove the sludge and result in contaminated fuel. A simple tank cleaning will prevent any problems.

There are several methods for cleaning sludge from storage tanks. Each of the cleaning methods listed below must be completed by a certified and bonded company that is familiar with cleaning petroleum storage tanks.

- *Optic Sweep.* This patented system uses a fiber optic camera and controllable probe with an extraction device that can visually inspect and clean fuel storage tank bottoms at any fuel level and with no tank downtime. The Optic Sweep

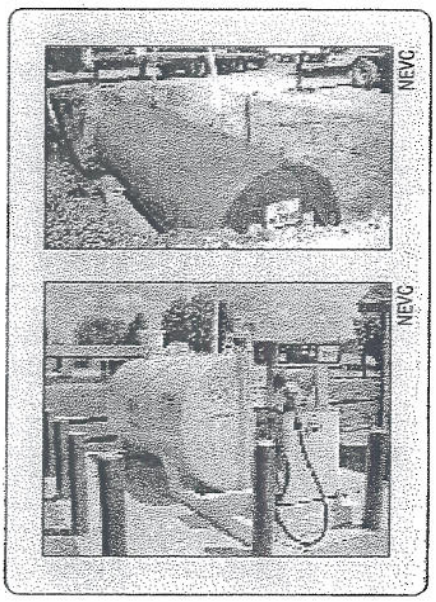
## Figure 3. Typical E85 Underground Storage System




can locate and remove water, sludge, bacteria, rust particles, and sediment while customers continue to pump.

- *Steam Cleaning.* This involves physically entering the tank and steam cleaning the tank and removing sludge. Care must be taken to properly dry the tank.
- *Filter Agitator.* The agitating device is lowered into the tank. The fuel and any debris are agitated and circulated. A filtration system removes the suspended debris.
- *Chemical Solvents.* Chemical solvents are used to remove scale and debris. Liquid and debris are then pumped from the tank and disposed.

Choosing the appropriate cleaning techniques will depend on your particular situation, the type of fuel that has been stored in the tank, availability of the service, and state and local environmental regulations.



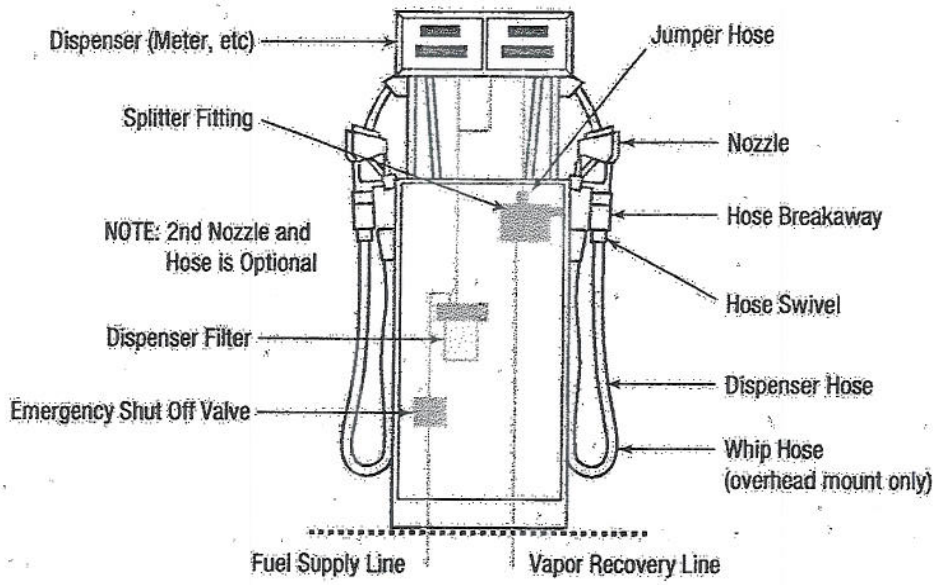

### Underground Tanks

You can use double-walled, low-carbon, cold-finished steel tanks, but welded tanks are preferable and must be corrosion protected to meet EPA requirements. Do not use plated-metal tanks. Pre-1992 single- and double-wall fiberglass tanks may be used when listed by Underwriters Laboratories, Inc.

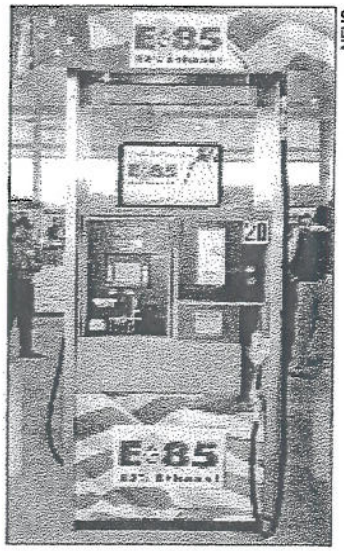
### Aboveground Tanks

Several companies manufacture aboveground storage tanks that may be used for E85. Generally, aboveground storage tanks are smaller than USTs and are typically installed in capacities of 1000 to 2000 gallons. Tanks may be constructed of stainless steel, cold-finished steel, or fiberglass. The use of plated metal tanks is generally not recommended.

**Figure 4. E85 Dispensing Equipment**




## Dispensers



NEVC

Companies that produce E85 compatible pump dispensers can be found at *www.pei.org/e85/*. The E85 dispenser must use iron, unplated steel, or stainless steel in the fuel path. In the case of vane-type pumps, avoid impellers made from soft metals (zinc, brass, lead, aluminum). Steel or an engineering polymer with a high chemical resistance will give excellent results. Use of non-compatible dispenser materials may lead to premature meter inaccuracies and introduction of contaminants into the fuel.

### General Dispensing Equipment

Dispenser hoses, nozzles, and fitting connectors are the same for aboveground and underground fuel-storage systems. The items common to both systems are discussed in this section. Parts that differ for aboveground and underground installations are discussed in the sections that follow. Again, your supplier can help you obtain E85-compatible parts and equipment or visit *www.pei.org/e85/* for an updated list of alcohol compatible equipment.

Avoid any components made from zinc, brass, lead, aluminum, or other soft metals; the ethanol fuel may cause leaching from such soft metals, which may contaminate the vehicle's fuel system and could potentially result in poor vehicle performance.

### Fill Pipes

Fuel enters the fueling site dispensing system at the point the fuel is "dropped" from the truck through the storage tank fill pipe. Over the last several years, major component manufacturers, such as OPW and Bartush, have converted many of their gaskets, tubes, adapters, piping, and shear valves to be compatible with ethanol blended gasoline and E85. Anodized coatings or components made of cast-iron or stainless steel are available to use with E85.

### Pumps and Leak Detection Equipment

Pressurized and suction fueling systems require different types of leak detection equipment. Suction systems have a pump within the fuel dispenser, while pressurized pumps pump the fuel out of the tank to the dispenser. Typically, pressurized systems will require

both continuous and periodic leak detection as well as other line tightness testing and other precautions. If a suction system has a check valve solely at the dispenser, leak detection testing may not be required, and there may be fewer line testing requirements.

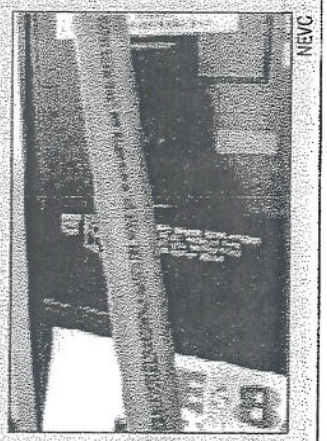
### Piping

The best choice for underground piping is non-metallic, corrosion-proof pipe. New fiberglass pipe should pose no problems when used with E85 systems; however, ask for a product that has been tested for alcohol compatibility (ethanol and methanol) according to UL971. Presently, flex piping is tested to the same Underwriters Laboratory standard; however, methods may change in the near future. Equipment vendors will want to watch for updated information of flex piping certifications. Presently, flex piping companies, such as Environ Products, claim their product may be used with E85. Schedule 40 black iron pipe and galvanized pipe may be used, but will require corrosion protection. Pipe thread sealant, when needed, must be a Teflon tape or Teflon-based pipe-thread compound. If secondary piping is needed, thermoset reinforced fiberglass or thermoplastic double-wall piping should be used.

### Fuel Filters

The dispenser filter is the last line of defense before the fuel reaches a vehicle's tank. Typically, a 30-micron filter is used with diesel fuel and a 10-micron filter is used with gasoline. E85 dispensers should use a 1- or 2-micron filter. The smaller pores will prevent contaminated fuel from causing fuel pump and engine problems. This is especially important with tanks that have been converted to E85.

*Always use a 1-micron alcohol dispenser filter with E85.*




*Always use an E85-compatible hose on E85 dispensers.*

### Hoses

Dispenser hosing for E85, as with gasoline, will vary with the type of vapor recovery system that is required in your area. Stage II vapor recovery systems require different fueling hose systems than do areas with stage I-only systems. For E85, always use the hose with the highest resistance to alcohol, as some E85 will always be in contact with the inside of the hose. Goodyear Tire & Rubber Company is one well-known producer of alcohol-resistant hoses. Any hose material deemed to be "100% methanol compatible" will be safe to use with E85, as methanol can be considerably more corrosive.

### Nozzles

Do not use aluminum nozzles with E85 fueling systems. Several companies manufacture stainless steel or nickel-plated nozzles that are compatible with E85. These may be slightly more expensive than the more common aluminum variety.

