

2. AMENDMENT/MODIFICATION NO. W9127826R1AYP-0003	3. EFFECTIVE 14 APR 2026	4. REQUISITION/PURCHASE	5. PROJECT NO. (If applicable) SBH25001
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6. ISSUED BY Corps of Engineers 100 Canal Street Mobile, AL 36602	CODE	7. ADMINISTERED BY (If other than item 6) CODE	
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8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP code)	<input checked="" type="checkbox"/>	9A. AMENDMENT OF SOLICITATION NO. W9127826R1AYP
		9B. DATED (SEE ITEM 11) 04 MARCH 2026
	<input type="checkbox"/>	10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)

CODE	FACILITY CODE
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11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers is extended, is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. **FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.** If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS,
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

- | | |
|--------------------------|--|
| <input type="checkbox"/> | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) _____ THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A |
| <input type="checkbox"/> | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO AUTHORITY OF FAR 43.103(b) |
| <input type="checkbox"/> | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: |
| <input type="checkbox"/> | D. OTHER _____ (Specify type of modification and authority) |

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)

The subject solicitation DHS COBRA INCINERATOR DISPOSAL AND FACILITY REUTILIZATION - ANNISTON, ALABAMA (CALHOUN COUNTY)

Is modified in the following: REFER TO THE ENCLOSED REVISED SPECIFICATION/DRAWING REVISIONS FOR AMENDMENT NO. 0003.

Except as provided herein, all terms and conditions of the document reference in item 9A or 10A, as Heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICE (Type or print)
15B. CONTRACTOR/OFFEROR	16B. UNITED STATES OF AMERICA
_____	BY _____
(Signature of person authorized to sign)	(Signature of contracting officer)
15C. DATE SIGNED	16C. DATE SIGNED
_____	_____

PART I-REVISIONS MADE BY ADDED AND/OR REPLACEMENT PARAGRAPHS/PAGES/SECTIONS

The items listed below are to be replaced by the corresponding added and/or revised paragraphs/pages or sections. Added and/or revised paragraphs/pages or sections are indicated by a note in bottom right hand corner of each paragraph or page. Added sections are hereby made a part of the contract and are to be inserted in the specification in the proper numerical/alphabetical sequence.

Within the specifications, deletions from the specifications are indicated by strikethrough, e.g.: ~~deletions are marked with strikethrough~~ and additions to the specifications including revisions/substitutions are indicated in bold, italic and underlined, e.g.: ***additions are indicated thus.***

<u>SECTION</u>	<u>Corresponding Added or Revised Paragraph Page, and/or Section</u>
Bidding Schedule	Revised Bidding Schedule Note 3 as indicated herein.
00 11 00	Revised Attachment 1 as indicated herein.
00 12 00	Revised paragraph 3.2 as indicated herein.
01 00 00	Revised paragraph 1.4.1, 1.9 and 1.15 as indicated herein.
01 10 10	Revised paragraph 3.2.2, 3.2.3, 8.1.1, 8.2.2.1.1, 8.2.3.1, 10.2.3, 14.3.2, 15.6.1, 15.6.2, 17.1, and 17.2 as indicated herein. Deleted paragraph 9.6 as indicated herein.
01 10 12	Revised paragraph 6.3.1 as indicated herein.
01 30 00	Revised paragraph 1.6.1 as indicated herein.
26 31 00	Revised paragraph 3.3.1 and 3.9 as indicated herein.
Appendix C	Revised drawings (See Part II) as indicated herein. (Provided Separately)
Appendix D	Revised by adding sheet S-9 as indicated herein.

PART II - NOTE: Revised, replacement and added drawings are listed below. These revised, replacement and added drawings are to be inserted into the folio in the proper numerical sequence. Drawings that have been revised or replaced by this amendment shall be deleted from the folio. All drawings listed below are revised unless indicated otherwise.

<u>Sheet Reference Number</u>	<u>Title</u>
G-001	AM03 COVER SHEET
AD120	DEMOLITION FLOOR PLAN

DHS COBRA INCINERATOR DISPOSAL AND FACILITY REUTILIZATION
ANNISTON, AL (CALHOUN COUNTY)

W9127826R1AYP
SBH25001

AD140 DEMOLITION ROOF PLAN
AD201 EXTERIOR DEMOLITION ELEVATIONS
A-120 NEW WORK FLOOR PLAN
A-201 EXTERIOR NEW WORK ELEVATIONS

Encl as stated

Revised pages of the specifications as indicated in Part I.

New sections as listed in Part I.

6 Revised drawings as indicated in Part II.

BIDDER'S NAME: _____

BIDDING SCHEDULE

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
<u>Base Bid</u>					
1.	DHS COBRA Incinerator Disposal and Facility Reutilization	1	Job	XXX	_____
<u>Total Base Bid</u>					_____
<u>Bid Option No. 1</u>					
2.	Expand Battery Storage	1	Job	XXX	_____
<u>Bid Option No. 2</u>					
3.	Incinerator Canopy	1	Job	XXX	_____
<u>Bid Option No. 3</u>					
4.	O&M Roof	1	Job	XXX	_____
<u>Bid Option No. 4</u>					
5.	Parking Lot Canopies (Perimeter)	1	Job	XXX	_____
<u>Bid Option No. 5</u>					
6.	Parking Lot Canopies (Central)	1	Job	XXX	_____
<u>Total Base Bid</u>					_____
<u>Plus Options 1 thru 5</u>					_____

NOTES FOR BIDDING SCHEDULE

NOTE NO. 1. To better facilitate the receipt and proposal process, all modifications to proposals are to be submitted on copies of the latest bid schedules as published in the solicitation or the latest amendment thereto. In lieu of indicating additions/deductions to bid items, all bidders should state their revised prices for each item. The company name should be indicated on the face of the bidding schedule to preclude being misplaced.

NOTE NO. 2. Bidders must insert a price on all numbered items of the Bidding Schedule. Failure to do so will disqualify the bid.

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NOTE NO. 3. CONDITIONS GOVERNING EVALUATION OF BIDS AND AWARD OF CONTRACTS.

In accordance with the source selection criteria established in this solicitation, award will be made according to the "Best Value" approach as defined in Section 00 12 00: EVALUATION CRITERIA AND BASIS OF AWARD.

One Task Order will be awarded on the Bid Schedule and award will be made on the Base Bid and selected Options. Evaluation of the Base Bid and all Options shall be in accordance with Section 00 12 00. Options may be exercised at time of award or in accordance with the following clause:

52.217-5 EVALUATION OF OPTIONS (JUL 1990)

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

(End of clause)

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

The Government may require the delivery of the numbered line item, identified in the Schedule as an option item, in the quantity and at the price stated in the Schedule. The Contracting Officer may exercise Bid Options 1-5 by written notice to the Contractor within ~~365~~ 120 days of Notice to Proceed, subject to the availability of funds. Delivery of added items shall continue at the same rate that like items are called for under the contract, unless the parties otherwise agree.

(End of clause)

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NOTE NO. 4. The estimated price range for this project is between \$5,000,000 and \$10,000,000.

NOTE NO. 5. ADDITIONAL SUBMISSION REQUIREMENTS:

- a. Upon the Government's request, the offeror shall submit a price breakdown of the bid items directly to the Mobile District Office. Details on where and how to send the breakdown will be provided by the requesting official making the request on behalf of the Government. The format of the breakdown will be left up to the offeror. However, as a minimum, the offeror shall provide pricing for the major categories of work under each bid item, for example: site improvements, landscaping, electrical, mechanical, etc. This information will not be needed sooner than three (3) working days after the proposal submission due date.
- b. This information may be required for the initial and, if requested, for any revised proposals.

NOTE NO. 6. CHECKLIST FOR THE BIDDING SCHEDULE:

- a. Is it completely filled out? Y__ NA__
- b. It may not be altered either as to quantities or as to items offered. Y__ NA__
- c. There can be no language of limitation either as to quantities or as to items offered. Y__ NA__
- d. If you corrected your numbers, have you initialed these corrections? Y__ NA__
- e. If the bidding schedule has been changed by Amendment, is the bidding schedule that you are submitting from the most recent amendment ? Y__ NA__
- f. Do prices for each bid item include all costs, mark-ups and taxes (if any taxes are imposed)? Y__ NA__
- g. Is the cost of obtaining your performance and payment bond included in the total bid price specified on the bid schedule? Y__ NA__
- h. In preparing your bid, remember the Corps does not make advanced payments on its contracts Y__ NA__

END OF BID SCHEDULE

SECTION 00 11 00
PROPOSAL SUBMISSION AND INSTRUCTIONS

1.0 GENERAL REQUIREMENTS.

1.1 This is a competitive, one-step best value source selection for construction using Federal Acquisition Regulation (FAR) Part 16.5 procedures and limited to the USACE Mobile District, DHS CDP Design/Build and Construction MATOC Pool. Competing Prime Construction Contractors, hereinafter referred to as the "Offeror", shall submit a proposal that includes the required submission information indicated below to demonstrate the offering company's technical capabilities to perform the work described in the Task Order Request for Proposal (RFP) Letter and in all other sections of the solicitation. In addition, each competing Offeror shall also include in their proposal their price and other administrative information described below. By submission of a proposal, the Offeror agrees to all the terms of this Task Order RFP.

1.2 This project is for the dismantling and disposal of inoperable incinerator equipment within Building 801D, a 7,042 square-foot facility at the Center for Domestic Preparedness (CDP), Anniston, AL, and repurpose/renovation of the structure as a ventilated indoor training facility. The facility renovation will include renewable solar energy systems with roof mounted PV arrays and Battery Energy Storage System (BESS) for use of off-grid power to improve facility operational resilience and reduce environmental impact.

1.3 The period of performance is as indicated in Section 01 00 00. It is the intent of the Government to award a single Firm Fixed-Price contract.

1.4 The Government reserves the right to reject any and/all offers.

2.0 WHO MAY SUBMIT.

2.1 Only the prime construction contractors that have been awarded a contract to participate in the USACE Mobile District, DHS CDP Design/Build and Construction MATOC Pool may submit a proposal.

2.2 Any design firm that participated in preparation of this solicitation, whether as a Government contractor or as a subcontractor to a Government contractor, is not eligible to participate in this solicitation as a prime contractor or subcontractor due to a conflict of interest. The Government considers such firms to have an unfair competitive advantage, and therefore will not consider such firms.

3.0 PROPOSAL SUBMISSION REQUIREMENTS.

3.1 Submit the electronic proposal package to the U.S. Army Corps of Engineers via Procurement Integrated Enterprise Environment (PIEE) website (<https://piee.eb.mil/xhtml/unauth/home/login.xhtml> -OR- <https://piee.eb.mil>) as indicated in this RFP. Emailed submissions of proposals are not permitted and will not be accepted under any circumstances. The Government must receive your proposal no later than the time and date specified in the RFP letter. The PIEE system notification must show the proposal submission was prior to the specified time. Any and all amendments to the solicitation shall be acknowledged by signing on each amendment (SF30). Offerors shall confirm proposal receipt by emailing the Points of Contact listed in PIEE.

3.2 Submit your proposal as follows:

- Submit one (1) electronic copy of the entire proposal ("Volume I and II") in Portable Document File (PDF) format. Label the pdf "26R1AYP-OfferrerName-Vol I-II".
- Submit one (1) electronic copy of Volume II in Portable Document File (PDF) format. Label the pdf "26R1AYP-OfferrerName-Vol II".
- Hard copies of Volumes I and II are not required to be submitted and will not be accepted or evaluated. However, when formatting the PDF files the page size shall be 8-1/2" x 11" (or 11" x 8-1/2") for all pages except schedules and organizational charts, as applicable, which shall be 11" x 17" (or 17" x 11") and count as one sheet toward page limitation.
- Preliminary pages, such as Table of Contents and Cover Pages, are excluded from page counts.

3.3 To effectively and equitably evaluate proposals, the Source Selection Evaluation Board (SSEB) must receive information, in the order described below, that clearly describes an Offeror's capabilities to successfully execute construction in support of this project. It is therefore an Offeror's responsibility to submit proposal information that is fully responsive to the submission requirements of this section. Offerors are responsible for organizing material sequentially by factor to facilitate evaluation. Materials that are not properly organized may easily be overlooked during evaluations, possibly affecting an Offeror's rating. Offers should be concise, addressing only the information outlined in this section.

3.4 Volume I - Administrative Requirements (including Price). The information submitted under this tab is not rated but checked for compliance.

- a) Include a completed and signed Proposal Data Sheet (See Attachment 1).
- b) Submit an Organizational Conflicts of Interest (OCI) Disclosure: The Offeror shall provide a disclosure statement with its proposal that concisely describes all the relevant facts concerning any past or present OCIs relating to this solicitation. If applicable, in the same statement, the Offeror shall provide information to assure the government that the conflicts of interest have been mitigated and/or neutralized to the maximum extent possible. If a conflict of interest is discovered after award of this contract, the Contracting Officer will make a decision on whether or not to terminate the contract. If no conflicts of interest exist, the Offeror shall provide a statement stating no Conflicts of Interest exist.
- c) Self-Performance and Limitations on Subcontracting Compliance Form as required by Far Clause 52.219-14(e)(3). If the Offeror is a certified HUBZone and it has not waived its HUBZone price preference, it is required to complete the Self-Performance and Limitations on Subcontracting Compliance Form in accordance with FAR Clause 52.219-14(c)(6). The Offeror is reminded that in accordance with FAR Clause 52.219-4(c) "A HUBZone joint venture agrees that, in the performance of the contract, at least 40 percent of the aggregate work performed by the joint venture shall be completed by the HUBZone small business parties to the joint venture. Work performed by the HUBZone small business parties to the joint venture must be more than administrative functions."
- d) All SF30s for each amendment issued for this RFP duly acknowledged/signed. Failure to submit all acknowledged SF30s will result in elimination of the

proposal from consideration.

3.4.1 Price Breakdown Requirements. The Government may request a "price breakdown" of the bid items, even when discussions are not going to be held. The price breakdown information is not required to be submitted with the initial proposal; however, may be requested by the Government after initial proposal submission.

4.0 EVALUATION CRITERIA.

4.1 There are two volumes required in response to this solicitation. Volume I includes certain administrative requirements that are not rated. Volume II has two rated non-priced evaluation factors.

EVALUATION FACTORS AND ORDER OF RELATIVE IMPORTANCE

Volume	Factor - Description	Relative Importance
Volume I	Administrative Requirements (Including Price)	Not Rated
Volume II	Factor 1 - Past Performance Information of the Prime Contractor	1 st in relative importance; more important than Factor 2
Volume II	Factor 2 - Technical Approach	2 nd in relative importance; least important factor

Non-priced evaluation factors are significantly more important than price.

4.2 Volume II - Factor 1 - Past Performance Information of the Prime Contractor. The Past Performance of the Prime Contractor (Offeror) consists of (a) Relevant Company Effort and (b) Quality of Past Performance. The Government will review recent, relevant company efforts and quality information provided by the owners of those efforts to assess the Offeror's past experience and probability of successfully performing the work described in this solicitation. For this factor, a recent, relevant project is a construction project:

a) Performed under a contract or task order, as those terms are defined in FAR 2.101, for the Federal Government, or similar contractual agreements for State or Local Governments, or the commercial or private sector. Multiple items of work performed under a single contract or task order are considered one project; do not combine multiple projects under separate contracts or task orders to create a single project. For example, individual task orders completed under an IDIQ contract should be submitted as single, separate project(s); an IDIQ contract will not be accepted or evaluated as a project.

b) That is "recent"; one that has been completed within ten (10) years of the solicitation issue date, or one where the construction is at least 50% complete (measured by performance period days) as of the solicitation issue date. Offerors are responsible for providing start and completion dates for each completed project, or the start and scheduled completion dates for projects currently under construction.

c) That is "relevant"; one that is similar in scope (type, size, and dollar value) to the project types described in this solicitation. In terms of dollar value, a relevant project is one greater than \$5M; however, projects less than \$5M may be considered when similar in scope.

4.2.1 Relevant Company Effort and Quality of Past Performance of the Prime Contractor.

a) Relevant Company Effort: The Offeror shall provide no more than five (5) examples of recent, relevant construction projects that demonstrate the company's ability to perform work similar in scope and magnitude to that required by this solicitation. Offerors are encouraged to submit multiple, relevant projects up to the stated maximum of five (5).

For each project, the Offeror shall furnish the information specified below. Attachment 2, at the end of this section, may be used to present the information, but is not required. If more than five (5) projects are submitted for evaluation, only the first five (5) projects presented will be evaluated. Offerors who submit fewer than five (5) projects to demonstrate the company's ability to perform may be rated lower as the Government may have a higher level of confidence in the abilities of Offerors that provide multiple examples of successful performance of recent, relevant projects. The Relevant Company Effort portion of Factor 1 shall not exceed ten (10) pages. Pages exceeding this limitation for the Relevant Company Effort portion of Factor 1 will not be evaluated.

- (1) Company Name
- (2) Name of Project / Type of Project
- (3) Location of Project
- (4) Project Owner
- (5) General Scope of Project
- (6) Your Role and Construction Type Work Your Company Self-Performed on site other than Construction Management Services
- (7) Construction Cost of the single project
- (8) Extent and Type of Work Subcontracted Out
- (9) Construction Period - Start and Completion/Scheduled Completion Dates (Provide Month/Year)
- (10) Termination or Liquidated Damages Information; Comments regarding any known performance deemed unacceptable to the customer, or not in accordance with the contract terms and conditions.

b) Quality of Past Performance. Does not count against the limitation for the Relevant Company Effort portion of Factor 1.

(1) The Offeror shall submit evidence of the quality of their past performance for each project. For Federal Government projects, the Offeror shall provide a completed contractor performance evaluation found in the Contractor Performance Assessment Reporting System (www.cpars.gov/). Whether interim or final assessment, the report provided shall be the latest report available in the system at the time of the proposal due date. If a proper evaluation does not exist in CPARS, because it has not been completed or the project is a non-Federal Government project, the Offeror shall provide a completed Past Performance Questionnaire (PPQ) (see Attachment 3). If, at time of evaluation, a contractor performance evaluation exists in CPARS, and yet the Offeror submits a PPQ, only the evaluation in CPARS will be considered. If, at time of evaluation, a final contractor performance evaluation exists in CPARS, and yet the Offeror submits an interim evaluation, the final evaluation in CPARS will be considered.