### Fittings and Connectors

All fittings, connectors, and adapters that will be in contact with the fuel blend should be made of materials like stainless steel (best choice), black iron, or bronze to avoid degradation. If aluminum or brass fittings are used, they must be nickel-plated to avoid any contact between the bare metal and the fuel ethanol.

## Signs

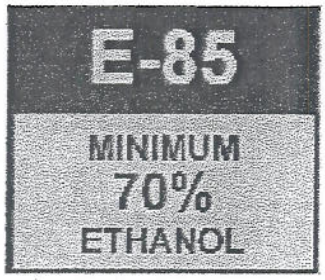
The tanks containing ethanol fuel must be labeled. A bronze pentagon, as shown at right, with "E85" in black must label the fillbox and fillbox cover.

The E85 labels should be placed on the fillboxes and fillbox cover in one of the following ways:

- Paint the decal on the top of the cover or on the rim of the fillbox
- Attach a tag to the fillpipe adapter
- Screw a tag into the fillbox rim
- Fit a plastic or fiberglass insert into the rim of the fillbox.

Each state, along with the U.S. Department of Transportation, has developed signage to place at refueling stations. You should contact your state Department of Transportation to obtain the correct signage for your area.

The Federal Trade Commission requires a small sticker to be placed on the face of the fuel-dispenser as close as possible to the price per unit of fuel. The sticker should have a black background with orange text. You may receive one of these stickers by contacting the National Ethanol Vehicle Coalition at nevc@e85fuel.com or calling (877) 485-8595.




## E85 Quality Assurance

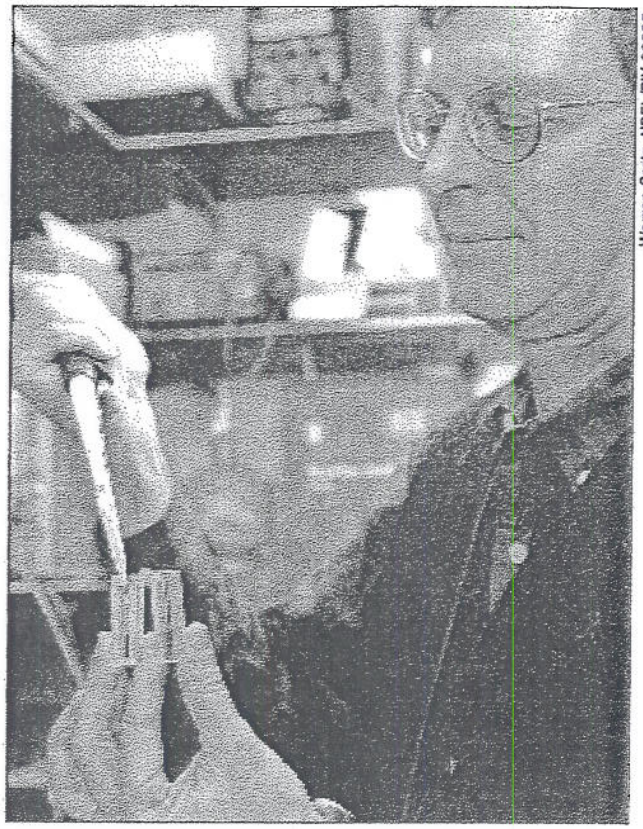
Once your E85 refueling station has been installed, taking simple operational precautions can assure fuel quality. Periodically checking the fuel properties will avoid costly damage to vehicles operating on E85. Some of these checks may be performed in the field, but others may require the services of a specialized laboratory. A list of some of these laboratories may be obtained by visiting the Alternative Fuels Data Center E85 Fleet Toolkit at *www.eere.energy.gov/afdc/e85toolkit/.*

After the refueling station has reached normal operation, test the fuel periodically. At a minimum, the following items should be checked every 1 to 2 months, depending on how frequently the station is used:

- Electrical conductivity (see Appendix D).
- Particulate content
- Hydrocarbon content (see Appendix D)
- Reid vapor pressure.

## Shipping Procedures

To ensure the high quality of your fuel, it may be wise to occasionally send a sample of your fuel ethanol to a laboratory for analysis. Your fuel provider may be able to recommend a laboratory in your area that can perform this type of test. To safely ship a sample of the fuel, follow all of your shipper's requirements for hazardous materials. Be sure that the following information appears on the outside of the package:


Warren Gretz, NREL/PIX 09835

- DOT Shipping Name: Alcohol n.o.s. (ethanol, gasoline)
- Identification Number: UN 1987
- Diamond Labels: Flammability 3
- Label: "Flammable Liquid"
- Arrow Label: "This End Up"

Using a 1-gallon container compatible with ethanol is recommended. The SturdeeSeal UN 4G gasoline combination package is one product on the market that has been successfully used for this purpose. The combination package contains an unmarked 1-gallon metal can with an epoxy phenolic lining, fiberboard, polyethylene bag, and closing tape.

FEMA

# Safety Procedures

## Health Considerations

Treat fuel ethanol with a high degree of respect, just as you would any fuel. Minimize exposure to the fuel. Like gasoline, fuel ethanol is flammable, poisonous, and may contain additives that are harmful, even in casual contact. Do not confuse fuel ethanol with alcohol intended for human consumption—fuel ethanol can poison and kill you. Never drink fuel ethanol!

Exposure to fuel ethanol can occur by breathing its vapors (inhalation), getting it on the skin or in the eyes (skin adsorption), or accidentally swallowing it (ingestion). The following symptoms of exposure to fuel ethanol may appear immediately:

- Dullness of memory and concentration
- Impaired motor coordination
- Drowsiness, stupor, and finally unconsciousness.

The first-aid treatment needed will depend on the type of exposure:

*For inhalation,*

- Move away from the vapors to fresh air
- Contact medical personnel.

*For skin adsorption,*

- Wash the skin with soap and rinse with large quantities of water
- Remove contaminated clothing
- Contact medical personnel.

*For eye adsorption,*

- Flush the eyes with water for at least 15 minutes
- Contact medical personnel.

**Contact medical personnel immediately in cases of exposure**

*For Ingestion,*

- Have the person lie down and keep him/her warm
- Do not induce vomiting
- Contact medical personnel immediately.

## Fire Safety Considerations

Fuel ethanol fires, like all fires, should be taken seriously. An E85 fire should be handled like a gasoline fire. Use a $CO_2$, halon, or dry chemical extinguisher that is marked B, C, BC, or ABC. An alcohol-type or alcohol-resistant (ARF) foam may be used to effectively combat fuel ethanol fires. Never use water to control a fire involving high-concentration fuel ethanol such as E85.

Before constructing any refueling installations, consult your local fire marshall. Regulations governing the safe handling of fuel ethanol may vary from area to area. Consult with local officials about which regulations apply in your area.

## Safety Codes

The safety standards for handling and storing E85 are the same as those for gasoline. The National Fire Protection Agency (NFPA) has two standards that apply to fuel ethanol blends: NFPA 30, "Flammable and Combustible Liquids Code," and NFPA 30A, "Automotive and Marine Service Station Code." These codes contain information on refueling facilities, storage, and handling requirements for all flammable and combustible liquids. NFPA assigns ethanol fuels (including E100 and E85) to the same class as gasoline. Contact your local fire marshall or the NFPA for copies of these standards.

A Material Safety Data Sheet (MSDS) for E85 is shown in Appendix C.

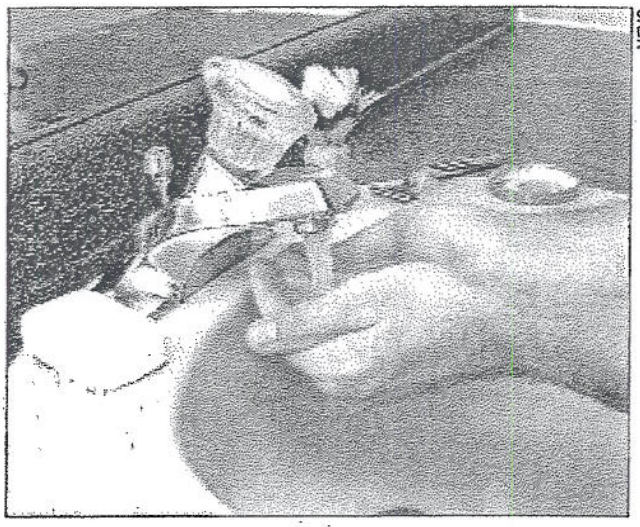
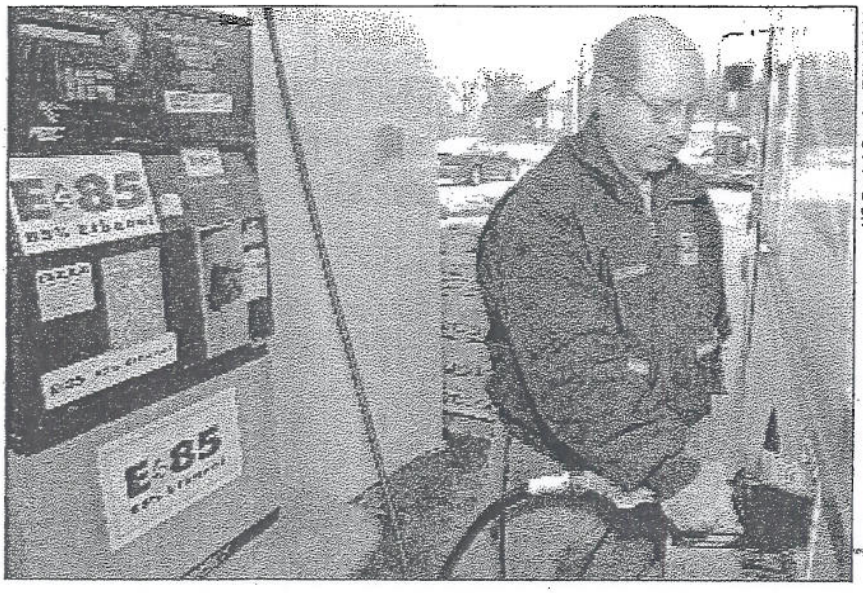

NEVC

**Table 4. First Aid Treatments for Exposure to Fuel Ethanol**

**Symptoms of Exposure**

- ✓ Dullness of memory and concentration
- ✓ Impaired motor coordination
- ✓ Drowsiness, stupor, and finally coma

| Exposure | First Aid Treatment | Treatment Compared to Gasoline Exposure |
|---|---|---|
| Inhalation | Move away from the vapors to fresh air and contact medical personnel. | Same |
| Skin absorption | Wash the skin with soap and rinse with large quantities of water, remove contaminated clothing, and contact medical personnel. | Same |
| Eye absorption | Flush the eyes with water for at least 15 minutes and contact medical personnel. | Same |
| Ingestion | Have the person lie down and keep him/her warm; do not induce vomiting; contact medical personnel immediately. | Different |




US Postal Service/PIX 13812

*A Northland Minnesota District letter carrier fills up his FFV with E85 at a nearby fueling station.*

# Case Study

## USPS Delivers Alternative Fuel Success

The Northland District of the U.S. Postal Service (USPS) believes in using E85. Considering its home base of Minnesota, this attitude is not surprising. The state has more than 200 ethanol fueling sites—the highest concentration in the country.

The Northland District provides mail service for most of Minnesota and part of Wisconsin and is a valuable partner of the Twin Cities Clean Cities Coalition (TC4). Its AFVs of choice are flexible fuel vehicles (FFVs), which are capable of using gasoline or gasoline-ethanol mixtures up to E85. "We have the opportunity to use E85 because so many stations offer E85 in Minnesota," says Robert Kunowski, the Northland District's Manager of Vehicle Maintenance. "We should be leaders because we have the opportunity."

The USPS Northland District is covered under Executive Order 13149, which requires federal fleets to reduce petroleum consumption by 20%, compared to their FY 1999 consumption levels. The district is also covered under the Energy Policy Act of 1992, which requires federal fleets to acquire AFVs as 75% of their light-duty vehicle acquisitions each year.

Of the district's 3,594 light-duty vehicles, 525 are FFVs. These include 324 light delivery trucks, 167 minivans, and 34 administrative vehicles. The district tracks fuel use for the light delivery trucks, which mainly fuel at commercial stations. In 2004, the trucks used 214,000 gallons of E85, up 29% from the year before. Kunowski estimates that the FFV delivery trucks use E85 85% to 90% of the time.

How has the Northland District achieved such high E85 use? "We position our FFVs so they are near stations that offer E85," says Kunowski. "And if FFV drivers don't use E85, we take the vehicles away from them and assign them to drivers who will use E85." This is a big incentive to use E85 because the district's non-FFV delivery trucks are 10 to 20 years old, and drivers much prefer the model year 2000-2001 FFVs. The district's 2005 goal is 95% E85 use among its FFV delivery trucks.

Asked to give advice on establishing a successful alternative fuel program, Kunowski emphasizes the importance of an accurate fuel use tracking system. "You have to have good facts and data to make good decisions," he says. He also stresses educating managers and staff on E85 goals and procedures and designing the program to be cost effective. "You need to balance the cost with the environmental benefits of alternative fuels," says Kunowski. "And remember, we only get one environment."

# For More Information

## General

U.S. Department of Energy
Alternative Fuels Data Center
E85 Fleet Toolkit
*www.eere.energy.gov/afdc/e85toolkit/*

National Ethanol Vehicle Coalition
33216 Emerald Lane, Suite C
Jefferson City, MO 65109
(573) 635-8445/Toll-free (877) 485-8595
*www.e85fuel.com*

National Renewable Energy Laboratory
1617 Cole Blvd.
Golden, CO 80401-3393
*www.nrel.gov*

Governors' Ethanol Coalition
P.O. Box 95085
Lincoln, NE 68509
*www.ethanol-gec.org*

National Corn Growers Association
632 Cepi Drive
Chesterfield, MO 63005
636-733-9004
*www.ncga.com*

Renewable Fuels Association
One Massachusetts Avenue, NW - Suite 820 W
Washington, DC 20001
202-289-3835
*www.ethanolrfa.org/*

U.S. Environmental Protection Agency
Office of Transportation and Air Quality
*www.epa.gov/otaq/consumer/fuels/altfuels/altfuels.htm*

## Ethanol Fuel Codes and Safety

Alternative Fuels Data Center
E85 Fleet Toolkit
*www.eere.energy.gov/afdc/e85toolkit/*

National Fire Protection Association
1 Batterymarch Park
Quincy, Massachusetts 02169-7471
617-770-3000
*www.nfpa.org*

## Standards

ASTM International
100 Bar Harbor Drive
West Conshohocken, PA 19428-2959
Publications and Customer Service
610-832-9500
*www.astm.org*

Society of Automotive Engineers
400 Commonwealth Drive
Warrendale, PA 15096-0001
724-776-4841
*www.sae.org*

## Equipment

Petroleum Equipment Institute
Ethanol Compatible Equipment Guide
*www.pei.org/e85/*

Fiberglass Tank and Pipe Institute
11150 South Wilcrest Dr., Suite 101
Houston, TX 77099-4343
*www.fiberglasstankandpipe.com/*

## Flexible-Fuel Vehicles

Alternative Fuels Data Center
*www.eere.energy.gov/afdc/afv/eth_vehicles.html*
*and*
*www.eere.energy.gov/afdc/e85toolkit/eth_vehicles.html*

National Ethanol Vehicle Coalition
Flexible-Fuel Vehicle Listing
*www.e85fuel.com/e85101/flexfuelvehicles.php?topic=For%20Fleets*

## Appendix A: Geographical Fuel-Marketing Regions

| State and Fuel Marketing Region | Volatility Class by Month | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan | Feb | Mar | April | May | June | July | Aug | Sept | Oct | Nov | Dec |
| Alabama | 2 | 2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1 | 1/2 | 2 | 2 |
| Alaska | | | | | | | | | | | | |
| Southern Region | 3 | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1/2 | 2/3 | 3 | 3 | 3 |
| South Mainland | 3 | 3 | 3 | 3 | 3/2 | 2/1 | 1/2 | 2 | 2/3 | 3 | 3 | 3 |
| Arizona | | | | | | | | | | | | |
| North of 34° lat & E. of 111° long. | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| Remainder south of 34° | 2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1 | 1 | 1/2 | 2 | 2 |
| Arkansas | 3 | 3 | 3/2 | 2/1 | 1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| California | | | | | | | | | | | | |
| North Coast | 2 | 2 | 2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2 |
| South Coast | 2 | 2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1 | 1/2 | 2 | 2 |
| Southeast | 3 | 3/2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| Interior | 2 | 2 | 2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2 |
| Colorado | | | | | | | | | | | | |
| East of 105° longitude | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| West of 105° longitude | 3 | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1/2 | 2/3 | 3 | 3 | 3 |
| Connecticut | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| Delaware | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| District of Columbia | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| Florida | | | | | | | | | | | | |
| North of 29° latitude | 2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1 | 1 | 1/2 | 2 | 2 |
| South of 29° latitude | 2 | 2/1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1/2 | 2 |
| Georgia | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 |
| Hawaii | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Idaho | 3 | 3 | 3 | 3/2 | 2 | 2 | 2/1 | 1/2 | 2 | 2/3 | 3 | 3 |
| Illinois | | | | | | | | | | | | |
| North of 40° latitude | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| South of 40° latitude | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| Indiana | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| Iowa | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| Kansas | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| Kentucky | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1.2 | 2 | 2/3 | 3 |
| Louisiana | 2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1 | 1 | 1/2 | 2 | 2 |
| Maine | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| Maryland | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| Massachusetts | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| Michigan | | | | | | | | | | | | |
| Lower Peninsula | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| Upper Peninsula | 3 | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| Minnesota | 3 | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |

## Appendix A: Geographical Fuel-Marketing Regions - *continued*

| State and Fuel Marketing Region | Volatility Class by Month | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan | Feb | Mar | April | May | June | July | Aug | Sept | Oct | Nov | Dec |
| Mississippi | 2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1 | 1 | 1/2 | 2 | 2 |
| Missouri | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| Montana | 3 | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1/2 | 2/3 | 3 | 3 | 3 |
| Nebraska | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| Nevada | | | | | | | | | | | | |
| North of 38° latitude | 3 | 3 | 3 | 3/2 | 2 | 2 | 2/1 | 1/2 | 2 | 2/3 | 3 | 3 |
| South of 38° latitude | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| New Hampshire | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| New Jersey | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| New Mexico | | | | | | | | | | | | |
| North of 34° latitude | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| South of 34° latitude | 3 | 3 | 3/2 | 2/1 | 1 | 1 | 1 | 1 | 1 | 1/2 | 2/3 | 3 |
| New York | | | | | | | | | | | | |
| North of 42° latitude | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| South of 42° latitude | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| North Carolina | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| North Dakota | 3 | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| Ohio | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| Oklahoma | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| Oregon | | | | | | | | | | | | |
| East of 122° longitude | 3 | 3 | 3 | 3/2 | 2 | 2 | 2/1 | 1/2 | 2 | 2/3 | 3 | 3 |
| West of 122° longitude | 3 | 3/2 | 2 | 2 | 2 | 2/1 | 1 | 1 | 1/2 | 2 | 2 | 2/3 |
| Pennsylvania | | | | | | | | | | | | |
| North of 41° latitude | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| South of 41° latitude | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| Rhode Island | 3 | 3 | 3 | 3/2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| South Carolina | 2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1 | 1 | 1/2 | 2 | 2 |
| South Dakota | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| Tennessee | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| Texas | | | | | | | | | | | | |
| North of 31° latitude | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| South of 31° latitude | 2 | 2 | 2 | 2/1 | 1 | 1 | 1 | 1 | 1 | 1/2 | 2 | 2 |
| Utah | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| Vermont | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| Virginia | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1 | 1 | 1/2 | 2 | 2/3 | 3 |
| Washington | | | | | | | | | | | | |
| East of 122° longitude | 3 | 3 | 3/2 | 2 | 2 | 2/1 | 1 | 1 | 1/2 | 2/3 | 3 | 3 |
| West of 122° longitude | 3 | 3/2 | 2 | 2 | 2 | 2/1 | 1 | 1 | 1/2 | 2 | 2 | 2/3 |
| West Virginia | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| Wisconsin | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1 | 1/2 | 2 | 2/3 | 3 | 3 |
| Wyoming | 3 | 3 | 3 | 3 | 3/2 | 2 | 2/1 | 1.2 | 2 | 2/3 | 3 | 3 |

***Source: National Ethanol Vehicle Coalition***

# NEVC Pricing Worksheet: Winter Blend

**National Ethanol Vehicle Coalition**
3216 Emerald Lane, Suite C • Jefferson City, MO 65109 • 573-635-8445
email: info@E85fuel.com web: www.e85fuel.com

This worksheet has been prepared to illustrate the use of the federal tax incentives that are available which assist to promote the use of E85 as a form of alternative transportation fuel by providing federal income tax credits. These credits assist in reducing the price of E85 to a level that is often very competitive with the price of regular unleaded gasoline. This example is based on information and experience that has been accumulated by the NEVC while working with tax advisors, the IRS, ethanol producers and fuel marketers.

## Explanation of E85 Pricing for *Winter Blend* (70% ethanol and 30% hydrocarbon)

### Assumptions:

*Computation for one gallon of fuel*

| | | |
|---|---|---|
| Terminal price of unleaded/gallon | $ 2.0000 | Enter local costs in shaded area. |
| Terminal price of ethanol/gallon | $ 2.0000 | Enter local costs in shaded area. |
| Federal excise tax on unleaded/gallon | $ 0.1840 | |
| State excise tax on unleaded/gallon | $ 0.2400 | Enter state tax rate in shaded area. |
| State excise tax on E85/gallon | $ 0.2400 | Enter state tax rate in shaded area. |

### Cost of E85

| | |
|---|---|
| Net price from Distributor/Blender | |
| Cost of unleaded (30% of terminal price) | $ 0.6000 |
| Cost of ethanol (70% of terminal price) | $ 1.4000 |
| Federal excise tax on E85 | $ 0.1840 |
| State excise tax on E85 | $ 0.2400 |
| Cost of E85 before fuel tax credit | $ 2.4240 |
| Fuel tax credit | $ (0.3570) |
| **Net cost of E85** | **$ 2.0670** |

### Cost of Unleaded

| | |
|---|---|
| Net price from Distributor/Blender | |
| Cost of unleaded (100% of terminal price) | $ 2.0000 |
| Federal excise tax on unleaded | $ 0.1840 |
| State excise tax on unleaded | $ 0.2400 |
| **Net cost of unleaded** | **$ 2.4240** |

**SAVINGS PER GALLON OF E85 OVER UNLEADED $ 0.3570**

The use of federal income tax credits becomes complicated by the unique characteristics of each individual, company, or corporation seeking to utilize these incentives. For example, in order to take advantage of a federal income tax credit, the organization seeking to use the credit must have a federal income tax liability. Many corporations are assessed tax rates pursuant to the federal Alternative Minimum Tax. Companies being taxed pursuant to AMT would have difficulty in taking advantage of the tax incentives described above. Additionally, there is a maximum tax credit that any single company may take in any one tax year.

The NEVC strongly encourages each company to consult its tax advisors.

For copies of any of these forms or publications, please contact the National Ethanol Vehicle Coaliton.

### Federal Excise Tax Refund (FORM 8849)

| | |
|---|---|
| Pure gallons of ethanol used in the gallon of E85 | 0.7000 |
| Volumetric Ethanol Excise Tax Credit per gallon | $0.5100 |
| **Per gallon fuel tax credit** | **$0.3570** |

**Explanatory notes:**

- Federal excise taxes are paid at fuel terminal. Tax is added to supplier's invoice at the time fuel is loaded to the distributor. Gasoline federal excise tax including ethanol = $0.184
  Forms that apply: IRS Forms 8849 and 720.
  Publications that apply: IRS 378 and 510.
- Form 8849 is the federal excise tax refund form. This form is used to claim a refund for the blender's federal excise tax credit on ethanol. This form is filed separately from a company's income tax return.
- Form 720 is the federal excise tax return form and is filed with the quarterly income tax return.

**Federal Infrastructure Tax Credit**

The Energy Policy Act of 2005 (H.R. 6) created a new credit that permits taxpayers to claim a 30% credit, up to $30,000, for the cost of installing clean-fuel vehicle refueling property. The portion of the credit attributable to property of a character subject to an allowance for depreciation is treated as a portion of the general business credit; the remainder of the credit is allowable to the extent of the excess of the regular tax (reduced by certain other credits) over the alternative minimum tax for the taxable year. With regard to property used by a tax-exempt entity, the credit applies to those who sold the infrastructure property to the tax-exempt entity. The credit applies to property placed in service between December 31, 2005 and December 31, 2009. The law repeals code section 179A (the current deduction) after December 31, 2005.

# NEVC Pricing Worksheet: Summer Blend

**National Ethanol Vehicle Coalition**
3216 Emerald Lane, Suite C • Jefferson City, MO 65109 • 573-635-8445
email: info@E85fuel.com web: www.e85fuel.com

This worksheet has been prepared to illustrate the use of the federal tax incentives that are available which assist to promote the use of E85 as a form of alternative transportation fuel by providing federal income tax credits. These credits assist in reducing the price of E85 to a level that is often very competitive with the price of regular unleaded gasoline. This example is based on information and experience that has been accumulated by the NEVC while working with tax advisors, the IRS, ethanol producers and fuel marketers.

## Explanation of E85 Pricing for *Summer Blend* (85% ethanol and 15% hydrocarbon)

### Assumptions:

*Computation for one gallon of fuel*

| | | |
|---|---|---|
| Terminal price of unleaded/gallon | $ 2.0000 | Enter local costs in shaded area. |
| Terminal price of ethanol/gallon | $ 2.0000 | Enter local costs in shaded area. |
| Federal excise tax on unleaded/gallon | $ 0.1840 | |
| State excise tax on unleaded/gallon | $ 0.2400 | Enter state tax rate in shaded area. |
| State excise tax on E85/gallon | $ 0.2400 | Enter state tax rate in shaded area. |

### Cost of E85

| | |
|---|---|
| Net price from Distributor/Blender | |
| Cost of unleaded (15% of terminal price) | $ 0.3000 |
| Cost of ethanol (85% of terminal price) | $ 1.7000 |
| Federal excise tax on E85 | $ 0.1840 |
| State excise tax on E85 | $ 0.2400 |
| Cost of E85 before fuel tax credit | $ 2.4240 |
| Fuel tax credit | $ (0.4335) |
| **Net cost of E85** | **$ 1.9905** |

### Cost of Unleaded

| | |
|---|---|
| Net price from Distributor/Blender | |
| Cost of unleaded (100% of terminal price) | $ 2.0000 |
| Federal excise tax on unleaded | $ 0.1840 |
| State excise tax on unleaded | $ 0.2400 |
| **Net cost of unleaded** | **$ 2.4240** |

**SAVINGS PER GALLON OF E85 OVER UNLEADED $ 0.4335**

The use of federal income tax credits becomes complicated by the unique characteristics of each individual, company, or corporation seeking to utilize these incentives. For example, in order to take advantage of a federal income tax credit, the organization seeking to use the credit must have a federal income tax liability. Many corporations are assessed tax rates pursuant to the federal Alternative Minimum Tax. Companies being taxed pursuant to AMT would have difficulty in taking advantage of the tax incentives described above. Additionally, there is a maximum tax credit that any single company may take in any one tax year.

The NEVC strongly encourages each company to consult its tax advisors.

For copies of any of these forms or publications, please contact the National Ethanol Vehicle Coaliton.