(2) Past performance surveys/assessment/evaluation forms other than CPARS or PPQs, or that do not contain the entirety of the information required in the PPQ provided (Attachment 3), are unacceptable and will not be considered or evaluated.

(3) Completed PPQs that were submitted in response to previous solicitations may be used in this source selection. However, Offerors shall not incorporate such PPQs by reference. The Offeror must resubmit PPQs for each submitted project within their proposal as evidence of quality of past performance. The burden of providing current, detailed and complete past performance information

rests with the Offeror.

(4) If the CPARS or PPQs for each submitted project within the proposal indicate that the Offeror was required to take corrective action for any substandard performance or experienced other performance problems such as extended performance periods, numerous warranty calls, etc., the Offeror should explain the circumstances and the corrective actions taken within their proposal.

(5) If an Offeror's client/customer will only provide completed PPQs directly to the U.S. Army Corps of Engineers, Mobile District, Offerors must ensure the client/customer submits the PPQ by the proposal due date to the Points of Contact indicated on the Proposal Data Sheet. The solicitation number shall be included on the PPQ form. PPQs received after the proposal due date will be considered untimely and will not be considered during the evaluation.

4.2.2 Joint Venture Submission Requirements.

4.2.2.1 Like other Offerors, a JV Offeror shall provide no more than five (5) examples of recent, relevant projects performed by the JV Offeror that reflect the JV Offeror's ability to perform the work required in this solicitation.

4.2.2.2 If the JV Offeror does not have five (5) recent, relevant projects performed as the JV Offeror itself, the JV Offeror may supplement those projects with recent, relevant projects performed by the members of the JV Offeror in their individual capacities. If the JV Offeror does not have any examples of recent, relevant projects performed by the JV Offeror itself, then each partner may submit at least one (1) project demonstrating recent, relevant experience performed by the JV partner in their individual capacity. Offerors failing to demonstrate project experience of the JV Offeror itself or of both JV partners may be rated lower as the Government may have a higher level of confidence in Offerors demonstrating past experience of the JV Offeror itself or of both JV partners in their individual capacities. For information pertaining to small business JV partner submission requirements, refer to Paragraph 4.2.3 Small Business Submission Requirements. The total number of projects submitted by the JV Offeror, whether demonstrating experience as the JV Offeror itself or in the JV partner's individual capacities, may not exceed five (5).

4.2.3 Small Business Submission Requirements.

4.2.3.1 For a small business Offeror (or a small business JV partner), if the small business' capabilities, past performance, and experience do not independently demonstrate capabilities and past performance necessary for award, then the Government may also consider the past performance experience performed as a member of a JV or by a first-tier subcontractor, when specifically identified in the proposal. Offerors are advised that the Government may assign a higher confidence rating to Offerors that submit projects performed by the Offeror itself (i.e., the corporate entity listed on the Proposal Data Sheet), rather than projects performed as a member of a JV or by a first-tier subcontractor. Further, if a small business Offeror (or small business JV partner) elects to submit past performance experience performed as a member of a JV or by a first-tier subcontractor, the total number of projects may not exceed five (5).

4.2.3.1.1 For a project performed as a member of a JV to be considered as past performance experience of the small business Offeror (or small business JV partner), the Offeror must identify what duties and responsibilities the small business Offeror (or small business JV partner) carried out as part of the JV. This information shall be included within the project narrative. Failure to provide this information may result in a rating of "Not Relevant" as the Government may not have sufficient information to determine whether the JV partner's effort involved any of the scope and magnitude of effort and complexities this solicitation requires.

4.2.3.1.2 For a first-tier subcontractor's experience to be considered as past performance experience of the small business Offeror (or small business JV partner), the Offeror must include within Volume II of the proposal (1) a letter of intent for this project from the first-tier subcontractor, and (2) demonstrate how such entity or entities will contribute to work of the project. This information does not count against the page limitation for the Relevant Company Effort portion of Factor 1. Failure to provide this information will result in the project not being evaluated.

4.2.3.2 For a small business Offeror (or a small business JV partner), the Government may also consider the past performance experience performed by an affiliate when specifically identified in the proposal. Offerors are advised that the Government may assign a higher confidence rating to Offerors that submit projects performed by the Offeror itself (i.e., the corporate entity listed on the Proposal Data Sheet), rather than projects performed by an affiliate. Further, if a small business Offeror (or small business JV partner) elects to submit past performance experience performed by an affiliate, the total number of projects may not exceed five (5).

4.2.3.2.1 For an affiliate's experience to be considered as past performance of the small business Offeror, the Offeror must include (1) a description of their relationship with the affiliate, and (2) demonstrate how such entity or entities will contribute to work of the project. This information does not count against the page limitation for the Relevant Company Effort portion of Factor 1. Failure to provide this information will result in the project not being evaluated.

4.2.4 All Business Entities: Unless otherwise specified in Paragraphs 4.2.2 and 4.2.3, to satisfy Paragraph 4.2.1 subparagraphs (a) and (b), only information pertaining to the corporate entity listed on the Proposal Data Sheet will be considered in the evaluation. Information related to a parent company, divisions, other related entities, subcontractors, or the individual experience of key personnel will not be considered.

4.3 Volume II - Factor 2 - Technical Approach. The Offeror must submit a technical approach to explain its capabilities to execute the work required for this project, and to demonstrate an understanding of the project requirements. Technical approach narratives may be enhanced with charts, tables, or any logical means of conveying the proposed technical approach the Offeror will use to accomplish the work. Broad general statements that merely mimic the work, repeat, paraphrase, or promise general performance are not sufficient. The response to Factor 1 shall be limited to 5 pages (excluding the preliminary construction schedule). Address each of the following items:

(a) Project Approach - Provide a narrative encompassing all of the project bid items and the work plan for executing those items. The project approach shall address all bid items, clearly demonstrating the technical approach that will be used to accomplish the work; include site conditions and constraints, and logistics planning and constraints.

(b) Preliminary Construction Schedule- Provide a preliminary construction schedule to demonstrate an understanding of the project. Include key tasks with durations for such activities as site investigation(s), project site phasing, work plan phase(s), and the construction phases of the project. Ensure the project duration meets the solicitation requirements in calendar days starting from the Government's notice to proceed (NTP) to Closeout Documents approval. The preliminary construction schedule does not count against the page limitation for Factor 1.

(c) Provide a description of the scopes/trades that the Offeror's intends to self-perform on this project.

(Attachment 1)

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PROPOSAL DATA SHEET

1.	Name of Solicitation:
2.	Offering Firm's Name: Offering Firm's UEI number: Offering Firm's Lead Design Firm Name:
2.a.	If applicable, Offering Firm's Joint Venture (JV) Individual Member Information: JV Member 1 Name & UEI: JV Member 2 Name & UEI:
3.	Mailing Address:
4.	Telephone Number:
5.	Fax Number:
6.	E-mail Address to use for all correspondence:
7.	AUTHORIZED NEGOTIATORS. Far 52.215-11. The Offeror represents that the following person(s) are authorized to negotiate on its behalf with the Government in connection with this solicitation. List name(s), title, and telephone numbers of authorized negotiator(s). Name of Person(s) Authorized to Negotiate: Negotiator's Address: Negotiator's Telephone: Negotiator's E-mail:

End of Attachment

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(Attachment 2)

RELEVANT COMPANY EFFORT - Prime Contractor

The Offeror shall provide the following information for each project submitted for Factor 1, Past Performance Information of the Prime Contractor. Use separate sheets for each project.

1. Company Name: _____
2. Name of Project: _____
Type of Project (DB/DBB/Other): _____
3. Location of Project: _____
4. Project Owner: _____
5. General Scope of Construction Project: _____

6. Your Role (Prime, Joint Venture Partner, or Subcontractor, etc.) and construction type work your company self-performed other than construction management services: _____

7. Construction cost for this project: _____
8. Extent and type of work you subcontracted: _____

9. Construction Period: Start Date _____
Completion/Scheduled Completion Date _____
(Provide Month/Year)
10. Were You Terminated or Assessed Liquidated Damages?
(If either is "Yes", attach an explanation) _____

End of Attachment 2

(Attachment 3)

Part 1 of 2

NAVFAC/USACE PAST PERFORMANCE QUESTIONNAIRE (Form PPQ-0)	
CONTRACT INFORMATION (Contractor to complete Blocks 1-4)	
1. Contractor Information Firm Name: _____ CAGE Code: _____ Address: _____ UEI Number: _____ Phone Number: _____ Email Address: _____ Point of Contact: _____ Contact Phone Number: _____	
2. Work Performed as: <input type="checkbox"/> Prime Contractor <input type="checkbox"/> Sub Contractor <input type="checkbox"/> Joint Venture <input type="checkbox"/> Other (Explain) Percent of project work performed: _____ If subcontractor, who was the prime (Name/Phone #): _____	
3. Contract Information Contract Number: _____ Delivery/Task Order Number (if applicable): _____ Contract Type: <input type="checkbox"/> Firm Fixed Price <input type="checkbox"/> Cost Reimbursement <input type="checkbox"/> Other (Please specify): _____ Contract Title: _____ Contract Location: _____ Award Date (mm/dd/yy): _____ Contract Completion Date (mm/dd/yy): _____ Actual Completion Date (mm/dd/yy): _____ Explain Differences: _____ Original Contract Price (Award Amount): _____ Final Contract Price (to include all modifications, if applicable): _____ Explain Differences: _____	
4. Project Description: Complexity of Work <input type="checkbox"/> High <input type="checkbox"/> Med <input type="checkbox"/> Routine How is this project relevant to project of submission? (Please provide details such as similar equipment, requirements, conditions, etc.) _____	
CLIENT INFORMATION (Client to complete Blocks 5-8)	
5. Client Information Name: _____ Title: _____ Phone Number: _____ Email Address: _____	
6. Describe the client's role in the project: _____	
7. Date Questionnaire was completed (mm/dd/yy): _____	
8. Client's Signature: _____	