### Federal Excise Tax Refund (FORM 8849)

| | |
|---|---|
| Pure gallons of ethanol used in the gallon of E85 | 0.8500 |
| Volumetric Ethanol Excise Tax Credit per gallon | $0.5100 |
| **Per gallon fuel tax credit** | **$0.4335** |

**Explanatory notes:**

- Federal excise taxes are paid at fuel terminal. Tax is added to supplier's invoice at the time fuel is loaded to the distributor. Gasoline federal excise tax including ethanol = $0.184
  Forms that apply: IRS Forms 8849 and 720.
  Publications that apply: IRS 378 and 510.
- Form 8849 is the federal excise tax refund form. This form is used to claim a refund for the blender's federal excise tax credit on ethanol. This form is filed separately from a company's income tax return.
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## Appendix C: Material Safety Data Sheet for E85

### Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

### U.S. Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

| | |
|---|---|
| IDENTITY (As Used on Label and List)<br>Fuel Ethanol E85 | Note: Blank spaces not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that. |

**Section I**

| | |
|---|---|
| Manufacturer's Name: Archer Daniels Midland Company | Emergency Telephone Number: 800/424-9300 or 217/424-5200 |
| Address: (Number, Street, City, State, and ZIP Code)<br>4666 Fairies Parkway<br>Decatur, Illinois 62526 | Telephone Number for Information: 217/362-3980 |
| | Date Prepared: 7/5/95 |
| | Signature of Preparer (optional) |

**Section II — Hazardous Ingredients/Identity Information**

| Hazardous Components (Specific Chemical Identity: Common Name(s)) | OSHA PEL | ACGIH TLV | Other Limits Recommended | % (optional) |
|---|---|---|---|---|
| Ethyl Alcohol (200 proof) CAS 0064-17-5 | 80% | - | - | 80% |
| Gasoline CAS 008-006-619 | 20% | - | - | 20% |
| Benzene CAS-0071-43-2* | 1ppm | 10ppm | - | < 1100ppm |

*"A chemical known to the State of California to cause cancer"

**Section III — Physical/Chemical Characteristics**

| | |
|---|---|
| Boiling Point: 96°-170°F | Specific Gravity ($H_2O$ = 1): 0.76-0.78 |
| Vapor Pressure (mm Hg.): 340-560 | Melting Point: N/A |
| Vapor Denisty (AIR - 1): 2.0-4.0 | Evaporation Rate (Butyl Acetate = 1): Not Estimated |
| Solubility in Water: 60-70 gm/100ml | Appearance and Odor: Clear, colorless volatile liquid with ethereal odor. |

**Section IV — Fire and Explosion Hazard Data**

| | | | |
|---|---|---|---|
| Flash Point (Method Used): -20°F to -4°F TCC | Flammable Limits: Not Estimated | LEL 1.4 | UEL 19.0 |

Extinguishing Media: Carbon dioxide dry chemical, water for small fires. Polar solvent foam for large fires.

Special Fire Fighting Procedures: Use necessary protective equipment and breathing apparatus as would normally be used when fighting fires where there may be danger of breathing hazardous products of combustion.

Unusual Fire and Explosion Hazards: Flammable liquid

(Reproduce locally)

OSHA 174, Sept, 1985

## Appendix C: Material Safety Data Sheet for E85 - *continued*

### Section V — Reactivity Data

| Stability | Unstable | Stable X |
|---|---|---|

Conditions to Avoid: None in normal use.

Incompatibility (Materials to Avoid): May react vigorously with oxidizing materials.

Hazardous Decomposition or Byproducts: Combustion may produce $CO_2$, $NO_x$ and reactive hydrocarbons.

| Hazardous Polymerization | May Occur | Will Not Occur X |
|---|---|---|

Conditions to Avoid: None in normal use.

### Section VI — Health Hazard Data

| Route(s) of Entry: | Inhalation? | Skin? | Ingestion? |
|---|---|---|---|
| | (A) | (B) | (C) |

Health Hazards (Acute and Chronic):
(A) May cause mucous membrane irritation, unconsciousness, coma, respiratory failure and death.
(B) May cause skin irritation as a result of defatting.
(C) Moderately toxic (LD50 0.5 to 5 G/Kg), gastrointestinal irritation, vomiting, CNX depression, coma.

| Carcinogenicity: | NTP? | IARC Monographs | OSHA Regulated? |
|---|---|---|---|
| | Not determined | Not determined | Yes |

Signs and Symptoms of Exposure: May cause dizziness, loss of balance and coordination.

Medical Conditions Generally Aggravated by Exposure: Not determined

Emergency and First Aid Procedures: If swallowed, do not induce vomiting. If inhaled, remove person to fresh air. Give artificial respiration if breathing has stopped. Call a physician. If splashed in eyes or on skin, flush immediately with copious amounts of water.

### Section VII — Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled: Eliminate all sources of ignition. Small spills should be flushed with large quantities of water. Large spills should be collected for waste disposal.

Waste Disposal Method: Do not allow to enter sewers where vapors may be ignited. Incinerate in furnace where permitted under appropriate federal, state & local regulations or dispose of in a site stipulated for hazardous materials.

Precautions to Be Taken in Handling and Storage: Keep away from heat, sparks, and open flames. Keep container closed. Use with adequate ventilation.

Other Precautions: Use explosion proof electrical equipment and non-sparking tools. Ground electrical equipment.

### Section VIII — Control Measures

Respiratory Protection (Specify Type): Air supplied mask for high concentrations

| Ventilation | Local Exhaust: Preferred | Special: None |
|---|---|---|
| | Mechanical (general): Acceptable | Other: None |

Protective Gloves: Rubber

Eye Protection: Goggles

Outer Protective Clothing or Equipment: Eye bath and safety shower

Work/Hygienic Practices: N/A

Page 2

*U.S.G.P.O.: 1986-491-529/45775

# Appendix D: Procedures for Determining Selected Properties of Ethanol Fuel Samples

E85 is a form of alternative transportation fuel that can be produced from a wide range of renewable feedstocks. As is the case with all forms of fuels, it is critical that the integrity of the fuel be maintained and that seasonal volatility adjustments be made. The following summary describes a "field test" procedure to determine the levels of hydrocarbon and alcohol in E85.

The following equipment is available from VWR Scientific, 800-932-5000. Reference numbers are those used by VWR. Other equipment suppliers are available.

50 mL pipettes
Cat. #52966-217

Safety bulb
Cat. #53497-202

100 mL cylinders,
Cat. #24762-117

## Procedure for Determining Hydrocarbon Percent of Ethanol Fuel Samples

**Safety Note:** Hydrocarbon- and alcohol-resistant gloves are recommended when collecting samples and conducting tests. Additionally, eye protection should be utilized. Testing personnel should also carry water in plastic containers.

1. Using the suction bulb, pipette exactly 50 mL of fuel sample into the graduated cylinder.
2. Add about 48 mL of water to make the total liquid volume just under 100 mL.
3. Place the stopper in the cylinder and shake vigorously for about 15 seconds.
4. Carefully loosen the stopper to release any accumulated pressure; do not remove the stopper.
5. Close the stopper again and place the cylinder upright on a level surface. Allow the mixture to sit for about 15 minutes.
6. Record the total volume of liquid by reading the lowest part of the upper meniscus (the curved interface between the liquid and air).
7. Record the total volume of the alcohol/water layer by reading the lowest part of the lower meniscus (the curved interface between the two liquid layers).

## Calculation

- The hydrocarbon percent is calculated by:

  2.1 + 1.94*(total volume - alcohol/water volume)

- Assuming the sample was an ethanol/hydrocarbon mixture, the ethanol percent is 100 minus the hydrocarbon percent.

## Procedure for Determining Conductivity of Ethanol Fuel Samples

### *Sampling*

Note: Fuel dispensing equipment and sample containers can contaminate the sample, giving a falsely high conductivity for the bulk sample. Dispensing systems should be purged (at least 2 gallons for an aboveground tank and at least 5 gallons for an underground tank) immediately prior to sample collection.

### *Equipment for conductivity testing*

VWR Scientific 800-932-5000

Conductivity meter and gold-plated dip cell
Dip cell
250 mL disposable polypropylene beaker.

### *Calibration and Setup*

Regularly calibrate the instrument according to manufacturer's specifications and enable temperature compensation option.

### *Procedure*

**Note:** Fuel samples and the conductivity probe are easily contaminated. Take care not to contaminate the sample or conductivity probe by dirt or even fingerprints. The probe should be kept clean and not placed on a lab or work bench.

1. Add about 200 mL of fuel to beaker.
2. Insert the conductivity probe into the sample; move the probe up and down to flush out the electrodes. Discard the sample and add a second 200 mL sample into the beaker.
3. Repeat step 2.
4. Wait for about 30 seconds for the reading to stabilize, then record conductivity in uS/cm. Multiply number by 100 to calculate uS/m.

General Decision Number: DC070001 07/20/2007 DC1

Superseded General Decision Number: DC20030001

State: District of Columbia

Construction Types: Heavy (Heavy and Sewer and Water Line) and Highway

County: District of Columbia Statewide.

HEAVY CONSTRUCTION PROJECTS (Including Sewer and Water Lines); HIGHWAY CONSTRUCTION PROJECTS

| Modification Number | Publication Date |
|---|---|
| 0 | 02/09/2007 |
| 1 | 05/04/2007 |
| 2 | 05/11/2007 |
| 3 | 05/18/2007 |
| 4 | 06/08/2007 |
| 5 | 06/15/2007 |
| 6 | 06/22/2007 |
| 7 | 06/29/2007 |
| 8 | 07/06/2007 |
| 9 | 07/20/2007 |

ASBE0024-001 10/01/2006

| | Rates | Fringes |
|---|---|---|
| Asbestos Worker/Heat and Frost Insulator<br>Includes the application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems | $ 27.13 | 13.13 |

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ASBE0024-002 10/01/2006

| | Rates | Fringes |
|---|---|---|
| Hazardous Material Handler<br>Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems | $ 18.00 | 6.45 |

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ASBE0024-005 10/01/2006

| | Rates | Fringes |
|---|---|---|
| Fire Stop Technician<br>Includes the application of materials or devices within or around penetrations and openings in all rated wall or floor assemblies, in order to prevent the passage of fire, smoke or other gases. The application includes all components involved in creating the rated barrier at perimeter slab edges and exterior cavities, the head of gypsum board or concrete walls, joints between rated wall or floor components, sealing of penetrating items and blank openings..... | $ 22.00 | 6.24 |

BOIL0193-001 10/01/2006

| | Rates | Fringes |
|---|---|---|
| BOILERMAKER..... | $ 32.06 | 16.46 |

* BRDC0001-001 04/30/2007

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER..... | $ 25.90 | 6.19 |

CARP0132-001 05/01/2007

| | Rates | Fringes |
|---|---|---|
| Carpenter/Lather..... | $ 24.37 | 6.15 |
| Piledriver..... | $ 22.87 | 6.85 |

CARP0132-003 05/01/2004

| | Rates | Fringes |
|---|---|---|
| Diver Tender..... | $ 20.85 | 5.50 |
| Diver..... | $ 29.63 | 5.50 |

CARP1831-001 04/01/2003

| | Rates | Fringes |
|---|---|---|
| Millwright..... | $ 24.34 | 4.05 |

ELEC0026-001 06/04/2007

| | Rates | Fringes |
|---|---|---|
| Electrician..... | $ 33.45 | 11.35+a |

a. PAID HOLIDAYS: New Year's Day, Martin Luther King Jr.'s Birthday, Inauguration Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day or days designated as legal holidays by the Federal Government.

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ELEC0026-008 07/01/2003

| | Rates | Fringes |
|---|---|---|
| Motor Repairmen | | |
| Removal and reinstallation of electrical motors..... | $ 23.69 | 7.73+3%+a |

a. PAID HOLIDAYS:
New Year's Day, Martin Luther King Jr.'s Birthday, Inauguration Day, Memorial Day, Fourth of July,Labor Day, Veterans Day,Thanksgiving Day, the day after Thanksgiving and Christmas Day or days designated as legal holidays by the Federal Government.

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ELEC0070-001 01/01/2006

| | Rates | Fringes |
|---|---|---|
| Line Construction: | | |
| Groundmen..... | $ 12.03 | 4.75+18.75% |
| Linemen, Cable Splicers, Equipment Operators..... | $ 25.50 | 4.75+18.75% |
| Truck with winch..... | $ 12.35 | 4.75+18.75% |

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ENGI0077-001 05/01/2007

| | Rates | Fringes |
|---|---|---|
| Power equipment operators: (HEAVY AND HIGHWAY CONSTRUCTION) | | |
| GROUP 1..... | $ 27.64 | 6.82+a |
| GROUP 2..... | $ 27.18 | 6.82+a |
| GROUP 3..... | $ 26.47 | 6.82+a |
| GROUP 4..... | $ 24.44 | 6.82+a |
| GROUP 5..... | $ 19.90 | 6.82+a |
| GROUP 6..... | $ 29.01 | 6.82+a |

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: 35 ton cranes & above, tower & climbing cranes, derricks, concrete boom pump, drill rigs (equivalent to L & Double L), mole.

GROUP 2: Backhoes, cableways, cranes, cherry pickers, elevating graders, hoists, paving mixers, power shovels,tunnel shovels. batch plants, shields, tunnel

mining machines, gradalls, front end loaders, 3 1/2 cu. yds. and above, power driven wheel scoops and scrapers (50 cu. yds. struck capacity or above), rail tamper, draglines, boomcat, mucking machines, graders in tunnels, pile driving engines.

GROUP 3: Front end loaders below 3 1/2 cu. yds, boom trucks, hydraulic backhoes 1/2 yds. capacity or below rubber or track mounted, tug boats, power driven wheel scoops & scrapers, blade graders, motor graders, bulldozers, trenching machines, concrete mixer, speed swing pettibone, ballast regulator, concrete pump, mechanic, welder, mechanic welder, shotcrete machines, Hoeram, locomotive (standard, narrow gauge), tuggers.

GROUP 4: High lifts above 10 feet, boilers (skelton), asphalt spreaders, bullfloat finishing machines, concrete finishing machines, concrete spreaders, fine graders, air compressors, welding machines, pumps, generators, well points, deep wells, hydraulic pumps, elevators, freeze uniits, tunnel motorman or dinky operator, roller, conveyors, well drilling machines, grout pump, fireman.

GROUP 5: Fork lifts, ditch witch, bobcat 1/3 cu. yd. and below, space heaters, sweepers, assistant engineers, oilers.

GROUP 6: Master mechanic.

a. PAID HOLIDAYS: New Years Day, Inaugural Day, Decoration Day, Independence Day, Labor Day, Martin Luther King's Birthday, Veterans' Day, Thanksgiving Day, Friday after Thanksgiving and Christmas Day.

b. PREMIUM PAY: Tower cranes and cranes 100-ton and over to receive $1.00 per hour premium over Group One.

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ENGI0077-002 06/01/2007

| | Rates | Fringes |
|---|---|---|
| Power equipment operators: (PAVING AND INCIDENTAL GRADING) | | |
| GROUP 1 | $ 23.00 | 5.50 |
| GROUP 2 | $ 20.05 | 5.50 |
| GROUP 3 | $ 17.19 | 5.50 |
| GROUP 4 | $ 15.85 | 5.50 |
| GROUP 5 | $ 23.50 | 5.30 |

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Gradall operator, Crane.
GROUP 2: Boom Truck, Milling Machine, Excavator, Rubber Tire Backhoe, Asphalt Paver, Asphalt Plant Engineer, Motor Grader, Track Loader, Rubber Tire Loader, Track Dozer, Concrete Paver.
GROUP 3: Broom Truck, Asphalt Roller.
GROUP 4: Air Compressor, Grade Rollers.

GROUP 5: Mechanic.

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* ENGI0077-003 07/01/2007

| | Rates | Fringes |
|---|---|---|
| Power equipment operators: (SEWER, GAS AND WATER LINE CONSTRUCTION) | | |
| GROUP 1 | $ 20.48 | 5.37+a |
| GROUP 2 | $ 20.08 | 5.37+a |
| GROUP 3 | $ 19.57 | 5.37+a |
| GROUP 4 | $ 19.25 | 5.37+a |
| GROUP 5 | $ 18.43 | 5.37+a |

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Excavators, Cranes, Gradalls.

GROUP 2: Backhoes, Front-end Loaders, Fork alift/Lull, Bulldozers, Motor Graders. Qualified Mechanics, Hydraulic Tamper and Hoe Pack, Paving Mixers, Pile Driving Engines, Batch Plant, Concrete Pumps, Low-Boy Driver, Lube Truck.

GROUP 3: Trenching Machine, Well Drilling Machines, Concrete Mixers, Motor Graders, Truck Driver.

GROUP 4. Roller, Air Compressors, Pumps, Welding Machines, Well Points, Firemen.

GROUP 5: Oiler

a.PAID HOLIDAYS: New Year's Day, Inaugural Day, Washington's Birthday, Decoration Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day and Martin Luther King's Birthday.

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IRON0005-001 06/01/2006

| | Rates | Fringes |
|---|---|---|
| Ironworkers: | | |
| Structural, Ornamental and Chain Link Fence | $ 25.68 | 11.345 |

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IRON0201-001 05/01/2007

| | Rates | Fringes |
|---|---|---|
| Ironworkers: | | |
| Reinforcing | $ 24.80 | 12.08 |

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LABO0456-006 06/01/2006

| | Rates | Fringes |
|---|---|---|
| Laborers: (BRICK MASONRY WORK) | | |
| Mason Tenders | $ 13.91 | 3.84 |

Scaffold Builders,
Mortarmen and Small
Equipment Operators.....$ 14.65 3.84

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LABO0657-003 06/01/2006

| | Rates | Fringes |
|---|---|---|
| Laborers: (HEAVY AND HIGHWAY AND SEWER & WATER LINES CONSTRUCTION) | | |
| GROUP 1 | $ 19.18 | 3.84 |
| GROUP 2 | $ 19.46 | 3.84 |
| GROUP 3 | $ 19.61 | 3.84 |
| GROUP 4 | $ 19.75 | 3.84 |
| GROUP 5 | $ 20.15 | 3.84 |
| GROUP 6 | $ 20.64 | 3.84 |
| GROUP 7 | $ 21.11 | 3.84 |
| GROUP 8 | $ 21.77 | 3.84 |

LABORERS CLASSIFICATIONS:

GROUP 1: Carloaders, choker setter, concrete crewman, crushed feeder, demolition laborers, including salvaging all material, loading, cleaning up, wrecking, dumpmen, flagmen, fence erector and installer (other than chain link), including installation and erection of fence, guard rails, medial rails, reference posts, guide posts and right-of-way markers, form strippers, general laborers, railroad track laborers, riprap man, scale man, stake jumper, structure mover, includes foundation, separation, preparation, cribbing, shoring, jacking and unloading of structures, water nozzleman, timber bucker and faller, truck loader, water boys, tool room men.