Must be signed by Client to be considered complete

NOTE: USACE REQUESTS THAT THE CLIENT COMPLETES THIS QUESTIONNAIRE AND SUBMITS DIRECTLY BACK TO THE OFFEROR. THE OFFEROR WILL SUBMIT THE COMPLETED QUESTIONNAIRE TO USACE WITH THEIR PROPOSAL, AND MAY DUPLICATE THIS QUESTIONNAIRE FOR FUTURE SUBMISSION ON USACE SOLICITATIONS. CLIENTS ARE HIGHLY ENCOURAGED TO SUBMIT QUESTIONNAIRES DIRECTLY TO THE OFFEROR. HOWEVER, QUESTIONNAIRES MAY BE SUBMITTED DIRECTLY TO USACE. PLEASE CONTACT THE OFFEROR FOR USACE POC INFORMATION. THE GOVERNMENT RESERVES THE RIGHT TO VERIFY ANY AND ALL INFORMATION ON THIS FORM.

*ADJECTIVE RATINGS AND DEFINITIONS TO BE USED TO BEST REFLECT
 YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE*

RATING	DEFINITION	NOTE
(E) Exceptional	Performance meets contractual requirements and exceeds many to the Government/Owner's benefit. The contractual performance of the element or sub-element being assessed was accomplished with few minor problems for which corrective actions taken by the contractor was highly effective.	An Exceptional rating is appropriate when the Contractor successfully performed multiple significant events that were of benefit to the Government/Owner. A singular benefit, however, could be of such magnitude that it alone constitutes an Exceptional rating. Also, there should have been NO significant weaknesses identified.
(VG) Very Good	Performance meets contractual requirements and exceeds some to the Government /Owner's benefit. The contractual performance of the element or sub-element being assessed was accomplished with some minor problems for which corrective actions taken by the contractor were effective.	A Very Good rating is appropriate when the Contractor successfully performed a significant event that was a benefit to the Government/Owner. There should have been no significant weaknesses identified.
(S) Satisfactory	Performance meets minimum contractual requirements. The contractual performance of the element or sub-element contains some minor problems for which corrective actions taken by the contractor appear or were satisfactory.	A Satisfactory rating is appropriate when there were only minor problems, or major problems that the contractor recovered from without impact to the contract. There should have been NO significant weaknesses identified. Per DOD policy, a fundamental principle of assigning ratings is that contractors will not be assessed a rating lower than Satisfactory solely for not performing beyond the requirements of the contract.

<p>(M) Marginal</p>	<p>Performance does not meet some contractual requirements. The contractual performance of the element or sub-element being assessed reflects a serious problem for which the contractor has not yet identified corrective actions. The contractor's proposed actions appear only marginally effective or were not fully implemented.</p>	<p>A Marginal is appropriate when a significant event occurred that the contractor had trouble overcoming which impacted the Government/Owner.</p>
<p>(U) Unsatisfactory</p>	<p>Performance does not meet most contractual requirements and recovery is not likely in a timely manner. The contractual performance of the element or sub-element contains serious problem(s) for which the contractor's corrective actions appear or were ineffective.</p>	<p>An Unsatisfactory rating is appropriate when multiple significant events occurred that the contractor had trouble overcoming and which impacted the Government/Owner. A singular problem, however, could be of such serious magnitude that it alone constitutes an unsatisfactory rating.</p>
<p>(N) Not Applicable</p>	<p>No information or did not apply to your contract</p>	<p>Rating will be neither positive nor negative.</p>

(Attachment 3 continued)
 Part 2 of 2
TO BE COMPLETED BY CLIENT

PLEASE CIRCLE THE ADJECTIVE RATING WHICH BEST REFLECTS YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE			
1. QUALITY:			
a) Quality of technical data/report preparations	E M	VG U	S N
b) Ability to meet quality standards specified for technical performance	E M	VG U	S N
c) Timeliness/effectiveness of contract problem resolution without extensive customer guidance	E M	VG U	S N
d) Adequacy/effectiveness of quality control program and adherence to contract quality assurance requirements (without adverse effect on performance)	E M	VG U	S N
2. SCHEDULE/TIMELINESS OF PERFORMANCE:			
a) Compliance with contract delivery/completion schedules including any significant intermediate milestones. <i>(If liquidated damages were assessed or the schedule was not met, please address below)</i>	E M	VG U	S N
b) Rate the contractor's use of available resources to accomplish tasks identified in the contract	E M	VG U	S N
3. CUSTOMER SATISFACTION:			
a) To what extent were the end users satisfied with the project?	E M	VG U	S N
b) Contractor was reasonable and cooperative in dealing with your staff (including the ability to successfully resolve disagreements/disputes; responsiveness to administrative reports, businesslike and communication)	E M	VG U	S N
c) To what extent was the contractor cooperative, businesslike, and concerned with the interests of the customer?	E M	VG U	S N
d) Overall customer satisfaction	E M	VG U	S N
4. MANAGEMENT/ PERSONNEL/LABOR			
a) Effectiveness of on-site management, including management of subcontractors, suppliers, materials, and/or labor force?	E M	VG U	S N
b) Ability to hire, apply, and retain a qualified workforce to this	E M	VG U	S N
c) Government Property Control	E M	VG U	S N
d) Knowledge/expertise demonstrated by contractor personnel	E M	VG U	S N
e) Utilization of Small Business concerns	E M	VG U	S N
f) Ability to simultaneously manage multiple projects with multiple disciplines	E M	VG U	S N
g) Ability to assimilate and incorporate changes in requirements and/or priority, including planning, execution and response to Government changes	E M	VG U	S N
h) Effectiveness of overall management (including ability to effectively lead, manage and control the program)	E M	VG U	S N

5. COST/FINANCIAL MANAGEMENT			
a) Ability to meet the terms and conditions within the contractually agreed price(s)?	E M	VG U	S N
b) Contractor proposed innovative alternative methods/processes that reduced cost, improved maintainability or other factors that benefited the client	E M	VG U	S N
c) If this is/was a Government cost type contract, please rate the Contractor's timeliness and accuracy in submitting monthly invoices with appropriate back-up documentation, monthly status reports/budget variance reports, compliance with established budgets and avoidance of significant and/or unexplained variances (under runs or overruns)	E M	VG U	S N
d) Is the Contractor's accounting system adequate for management and tracking of costs? <i>If no, please explain in Remarks section.</i>	Yes No		
e) If this is/was a Government contract, has/was this contract been partially or completely terminated for default or convenience or are there any pending terminations? <i>Indicate if show cause or cure notices were issued, or any default action in comment section below.</i>	Yes No		
f) Have there been any indications that the contractor has had any financial problems? <i>If yes, please explain below.</i>	Yes No		
6. SAFETY/SECURITY			
a) To what extent was the contractor able to maintain an environment of safety, adhere to its approved safety plan, and respond to safety issues? (Includes: following the users rules, regulations, and requirements regarding housekeeping, safety, correction of noted deficiencies, etc.)	E M	VG U	S N
b) Contractor complied with all security requirements for the project and personnel security requirements.	E M	VG U	S N
7. GENERAL			
a) Ability to successfully respond to emergency and/or surge situations (including notifying COR, PM or Contracting Officer in a timely manner regarding urgent contractual issues).	E M	VG U	S N
b) Compliance with contractual terms/provisions (<i>explain if specific issues</i>)	E M	VG U	S N
c) Would you hire or work with this firm again? (<i>If no, please explain below</i>)	Yes No		
d) In summary, provide an overall rating for the work performed by this contractor.	E M	VG U	S N
Client Signature:	Date:		

Please provide responses to the questions above (if applicable) and/or additional remarks. Furthermore, please provide a brief narrative addressing specific strengths, weaknesses, deficiencies, or other comments which may assist our office in evaluating performance risk (please attach additional pages if necessary)

****Must be signed by Client to be considered complete****

End of Attachment 3

End of Section

Section 00 12 00
SELECTION PROCEDURES AND BASIS OF AWARD

1.0 GENERAL REQUIREMENTS.

1.1 Section 00 11 00 describes the proposal instructions for submission requirements and instructions. This section outlines the evaluation process and basis of award.

2.0 EVALUATION PROCESS.

2.1 A Source Selection Evaluation Board (SSEB) composed of U.S. Army Corps of Engineers personnel, Using Activity representative, and, as necessary, technical advisors will conduct the evaluation. The number and identities of Offerors are not revealed to anyone not involved in the evaluation and award process or to other Offerors. The SSEB will evaluate proposals, using the factor and evaluation criteria described in this section.

2.2 The evaluation process consists of four (4) parts: Proposal Compliance Review, Non-Price Factor Evaluation, Price Evaluation, and Non-Price/Price Trade-off Analysis.