GROUP 2: Combined air and water nozzleman, cement handler, dope pot fireman (nonmechanical), form cleaning machine, mechanical railroad equipment (includes spiker, puller, tile cleaner, tamper, pipe wrapper, power driven wheelbarrows, operators of hand derricks, towmasters, scootcretes, buggymobiles and similar equipment), tamper or rammer operator, trestle scaffold builders over one tier high, power tool operator (gas, electric or pneumatic), sandblast or gunnite tailhose man, scaffold erector, (steel or wood), vibrator operator (up to 4 feet), asphalt cutter, mortar men, shorer and lagger, creosote material handler, corrosive enamel or equl, paver breaker and jackhammer operators.

GROUP 3: Multi-section pipe layer, non-metallic clay and concrete pipe layer (including caulker, collarman, jointer, rigger and jacker, thermal welder and corrugated metal culvert pipe layer.

GROUP 4: Asphalt block pneumatic cutter, asphalt roller, walker, chainsaw operator with attachment, concrete saw (walking), high scalers, jackhammer operator (using over 6 feet of steel), vibrator operator (4 feet and over), well point installer, air trac operator.

GROUP 5: Asphalt screeder, big drills, cut of the hole drills

(1 1/2 " piston or larger), down the hole drills (3 1/2" piston or larger) gunnite or sandblaster nozzleman, asphalt raker, asphalt tamper, form setter, demolition torch operator, shotcrete nozzlemen and potman.

GROUP 6: Powderman, master form setters.

GROUP 7: Brick paver (asphalt block paver, asphalt block sawman, asphalt block grinder, hastings block or similar type)

GROUP 8: Licensed powdermen.

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LABO0657-004 06/01/2006

| | Rates | Fringes |
|---|---|---|
| Laborers: (HAZARDOUS WASTE REMOVAL, EXCEPT ON MECHANICAL SYSTEMS: Preparation for, removing and encapsulation of hazardous materials from non-mechanical systems) | | |
| Skilled Asbestos Abatement Laborers | $ 15.99 | 3.84 |
| Skilled Toxic and Hazardous Waste Removal Laborers | $ 18.61 | 3.84 |

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LABO0657-005 06/01/2006

| | Rates | Fringes |
|---|---|---|
| Laborers: (TUNNEL, RAISE & SHAFT (FREE AIR) FOR HEAVY AND SEWER & WATER LINES CONSTRUCTION) | | |
| GROUP 1 | $ 19.82 | 3.84 |
| GROUP 2 | $ 20.39 | 3.84 |
| GROUP 3 | $ 21.85 | 3.84 |
| GROUP 4 | $ 22.47 | 3.84 |

LABORERS CLASSIFICATIONS:

GROUP 1: Brakeman, Bull Gang, Dumper, Trackmen, Concrete Man.

GROUP 2: Chuck Tender, Powdermen in Prime House, Form Setters and Movers, Nippers, Cableman, Houseman, Groutman, Bell or Signalman, Top or Bottom Vibrator Operator.

GROUP 3: Miners, Re-Bar Underground, Concrete or Gunnite Nozzlemen, Powdermen, Timbermen and Re-Timbermen, Wood Steel Including Liner plate or Other Support, Material Motorman, Caulkers, Diamond Drill Operators, Riggers, Cement Finishers-Underground, Welders and Burners, Shield Driver, Air Trac Operator, Shotcrete Nozzlemen and Potman.

GROUP 4: Mucking Machine Operator (Air).

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LABO0657-006 06/01/2006

| | Rates | Fringes |
|---|---|---|
| Laborers: (TUNNEL, RAISE AND SHAFT (COMPRESSED AIR) FOR HEAVY CONSTRUCTION ONLY | | |
| Gauge Pressure Work Period (Pounds) (Hours) | | |
| 1-14 7 | $ 24.16 | 3.84 |
| 14-18 6 | $ 28.43 | 3.84 |

FOOTNOTE: On any requirement for air pressure in excess of 18 PSI, work periods and rates should be negotiated at a pre-bid conference.

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LABO0657-007 06/01/2006

| | Rates | Fringes |
|---|---|---|
| Laborers: (PAVING AND INCIDENTAL GRADING) | | |
| Asphalt Raker & Concrete Saw Operator | $ 16.76 | 4.10 |
| Asphalt Shoveler | $ 16.23 | 4.10 |
| Asphalt Tammer & Concrete Shoveler | $ 16.47 | 4.10 |
| Jack Hammer | $ 16.66 | 4.10 |
| Laborer | $ 16.12 | 4.10 |
| Sand Setter & Form Setter | $ 17.37 | 4.10 |

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MARB0002-003 05/01/2007

| | Rates | Fringes |
|---|---|---|
| Marble & Stone Mason Includes Pointing, Caulking and Cleaning of All Types of Masonry, Brick, Stone and Cement Structures | $ 31.00 | 11.52 |

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MARB0003-001 05/01/2007

| | Rates | Fringes |
|---|---|---|
| Mosaic & Terrazzo Worker, Tile Layer | | |
| Marble Mason and Tile Layer | $ 24.67 | 8.78 |
| Terrazzo Worker | $ 25.42 | 8.78 |

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MARB0003-004 05/01/2007

| | Rates | Fringes |
|---|---|---|
| Marble, Tile & Terrazzo Finisher | $ 19.84 | 7.90 |

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PAIN0051-001 06/01/2007

| | Rates | Fringes |
|---|---|---|
| Painters: | | |
| All Industrial Work | $ 24.73 | 7.31 |
| Bridges, Heavy Highway, Lead Abatement and Flame/Thermal Spray | $ 27.87 | 7.31 |
| Commercial and Mold Remediation, Painters, Wallcovers and Drywall Finishers | $ 23.31 | 7.31 |
| Metal Polishing and Refinishing | $ 24.31 | 7.31 |

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PLAS0891-001 05/01/2007

| | Rates | Fringes |
|---|---|---|
| Cement Masons: | | |
| HEAVY CONSTRUCTION ONLY | $ 26.15 | 6.01 |

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PLAS0891-002 06/01/2007

| | Rates | Fringes |
|---|---|---|
| Cement Masons: (PAVING & INCIDENTAL GRADING) | | |
| Cement Masons | $ 17.35 | 4.35 |
| Concrete Saw Operators | $ 17.35 | 4.35 |
| Form Setters | $ 17.35 | 4.35 |

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PLUM0005-001 08/01/2006

| | Rates | Fringes |
|---|---|---|
| Plumber | $ 31.52 | 12.59+a |

a. PAID HOLIDAYS: Labor Day, Veterans' Day, Thanksgiving Day and the day after Thanksgiving, Christmas Day, New Year's Day, Martin Luther King's Birthday, Memorial Day and the Fourth of July.

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PLUM0602-005 08/01/2006

| | Rates | Fringes |
|---|---|---|
| Steamfitter, Refrigeration & Air Conditioning Mechanic | $ 31.27 | 12.82+a |

a. PAID HOLIDAYS: New Year's Day, Martin Luther King's Birthday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and the day after Thanksgiving and Christmas Day.

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SHEE0100-001 07/01/2007

| | Rates | Fringes |
|---|---|---|
| Sheet Metal Worker..... | $ 31.54 | 11.65 |

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TEAM0639-001 03/07/2004

| | Rates | Fringes |
|---|---|---|
| Truck drivers: (HEAVY & HIGHWAY CONSTRUCTION) | | |
| Tandem & Triaxle (3 or more axles, including steering axle)..... | $ 16.00 | 5.82+a |
| Tractor-trailer, Low Boy.... | $ 20.00 | 5.82+a |

a. VACATION: Employees will receive one (1) week's paid vacation after one (1) year of service.

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TEAM0639-002 06/01/2005

| | Rates | Fringes |
|---|---|---|
| Truck drivers: (HEAVY & HIGHWAY CONSTRUCTION) | | |
| Concrete Mixer Drivers..... | $ 17.40 | 5.82+a+b |

a. PAID HOLIDAYS: New Year's Day, Martin Luther King, Jr. Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day, or any day celebrated publicly in the District of Columbia as one of the above holidays.

b. PAID VACATIONS: Employees with one (1) year of service shall be entitled to a vacation of one (1) week; five (3) years of service are entitled to two (2) weeks; fifteen(10) years of service are entitled to three 3 weeks; twenty (20) years of service are entitled to four (4) weeks.

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TEAM0639-005 09/01/2006

| | Rates | Fringes |
|---|---|---|
| Truck drivers: (PAVING & INCIDENTAL GRADING) | | |
| All paving projects where the grading is incidental to the paving..... | $ 14.05 | 3.69 |

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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 (29CFR 5.5 (a) (1) (ii)).