2.2.1 Proposal Compliance Review. This is an initial check by Contracting Division to ensure that all required forms are complete, and in compliance with all administrative and submission criteria. Proposals failing to provide all required administrative and submission criteria may be deemed non-compliant and excluded from further evaluation.

2.2.2 Non-Price Factor Evaluation. In accordance with the solicitation, each member of the SSEB will conduct an independent review of the proposals. The review will be an in-depth, systematic evaluation of the proposal against the submission criteria and evaluation factor. After these reviews, the SSEB, by consensus, will provide a rating for each evaluation factor supported by a justifying narrative. The Offeror's ratings are confidential and will remain in the Contracting Officer's files. Upon completion of the evaluations, the results will be provided to the Contracting Officer in the form of a Proposal Analysis Report.

2.2.3 Price Evaluation. The Government will initially review pricing independently from the factor evaluation. Price is not rated but will be analyzed for fairness and reasonableness through the use of cost and/or price analysis. The price analysts will also check for appearance of unbalanced pricing. Per FAR 15.404-1(g), unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly over or understated as indicated by the application of cost or price analysis techniques. The Government may reject an offer as non-responsive if it is materially unbalanced. The price evaluation will document the fairness and reasonableness of the proposed bid. If adequate price competition exists, no additional cost information will be requested. However, if at any time during this competition the Contracting Officer determines that further analysis is needed, detailed cost breakdowns may be requested.

2.2.4 Non-Price/Price Trade-Off Analysis. In determining the awardee for the firm fixed price contract, the factor ratings will be used during the non-price/price tradeoff analysis. After price analysis of the Bid Schedules and

the factor evaluations are completed, the Government will then consider the prices in connection with the factor ratings, comparing the relative advantages and disadvantages of the proposals and prices. If the Contracting Officer determines discussions are not required, the Contracting Officer, relying on the SSEB report and comparative analysis, shall exercise independent judgment and provide a rational basis for the award. This decision, reflected in the Source Selection Decision Document (SSDD), will be based on the proposal that offers the best value to the Government in terms of their combined factor rating and price. This may result in an award being made to higher rated, yet higher price offeror where the decision is consistent with the solicitation's evaluation factor and the Contracting Officer reasonably determines that the superiority of the non-price factor rating of the higher priced offeror justifies the additional costs.

3.0 EVALUATION CRITERIA.

3.1 There are two volumes required in response to this solicitation. Volume I includes certain administrative requirements that are not rated. Volume II has two rated non-priced evaluation factors.

EVALUATION FACTORS AND ORDER OF RELATIVE IMPORTANCE

Volume	Factor - Description	Relative Importance
Volume I	Administrative Requirements (Including Price)	Not Rated
Volume II	Factor 1 - Past Performance Information of the Prime Contractor	1 st in relative importance; more important than Factor 2
Volume II	Factor 2 - Technical Approach	2 nd in relative importance; least important factor

Non-priced evaluation factors are significantly more important than price.

Amendment 0003

3.2 Evaluation of Factor 1 - Past Performance Information of the Prime Contractor. ~~and Factor 2 - Past Performance Information of the Lead Design Firm. Factor 1 and Factor 2 will be rated individually, each **Factor 1 will be rated**~~ with relevancy ratings and a confidence rating applied as described below.

(1) An Offeror's "Relevant Company Effort" information will be evaluated to determine if the construction or repair projects submitted are "recent", and "relevant". For this solicitation, the Government will assign more relevance to projects demonstrating installation of solar systems and/or battery energy storage systems (BESS); for dollar values similar to those anticipated under this solicitation, or greater; and for projects where the Offeror performed as the prime contractor, as opposed to a subcontractor. Offerors demonstrating a project portfolio with more "relevant" projects may be given more consideration; and therefore, a higher confidence rating as identified below.

(2) The Government will then assess how well an Offeror performed on their projects. The Government will, as necessary, confirm quality of past performance data provided by the Offeror and, at its discretion, obtain additional past performance information, if available, from other sources. When the relevant performance record indicates performance problems, the

Government will consider the number and severity of the problems and the appropriateness and effectiveness of any corrective action taken (not just planned or promised). The Government may review more recent contracts or performance evaluations to ensure corrective actions have been implemented and evaluate their effectiveness.

(3) Upon completion of its evaluation of each project, the SSEB, by consensus, will assign each project one of the following ratings:

Past Performance Relevancy Ratings	
•	Very Relevant - Present/Past effort involved essentially the same scope and magnitude, effort and complexities this solicitation requires.
•	Relevant - Present/Past effort involved similar scope and magnitude of effort and complexities this solicitation requires.
•	Somewhat Relevant - Present/Past effort involved some scope and magnitude of effort and complexities this solicitation requires.
•	Not Relevant - Present/Past effort involved little or none of the scope and magnitude of effort and complexities this solicitation requires.

No overall relevancy rating is assigned to an Offeror's portfolio of projects. Rather, after checking compliance and assigning each project a relevancy rating, the SSEB will then determine an overall Performance Confidence Assessment rating. The overall Performance Confidence Assessment rating takes into consideration the degree of relevancy of each project and the quality ratings of those projects.

(4) The overall Performance Confidence Assessment Rating reflects the degree of probability that the Offeror ~~and Lead Design Firm~~ will be able to meet the solicitation's requirements. Upon completion of the evaluation, one of the following ratings will be assigned:

Performance Confidence Assessment Ratings and Description	
Substantial Confidence	Based on the Offeror's recent/relevant performance record, the Government has a high expectation that the Offeror will successfully perform the required effort.
Satisfactory Confidence	Based on the Offeror's recent/relevant performance record, the Government has a reasonable expectation that the Offeror will successfully perform the required effort.
Neutral Confidence	No recent/relevant performance record is available, or the Offeror's performance record is so sparse that no meaningful confidence assessment rating can be reasonably assigned. The offeror may not be evaluated favorably or unfavorably on the factor of past performance.
Limited Confidence	Based on the Offeror's recent/relevant performance record, the Government has a low expectation that the Offeror will successfully perform the required effort.
No Confidence	Based on the Offeror's recent/relevant performance record, the Government has no expectation that the Offeror will successfully perform the required effort.

(5) Offerors ~~and Lead Design Firms~~ with little or no relevant past performance will not be evaluated favorably or unfavorably for Factor 1 or 2. However, such a proposal will be rated neutral confidence, and thus may not represent the most advantageous proposal to the Government when compared to the proposals of other Offerors ~~and Lead Design Firms~~ with recent/relevant

past performance.

 Amendment 0003

3.3 Volume II - Evaluation of Factor 2 - Technical Approach. The SSEB will evaluate the technical approach narrative to assess the Offeror's understanding of the requirements of the solicitation. The SSEB will evaluate the project approach for logic, reasonableness and overall understanding of the requirements of the contract. The SSEB will evaluate the preliminary construction schedule to assess the Offeror's understanding of the overall duration of the project and the construction activities that are necessary in order to meet the requirements of the project. The schedule will be assessed for its logic, reasonableness of scheduled activities/tasks, and task durations necessary to complete construction, within the required performance period. The SSEB will evaluate the Offeror's self-performance to assess the Offeror's understanding of the requirements of the project and its capabilities to accomplish the work required by this RFP.

The SSEB will determine the strengths, weaknesses and deficiencies, if any, in the approach presented, and then assign an overall combined technical/risk ratings as listed below. The technical rating reflects the degree to which the proposed approach meets or does not meet the minimum technical requirements.

COMBINED TECHNICAL/RISK RATINGS

Ratings	Combined Technical/Risk Rating Definitions
OUTSTANDING	Proposal indicates an exceptional approach and understanding of the requirements and contains multiple strengths, and risk of unsuccessful performance is low.
GOOD	Proposal indicates a thorough approach and understanding of the requirements and contains at least one strength, and risk of unsuccessful performance is low to moderate.
ACCEPTABLE	Proposal meets requirements and indicates an adequate approach and understanding of the requirements, and risk of unsuccessful performance is no worse than moderate.
MARGINAL	Proposal has not demonstrated an adequate approach and understanding of the requirements, and/or risk of unsuccessful performance is high.
UNACCEPTABLE	Proposal does not meet requirements of the solicitation, and thus, contains one or more deficiencies, and/or risk of unsuccessful performance is unacceptable. Proposal is unawardable.

The technical risk rating reflects the degree to which the proposed approach meets or does not meet the minimum technical requirements. The technical risk rating definitions in support of the above referenced table are as follows:

- a) Low - Low risk means the proposal may contain weakness(es) which have little potential to cause disruption of schedule, increased cost or degradation of performance. Normal contractor effort and normal Government monitoring will likely be able to overcome any difficulties.

- b) Moderate - Moderate risk means the proposal contains a significant weakness or combination of weaknesses which may potentially cause disruption of schedule, increased cost or degradation of performance. Special contractor emphasis and close Government monitoring will likely be able to overcome difficulties.
- c) High - High risk means the proposal contains a significant weakness or combination of weaknesses which is likely to cause significant disruption of schedule, increased cost or degradation of performance. Is unlikely to overcome any difficulties, even with special contractor emphasis and close Government monitoring.
- d) Unacceptable - Unacceptable risk means the proposal contains a material failure or a combination of significant weaknesses that increases the risk of unsuccessful performance to an unacceptable level.

3.4 Additional definitions used in all factors.

3.4.1 Deficiency.

a) A material failure of a proposal to meet a Government requirement or combination of significant weaknesses in a proposal that increases the risk of unsuccessful contract performance to an unacceptable level (FAR 15.001).

b) The evaluators will identify the RFP requirement and describe why a deficiency or deficiencies exist in the proposal. All deficiencies discovered will be identified to the Offeror during discussions, if conducted, and in the debriefing. Failure by an Offeror to rectify deficiencies will preclude award action to that Offeror.

c) The Contract requirements take precedence over deficiencies (or deviations) discovered after award.

d) Deviation. Proposal implies or specifically offers something below specified criteria. The Offeror may or may not have called the deviation to the Government's attention. A deviation is a deficiency. The technical reviewers will identify any deviations.

3.4.2 Clarification. If award will be made without discussions, offerors may be given the opportunity to clarify certain aspects of the proposal or resolve minor or clerical errors (see FAR 15.306(a)(1) and (2)). Clarifications do not give the Offeror an opportunity to revise or modify its proposal. Clarifications do not require "discussions" or submission of another proposal. The paragraph does not obligate the Government to seek clarifications. The Government reserves the right to award without seeking any clarifications.

3.4.3 Weakness.

a) A flaw in the proposal that increases the risk of unsuccessful contract performance. A "significant weakness" in the proposal is a flaw that appreciably increases the risk of unsuccessful contract performance.

b) All weaknesses, significant weaknesses, and deficiencies will be identified to the Offeror during discussions, if conducted, and in the debriefing. Failure by an Offeror to rectify multiple significant weaknesses

deemed essential will preclude award action to that Offeror.

3.4.4 Strength. Any aspect of a proposal that, when judged against a stated evaluation criterion, enhances the merit of the proposal or increase the probability of successful performance of the contract. A "significant strength" appreciably enhances the merit of a proposal or appreciably increases the probability of successful contract performance.

4.0 DISCUSSIONS. The Government reserves the right to conduct discussions, and allow proposal revisions, if the Contracting Officer determines that discussions are in the Government's best interest. Offerors are cautioned that discussions may not be conducted and offerors should not assume that they will have an opportunity to revise their proposals after submission.

4.1 If discussions are deemed necessary, the Contracting Officer will include only those firms determined to be the most highly rated; those whose proposals are reasonably susceptible to being made acceptable; but not those that are so deficient as to essentially require major revisions or a total re-write of their proposal. In certain circumstances, the Government may limit offers in the competitive range to a number that will permit an efficient competition. If discussions are required, the SSEB will follow the evaluation process herein until discussions are closed. Upon the conclusion of discussions, those Offerors still within the competitive range will be afforded an opportunity to revise their proposals and submit a Final Proposal Revision for evaluation. If discussions are held, Offerors are required to submit their responses to comments electronically. Electronic submissions shall meet the submission deadline set forth by the Contracting Officer during discussions or indicated in the Amendment requesting the Final Proposal Revisions. Regardless of the submittal process used, the Contracting Officer will notify all the Offerors in the competitive range, in writing, how and when interim revisions and final proposals revisions are to be submitted.

4.2 Upon conclusion of discussions, those offerors still within the competitive range will be afforded an opportunity to revise their proposal and to submit their final proposal revisions for evaluation.

5.0 THE SELECTION PROCESS.

5.1 The Contracting Officer will perform the previously discussed Non-Price/Price Trade-Off Analysis considering non-price evaluation factor and price. The Contracting Officer, independently exercising prudent business judgement, will make the Source Selection Decision based on the Offeror whose proposal offers the best value to the Government. This may result in an award being made to a higher rated, higher price Offeror where the decision is consistent with the solicitation's evaluation factor and the Contracting Officer reasonably determines that the technical superiority of the higher priced Offeror outweighs the price differences. This may also result in rejection of all offers and re-evaluation and/or cancellation of the solicitation.

6.0 BASIS OF AWARD.

6.1 It is the Government's intent to award a firm-fixed price contract to the responsible Offeror whose proposal, conforming to the solicitation, is fair and reasonable, and has been determined to be the most advantageous to

the Government, non-price, price and other factors considered.

6.2 The non-priced evaluation factor is significantly more important than price. A contract will not be awarded to an offeror with a deficiency as defined in FAR 15.001.

6.3 The Government reserves the right to accept other than the lowest priced offer. The Government also reserves the right to reject any and all offers. The basis of award will be the conforming offer, the price of which may or may not be the lowest.

END OF SECTION

SECTION 01 00 00

ADDITIONAL SPECIAL CONTRACT REQUIREMENTS
Department of Homeland Security, Center for Domestic Preparedness
Anniston, AL

PART 1 GENERAL

1.1 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK

a. The Contractor shall be required to (1) commence work under this contract(s) within 8 calendar days after the date the Contractor receives the notice to proceed, (2) prosecute the work diligently, and (3) construct the entire project, ready for use, not later than 450 calendar days after receipt of notice to proceed. This time stated for completion shall include final cleanup of the premises.

b. All work required for completion of this task order shall be performed in accordance within the requirements of the originally awarded (MATOC) contract. Any conflicts between the requirements of this SOW and the original contract shall be brought to immediate attention of the Administrative Contracting Officer (ACO) for resolution.

1.2 LIQUIDATED DAMAGES--CONSTRUCTION

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of **\$1,404.00** 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.

1.3 Center for Domestic Preparedness (CDP) Security Requirements

1.3.1 General CDP Security

The Contractor is responsible for the physical security for all materials, supplies and equipment of every description, including property that may be government owned when located in the Contractor's work or storage areas, and also areas occupied jointly by the Contractor and the government. The Contractor shall comply with all CDP security requirements.

Contractor employees and employees of lower-tier subcontractors whose conduct is determined to be prejudicial to the interest of the Government shall be immediately removed from the work upon notification by the CO.

Compliance with the foregoing provisions of this paragraph by lower-tier subcontractors shall be the responsibility of the Contractor at no additional costs to the government for such action.

The government reserves the right at all times to issue instructions pertaining to the Contractor's jurisdiction and general conduct of its security program and shall have the right to examine procedures, methods,

records, and facilities used by the Contractor in complying with the requirements of the government.

The Contractor shall be responsible to adhere to any and all security regulations imposed by the government.

The CDP is designated as a workplace free of Alcohol and Substance Abuse problems associated with drugs and other chemical substances. The government may conduct periodic and unannounced inspections of the Contractor's work areas within government property (CDP) boundaries. Tobacco use is permitted in designated areas.

1.3.2 Background Investigations

A national background security check form shall be completed by each Contractor employee and routed through the CDP security office for processing. The security forms will be provided by the CO/COR as soon as the contract is awarded. Allow 14 workdays to process the local security check; therefore, it is advisable to submit the above referenced security form as soon as personnel who will be working on site are identified. The form must be properly completed in order to preclude delays in processing the request. This form authorizes a national background check by each individual. A successful background check is required prior to granting access to CDP property and is required every six months thereafter. In the event personnel executing this contract require continuous daily access exceeding 120 days section 1.5.6.2 shall apply.

All contractor personnel who require access to DHS or FEMA information systems, routine, access to sensitive information, including but not limited to Personally Identifiable Information (PII), or routine or continuous access exceeding 120 days to DHS or FEMA facilities shall be subject to a full background investigation commensurate with the level of the risk associated with the job function or work being performed. Construction contractor personnel exceeding the continuous access 120 day threshold under this contract have been determined to be "Low Risk without Information System Access" as defined below.

a. Low Risk without Information System Access

Contractor personnel occupying positions or performing functions with a Low Risk designation and who do not require access to DHS or FEMA information systems shall undergo a Tier 1 (T1) background investigation which is equivalent to the previously identified National Agency Check with Inquiries (NACI) and must receive a favorable adjudication thereof from FEMA PSD prior to performing work under this contract.

b. Low Risk with Information System Access

Contractor personnel occupying positions or performing functions with a Low Risk designation and who require access to DHS or FEMA information systems shall undergo a Tier 2 (T2) background investigation which is equivalent to the previously identified Moderate Risk Background Investigation (MBI) and must receive a favorable adjudication thereof from FEMA PSD prior to performing work under this contract.

c. Moderate Risk

Contractor personnel occupying positions or performing functions with a Moderate Risk designation shall undergo a Tier 2 (T2) background investigation which is equivalent to the previously identified

Moderate Risk Background Investigation (MBI) and must receive a favorable adjudication thereof from FEMA PSD prior to performing work under this contract.

d. High Risk

Contractor personnel occupying positions or performing functions with a High-Risk designation shall undergo a Tier 4 (T4) background investigation which is equivalent to the previously identified Background Investigation (BI) and must receive a favorable adjudication thereof from FEMA PSD prior to performing work under this contract.

1.3.3 Background Investigation Process

1. To initiate the request to process contractor personnel, the Contractor shall provide the USACE Contracting Officer's Representative (COR) with all required information and comply with all necessary instructions to complete Section II of the FEMA Form 11000-25, "Contract Fitness/Security Screening Request." The USACE COR shall ensure that all other applicable sections of the FEMA Form 11000-25 are complete prior to submitting the form to FEMA PSD for processing. The Contractor shall also provide the USACE COR with completed OF 306, "Declaration for Federal Employment," forms for all contractor personnel.