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In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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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, DC 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, DC 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, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

| BID BOND *(See instruction on reverse)* | DATE BOND EXECUTED *(Must not be later than bid opening date)* | OMB NO.: 9000-0045 |
|---|---|---|

Public reporting burden for this collection of information is estimated to average 25 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 the FAR Secretariat (MVR), Federal Acquisition Policy Division, GSA, Washington, DC 20405.

| PRINCIPAL *(Legal name and business address)* | TYPE OF ORGANIZATION *("X" one)* |
|---|---|
| | ☐ INDIVIDUAL ☐ PARTNERSHIP<br>☐ JOINT VENTURE ☐ CORPORATION |
| | STATE OF INCORPORATION |

SURETY(IES) *(Name and business address)*

| PENAL SUM OF BOND | | | | | BID IDENTIFICATION | |
|---|---|---|---|---|---|---|
| PERCENT OF BID PRICE | AMOUNT NOT TO EXCEED | | | | BID DATE | INVITATION NO. |
| | MILLION(S) | THOUSAND(S) | HUNDRED(S) | CENTS | FOR *(Construction, Supplies, or Services)* | |

OBLIGATION:

We, the Principal and Surety(ies) are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has submitted the bid identified above.

THEREFORE:

The above obligation is void if the Principal - (a) upon acceptance by the Government of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the principal; or (b) in the event of failure to execute such further contractual documents and give such bonds, pays the Government for any cost of procuring the work which exceeds the amount of the bid.

Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Government. Notice to the surety(ies) of extension(s) are waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

WITNESS:

The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.

**PRINCIPAL**

| | | | | |
|---|---|---|---|---|
| SIGNATURE(S) | 1. *(Seal)* | 2. *(Seal)* | 3. *(Seal)* | *Corporate Seal* |
| NAME(S) & TITLE(S) *(Typed)* | 1. | 2. | 3. | |

**INDIVIDUAL SURETY(IES)**

| | | |
|---|---|---|
| SIGNATURE(S) | 1. *(Seal)* | 2. *(Seal)* |
| NAME(S) *(Typed)* | 1. | 2. |

**CORPORATE SURETY(IES)**

| | | | | | |
|---|---|---|---|---|---|
| SURETY A | NAME & ADDRESS | | STATE OF INC. | LIABILITY LIMIT ($) | *Corporate Seal* |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) *(Typed)* | 1. | 2. | | |

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**STANDARD FORM 24** (REV. 10-98)
Prescribed by GSA - FAR (48 CFR) 53.228(a)

| | | | | | |
|---|---|---|---|---|---|
| SURETY B | NAME & ADDRESS | | STATE OF INC. | LIABILITY LIMIT ($) | *Corporate Seal* |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) *(Typed)* | 1. | 2. | | |
| SURETY C | NAME & ADDRESS | | STATE OF INC. | LIABILITY LIMIT ($) | *Corporate Seal* |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) *(Typed)* | 1. | 2. | | |
| SURETY D | NAME & ADDRESS | | STATE OF INC. | LIABILITY LIMIT ($) | *Corporate Seal* |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) *(Typed)* | 1. | 2. | | |
| SURETY E | NAME & ADDRESS | | STATE OF INC. | LIABILITY LIMIT ($) | *Corporate Seal* |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) *(Typed)* | 1. | 2. | | |
| SURETY F | NAME & ADDRESS | | STATE OF INC. | LIABILITY LIMIT ($) | *Corporate Seal* |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) *(Typed)* | 1. | 2. | | |
| SURETY G | NAME & ADDRESS | | STATE OF INC. | LIABILITY LIMIT ($) | *Corporate Seal* |
| | SIGNATURE(S) | 1. | 2. | | |
| | NAME(S) & TITLE(S) *(Typed)* | 1. | 2. | | |

## INSTRUCTIONS

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Administrator of General Services.

2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.

3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., (e.g., 20% of the bid price but the amount not to exceed_____ dollars).

4. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitation listed therein. where more than one corporate surety is involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designed "SURETY(IES)" on the face of the form, insert only the letter identification of the sureties.

(b) Where individual sureties are involved, a completed Affidavit of Individual surety (Standard Form 28), for each individual surety, shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning its financial capability.

5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal"; and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.

6. Type the name and title of each person signing this bond in the space provided.

7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror."

# PAYMENT INFORMATION FORM
# ACH VENDOR PAYMENT SYSTEM

This form is used for ACH payments with an addendum record that carries payment-related information. Recipients of these payments should bring this information to the attention of their financial institution when presenting this form for completion. The information will be transmitted in the CCD+ format to the designated financial institution.

## Debt Collection Improvement Act of 1996

**PAPERWORK REDUCTION ACT STATEMENT**

The information being collected on this form is pursuant to Public Law 104-134, which mandated Electronic Funds Transfer for recipients of all federal payments (excluding IRS tax refunds) beginning July 24, 1996. This information will be needed by the Treasury Department to transmit payments and related data.

| COMPANY INFORMATION | |
|---|---|
| NAME: | |
| ADDRESS: | |
| CONTRACT NUMBER: AOC-_____ | TAXPAYER IDENTIFICATION NUMBER (TIN): |
| CONTACT PERSON NAME: | TELEPHONE NUMBER: ( )<br>FAX NUMBER: ( ) |

| AGENCY INFORMATION | |
|---|---|
| NAME: ARCHITECT OF THE CAPITOL - FORD HOUSE OFFICE BUILDING | |
| ADDRESS: ACCOUNTING DIVISION, ROOM H2-205 | |
| WASHINGTON, D.C. 20024 | FAX NUMBER: (202) 225-7321 |
| CONTACT PERSON NAME: MR. JAMES JARBOE | TELEPHONE NUMBER: (202) 226-2552 |

| FINANCIAL INSTITUTION INFORMATION | |
|---|---|
| BANK NAME: | |
| BRANCH LOCATION: (If applicable) | |
| | |
| CONTACT NAME: | TELEPHONE NUMBER: ( ) |
| NINE DIGIT ROUTING TRANSIT NUMBER: __ __ __ __ __ __ __ __ __ | |
| DEPOSITOR ACCOUNT NUMBER: | |
| TYPE OF ACCOUNT: ____ CHECKING ____ SAVINGS ____ LOCKBOX | |
| | |
| SIGNATURE AND TITLE OF REPRESENTATIVE: | TELEPHONE NUMBER: |

UNITED STATES CAPITOL POLICE
WASHINGTON, D.C. 20510-7218

CP-491
(4-04)

# REQUEST FOR CHECK OF CRIMINAL HISTORY RECORDS

Please report with: (1) A valid form of photo identification, (2) and this form to the Fairchild Building located at 499 South Capitol Street SW Washington, D.C., Room 127 between the hours of 7am until 3pm Monday through Friday for processing.

**1.** *Name:* (Last, First, Middle)

*Address:*
Street & No. _____
City & State: _____
Zip: _____ Tele: _____

**2.** *Other Names Ever Used:* (e.g. maiden name, nickname, ect. *If you have never used another name write "None".)*

**3.** *Date of Birth:* (Month, Day, Year)

**4.** *Birthplace:* (City and State or Country)

**5.** *Social Security Number:*

**6.** *Gender:*
Male Female

**7.** *Race:* **8.** *Height:* **9.** *Weight:* **10.** *Eye Color:* **11.** *Hair Color:*

## SIGNATURE AND RELEASE OF INFORMATION:

***READ THE FOLLOWING CAREFULLY BEFORE YOU SIGN:***

- I understand that the information provided above will be used to check the criminal history records of the Federal Bureau of Investigation (FBI).
- I consent to the use of the information provided in making a security determination concerning me.
- I certify that, to the best of my knowledge and belief, all of the information provided above is true, correct, and complete, made in good faith.

**12. Signature:** _____ **13. Date:** _____

| CONTRACTOR'S REQUEST FOR PAYMENT | |
|---|---|
| Contractor Name and Address: | Contract Title: |
| Contract #: | Task Order #<br>If Applicable: |
| Progress Payment #: | Contractor's Invoice Number: |
| Date: | Period Covered: |

| | |
|---|---|
| Original Contract Amount: | $ |
| Net Changes (+/-) Through Supplemental Agreement # | $ |
| Value of Undefinitized Change Orders | $ |
| Total Value of Contract | $ |
| Less Value Of Work Not Yet Completed | $ |
| Value of Work in Place to Date: | $ |
| Value Of Unused Materials Previously Paid | $ |
| Value Of Unused Materials Paid This Period | $ |
| 80% of Undefinitized Change Order # Requested this Payment<br>(Max. Amount Payable on Undefinitized Change Orders) | $ |
| 80% of Undefinitized Change Order # Requested this Payment | $ |
| 80% of Undefinitized Change Order # Requested this Payment | $ |
| Earned to Date: | $ |
| Less Amount Retained: | $ |
| Less Previous Payments: | $ |
| **PAYMENT REQUESTED THIS PERIOD** | $ |

## CONTRACTOR'S CERTIFICATION

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) All payments due to subcontractors and suppliers from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of Chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance (Optional certification - contractor may delete. See FAR 52.232-5).

| Typed/Printed Name and Signature of Authorized Contractor Official | |
|---|---|
| Title: | Date: |

| Contract #: | Task Order # If Applicable: | |
|---|---|---|
| PAYMENT IS RECOMMENDED AS FOLLOWS | | |
| Less other deductions | Liquidated Damages | $ |
| | Labor Violations | $ |
| | Punch List | $ |
| | Other | $ |
| **Recommended Amount for Payment** | | $ |

I hereby verify that the amounts shown above, including % complete, are accurate, and recommend payment in the amount of $_____.

_____

COTR's Typed/Printed Name and Signature Date

I hereby approve the amount of $ _____ as appropriate for payment.

_____

Contracting Officer's Typed/Printed Name and Signature Date