2. Contractor personnel who already have a favorably adjudicated background investigation, may be eligible to perform work under this contract without further processing by FEMA PSD if:

- a. the investigation was completed within the last five years,
- b. it meets or exceeds the minimum requirement for the position they will occupy or functions they will perform on this contract,
- c. the contractor personnel have not had a break in federal or federal contract employment since the prior favorable adjudication, and
- d. FEMA PSD has verified the investigation and confirmed that no new derogatory information has been disclosed which may require a reinvestigation.

3. FEMA PSD EOD notifications to the COR of the contractor personnel eligible to work based on prior, favorable adjudication. The COR will, in turn, notify the Contractor of the names of the favorably adjudicated contractor personnel, at which time the favorably adjudicated contractor personnel will be eligible to begin work under this contract.

For those contractor personnel who do not have an acceptable, prior, favorable adjudication or who otherwise require reinvestigation, FEMA PSD will issue an electronic notification via email to the contractor personnel that contains the following documents, which are incorporated into this contract by reference, along with a link to the Office of Personnel Management's Electronic Questionnaires for Investigation Processing (e-QIP) system and instructions for submitting the necessary information:

- a. Standard Form 85 of 85P, "Questionnaire for Public Trust Positions"
- b. Optional Form 306, "Declaration for Federal Employment"
- c. Instruction will be sent for completing the SF 87, "Fingerprint Card" (2 copies)
- d. DHS Form 11000-6, "Non-Disclosure Agreement"
- e. DHS Form 11000-9, "Disclosure and Authorization Pertaining to Consumer Reports Pursuant to the Fair Credit Reporting Act"

4. FEMA PSD will only accept complete packages consisting of all of the above documents and Standard Form 85P, which must be completed electronically through the Office of Personnel Management's e-QIP system. The Contractor is responsible for ensuring that all contractor personnel timely and properly submit all required background information.

5. Residency requirements apply to the background investigation process. Persons subject to investigation and final adjudication for fitness or suitability must have lived within the United States for no less than 3 of the last 5 years as defined in the DHS Instruction 121-01-007-01, The Department of Homeland Security, Personnel Security, Suitability and Fitness Program (June 14, 2016). DHS has determined this to be the amount of time required to be the sufficient minimum investigative period for the purpose of performing a suitability or fitness adjudication. Both, OPM and OMB require a final adjudicative decision to support the issuance of the HSPD-12 compliant PIV Card that contractors are issued by FEMA Physical Security.

6. Once contractor personnel have properly submitted the complete package of all required background information, FEMA's Personnel Security Division, at its sole discretion, may grant contractor personnel temporary eligibility to perform work under this contract prior to completion of the full background investigation if the Personnel Security Division's initial review of the contractor personnel's background information reveals no issues of concern. In such cases, FEMA's Personnel Security Division will provide notice of such temporary eligibility to the COR who will then notify the Prime Contractor, at which time the identified contractor personnel will be temporarily eligible to begin work under this contract. Neither the Prime Contractor nor the contractor personnel has any right to such a grant of temporary eligibility. The grant of such temporary eligibility shall not be considered as assurance that the contractor personnel will remain eligible to perform work under this contract upon completion of and final adjudication of the full background investigation.

7. Upon favorable adjudication of the full background investigation, FEMA's Personnel Security Division will update the contractor personnel's security file and take no further action. In any instance where the final adjudication results in an unfavorable determination FEMA's Personnel Security Division will notify the contractor personnel directly, in writing, of the decision and will provide the COR with the name(s) of the contractor personnel whose adjudication was unfavorable. The COR will then forward that information to the Contractor. Contractor personnel who receive an unfavorable adjudication shall be ineligible to perform work under this contract. Unfavorable adjudications are final and not subject to review or appeal.

8. Eligibility determinations based on a NACI=T1, MBI=T2 and BI=T4 are valid for five years from the date that the investigation was completed and closed. Contractor personnel required to undergo a background investigation to perform work under this contract shall be ineligible to perform work under this contract upon the expiration the background investigation unless and until the contractor personnel have undergone a reinvestigation and FEMA's Personnel Security Division has renewed their eligibility to perform work under this contract.

9. When possible, the Contractor shall provide at least two days notification to the COR prior to removing an employee from the project. Any additional personnel added to the established project work force shall

be in accordance with this paragraph.

10. All workers/ visitors shall report to the Building 61 Front Guard House for badging before proceeding to the job site. Visitors must have picture identification for verification purposes. The COR will arrange for the necessary badging of Contractor personnel, as appropriate. All job site security and/or law enforcement related matters shall be processed through the COR and CDP Security Specialist. The contractor shall work with the COR and CDP security to maintain an up to date employee workbook (excel spreadsheet) to track employee badging needs.

11. The Contractor shall ensure employees requiring on-site access display such Identification Badging as may be approved and directed by the CO. All prescribed Identification Badges shall immediately be returned to the government for cancellation upon release of any employee. The contractor shall be liable for the replacement costs of any non-returned PIV Badges at \$113.00 per badge. Lost/stolen PIV badge notifications to security shall be made without delay. Contractor and COR shall be required to submit a Lost/Stolen Badge Report through the CDP Security Office.

12. The entire CDP security requirement section (1.6.) shall be included by the Contractor in all subcontracts and purchase orders and further requires lower-tier Contractors and vendors to include these same requirements in their subcontracts and purchase orders.

1.3.4 ADDITIONAL SECURITY REQUIREMENTS

All personnel require access to information up to the sensitive but unclassified, for official use only (FOUO) levels. Contractor must ensure contractor employees receive a favorably adjudicated public trust suitability prior to entry on duty (EOD). All individuals will be U.S. citizens. The contractor shall follow the standards established within DHS and FEMA policy.

Unauthorized Disclosure of Classified or Unclassified Information:
Contractors and Subcontractors who are working on this contract shall receive Unauthorized Disclosure of Classified or Unclassified Information training.

Access to the training can be obtained at:
<https://securityawareness.usalearning.gov/unauthorizedrefresher/index.htm>

Send the certificate of completion to the FEMA Contracting Officer Representative no later than 30 calendar days after awarded contract. New employees entering the contract must receive the briefing within ten (10) business days of joining the contract.

OPSEC Training:
Contractors and Subcontractors who are working on this contract shall receive the OPSEC Awareness Brief.

Access to the briefing can be obtained at <http://cdsetrain.dtic.mil/opsec>

Send the certificate of completion to the FEMA Contracting Officer Representative no later than 30 calendar days after awarded contract. New employees entering the contract must receive the briefing within ten (10) business days of joining the contract.

Insider Threat Training:

Insider Threat training for Contractors can be found at:
<http://cdsetrain.dtic.mil/itawareness/index.htm>.

Certificate of training is required for all cleared contractor employees who are working with classified or unclassified information. All certificates must be sent to the assigned FEMA Contracting Officer Representative, before the Contractor or Subcontractor is granted access to classified or unclassified information but no later than 30 calendar days after awarded contract. All cleared contractor personnel are required to recertify Insider Threat training annually thereafter. New employees entering the contract must receive the briefing within ten (10) business days of joining the contract.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The Contractor shall provide all required submittals to support the work under this task order. Submittals will be forwarded to the Government using ENG Form 4025. The Contractor is fully responsible for the completeness of details in the submittals necessary to support the Work. The contractor shall anticipate a turnaround of 16 calendar days for all submittals. Provide electronic copies of all specifications, material data (cut sheets), operations and maintenance documentation, warranty documents and all other submittals in PDF format. All electronic files associated with this project shall be submitted on a labeled CD. The Contractor shall provide 5 hard copies and 2 electronic copies of all project submittals. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Project Schedule; G,CD.

Site, Safety and Health Plan; G,CD.

Contractor Quality Control Plan; G,CD.

Submittal Register; G,CD.

SD-02 Shop Drawings

Shop Drawings; G,CD.

As-Built Drawings; G,CD.

SD-03 Product Data

Equipment Data; G,CD.

Material Cut Sheets; G,CD.

SD-07 Certificates

Testing Reports; G,CD.

Interruption of utility services request; G,CD

Certificates of Compliance; G,CD.

SD-10 Operation and Maintenance Data

Operation and Maintenance Manuals; G,CD.

SD-11 Closeout Submittals

Training Plan; G,CD.

Final Report; G,CD.

AMENDMENT 0003

1.4.1 Project Schedule

The ~~referenced~~Incinerator building ~~and~~will not be occupied during the duration of this project. The adjacent buildings and spaces will continue to be occupied for intermittent training classes during this renovation process and operational changes to the building and area/space occupancy will be modified based on the proposed construction schedule. It is the intent for the USACE, CDP, and contractor together to identify an optimum construction schedule.

Contractor must provide a construction schedule that will outline the period of performance required to complete this task for completion. The work described in this statement of work requires buildings and facilities to be worked in for a period of time and the government reserves the right to approve the work schedule for planning purposes in developing alternative solutions for building occupants, if needed.

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1.4.2 Site, Safety and Health Plan

The Contractor shall prepare and submit for Government review and approval, a draft and final Site, Safety and Health Plan (SSHP). The purpose of the SSHP is to outline health and safety procedures and protocols to be followed by Contractor/sub-contractor personnel during field activities, specifically addressing each task and phase of work. The plan shall address the steps taken to locate and avoid the utilities on the sites. The SSHP must be administered by a qualified safety and health professional and shall comply with all applicable Federal, State, and local health and safety requirements, including the Occupational Safety and Health Administration's (OSHA) requirements (29 CFR 1910 and 1926), specifically 29 CFR 1910.120, Hazardous Waste Operations and Response; EPA's Hazardous Waste Requirements (40 CFR 260-270); the latest edition of USACE Safety and Health Requirements Manual (EM 385-1-1). All work shall be performed in accordance with the accepted plan. The SSHP shall be prepared in accordance with Section 28 and Appendix A of EM 385-1-1 dated 15 Sept 2008.

1.4.3 Contractor Quality Control Plan

The Contractor shall submit a Contractor Quality Control (CQC) Plan. Items within the plan shall incorporate the requirements of the project

specifications. The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. Work will be permitted to begin only after acceptance of the CQC Plan. The CQC Plan shall include the following to cover all construction operations, both onsite and offsite:

- a. A description of the quality control organization, including a chart showing lines of authority, and acknowledgment that the CQC staff shall implement the three-phase control system for all aspects of the work specified. The name, qualifications, duties, responsibilities, and authorities of each person assigned a CQC function.
- b. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract.
- c. Procedures to provide for scheduling, reviewing, certifying, and managing submittals.
- d. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. Reporting procedures, including proposed reporting formats.
- e. Measurements taken to ensure that only trained and qualified personnel will be performing the tasks associated with this SOW.
- f. Listing of definable features of work in which the three-phase control system will be implemented upon.
- g. The contractor shall provide photographic documentation throughout the course of the project. Photographic documentation shall include capturing all aspects of the project to include milestones and deficiencies from start to completion. These photos shall be provided, in electronic format, weekly (or as required by the COR) along with the progress reports. Photography of CDP security measures such as monitoring systems is prohibited. The contractor shall coordinate with the COR prior to taking such photos. All photos shall be as part of the daily report in RMS.

1.4.4 Submittal Register

Contractor shall submit their Submittal Register for approval after the design is completed and approved if the project is of the design build type. The submittal register should directly reflect the requirements of the specifications.

1.4.5 Shop Drawings

The Government will review and approve as indicated all shop drawings submitted by suppliers and vendors. At the same time the shop drawings are submitted to the Contractor, three (3) copies of the shop drawings shall be submitted to the Contracting Officer's Representative for information only or for approval as indicated in the technical specifications. If in reviewing the shop drawing for information, the Government discovers a discrepancy or problem, comments will be sent to

the Contractor. The Contractor shall send the Government his comments/response to the shop drawing.

1.4.6 Contractor Prepared As-Builts Drawings

a. General: The as-built drawings shall be a record of the construction as installed and completed by the Contractor. They shall include all the information shown on the design complete stage set of drawings and a record of all deviations, modifications, or changes from those drawings, however minor, which were incorporated in the work, all additional work not appearing on the contract drawings, and all changes which are made after final inspection of the contract work. In the event the Contractor accomplishes additional work which changes the as-built conditions of the facility after submission of the as-built drawings, the Contractor shall furnish revised and/or additional drawings as required to depict as-built conditions. The requirements for these additional drawings will be the same as for the as-built drawings included in the original submittal.

b. As-built drawings: The Contractor shall mark up the set of paper copy construction drawings to show the as-built conditions. These as-built marked reproducibles shall be kept current and available on the jobsite at all times. All changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded, as the events occur, by means of details and notes. The Contractor shall call attention to entries by drawing a "cloud" around the area or areas affected. The as-built reproducibles will be jointly inspected for accuracy and completeness by the Contracting Officer's Representative and a responsible representative of the Contractor prior to submittal of each request for payment. The Contracting Officer's Representative approval of the current status of the as-built drawings shall be a prerequisite to the Contracting Officer's Representative approval of request for progress payment and request for final payment under the contract. The drawings shall show the following information, but not be limited thereto:

i. The location and description of any utility lines or other installations of any kind or description known to exist within the construction area. The location includes dimensions to permanent features.

ii. The location and dimensions of any changes within a building or structure.

iii. Correct grade or alignment of roads, structures or utilities if any changes were made from contract plans.

iv. Correct elevations if changes were made in site grading.

v. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

vi. The topography and grades of all drainage installed or affected as a part of the project construction.

vii. All changes or modifications which result from the final

inspection.

viii. Options: Where contract drawings or specifications allow options, only the option selected for construction shall be shown on the as-built drawings.

c. Submittal of as-built drawings for review and approval: At the time of final inspection, the Contractor shall submit one copy of the as-built drawings to the Contracting Officer's Representative for his review and approval. The Contractor shall participate in a review meeting or meetings as required by the Contracting Officer's Representative, make all required changes and promptly deliver the final as-built drawings and electronic files to the Contracting Officer's Representative.

Following completion of construction and prior to acceptance, the Contractor shall provide the Contracting Officer's Representative with (5) complete as-built ½ size sets of construction drawings. Drawing files shall be furnished in Auto Cad and pdf format on a CD-ROM. Provide three (3) copies of the CD-ROM. All elements shall be incorporated into the design file with no reference files. The title block, drawing numbers and file names shall be in a format specified by the Government.

d. As-Built drawings are not required for items not listed in Section: DESIGN AFTER AWARD. However, the contractor shall mark up existing as-built drawings and provide them in PDF format indicating work completed.

1.4.7 Product Data

Contractor shall submit Manufacturers information to include EQUIPMENT DATA and MATERIAL CUT SHEETS for all materials, individual devices, and equipment to be incorporated into the construction.

1.4.8 Certificates

Contractor shall submit any required certifications.

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

1.4.9 Testing Reports

Contractor shall submit any required testing reports.

1.4.10 Operation and Maintenance Manuals

Contractor shall submit Manufacturers Operation and Maintenance info for all individual devices and equipment.

1.4.11 Training Plan

Contractor shall submit a plan for training of maintenance personnel on the operation and maintenance of the installed systems and equipment. Submittal shall include the training literature that will be used for instruction during training.

1.4.12 Final Report/Closeout Document

The Contractor will prepare a Final Report/Closeout Document. The report shall include: circuit drawings; wiring and control diagrams with data to explain detailed operation and control of each item of the equipment; a control sequence describing start-up, operation and shutdown instructions; installation instructions; maintenance instructions; safety precautions, diagrams, and illustrations; all test procedures and test results; performance data; spare parts list and Manufacturers Operation and Maintenance info for all individual devices and equipment. The report shall be submitted to the USACE for approval.

1.5 SUBMITTAL REVIEWS

The Contractor shall allow fourteen (14) days for the Government review period of all submittals. Returned incomplete submittals will not be the basis of a claim by the Contractor for additional time or money. The last two weeks of the calendar year and fiscal year shall not be considered when scheduling review times or meeting times.

If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he shall clearly outline, with ample justification, the reasons for noncompliance within five (5) days after receipt of these comments in order that the comment can be resolved. The Contractor is cautioned in that if he believes the action required by any comment exceeds the requirements of this contract, then he should take no action and notify the Contracting Officer's Representative (COR) in writing immediately.

1.6 CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS

a) The Contractor will be furnished one CD-ROM containing a reproducible copy of the advertised solicitation, including contract clauses, plans and specifications. The work shall conform to the specifications and the contract drawings listed in the technical provisions.

b) Omissions from the drawings or specifications, the mis-description of details of work which are manifestly necessary to carry out the intent of the drawings and specifications which are customarily performed shall not relieve the Contractor from performing such omitted or mis-described details of the work but they shall be performed as if fully and correctly set forth and described in the drawings and specifications.

c) The Contractor shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Contracting Officer's Representative of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Large scale drawings shall in general govern small scale drawings. The Contractor shall compare all drawings and verify the figures before

laying out the work and will be responsible for any errors which might have been avoided thereby.

d)The list of drawings and maps provided in the Index Sheet of the Plans for this solicitation are hereby incorporated by reference into these specifications. Any schedules included in the drawings are for the purpose of defining requirements other than quantities.

NOTE: Refer to the folio of drawings for the index of drawings in this solicitation.

1.7 SITE INFORMATION AND PHYSICAL DATA

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

a. Background InformationThe Center for Domestic Preparedness (CDP) is federal entity (Department of Homeland Security, Federal Emergency Management Agency), and is the designated federal training center engaged in preparing emergency first responders, emergency management officials, state and local community leaders and managers to combat terrorism including response to weapons of mass destruction and hazardous materials incidents. Training courses provided by the CDP provide specific knowledge and expertise for deterrence, prevention and response to Weapons of Mass Destruction (WMD) and hazardous materials incidents.

The CDP occupies six major areas of the former Fort McClellan, Alabama. They are:

- (1) CDP Main Complex (Building 61).
- (2) Advanced Responder Training Complex (ARTC, 500 Area).
- (3) CDP Responder Lodging Complex (900 Area).
- (4) The Chemical, Ordnance, Biological and Radiological Training Facility (COBRATF).
- (5) The Noble Training Facility (NTF).
- (6) The Warehouse/Maintenance Complex (Building 40).

b. Weather Conditions. The location is subject to atmospheric temperature ranging from minus 10 degrees to plus 105 degrees Fahrenheit as determined from the U.S. Weather Bureau station at Anniston, Alabama. The mean annual precipitation at Anniston is 52.44 inches and the mean monthly precipitation varies from a low of 2.62 inches in October to a high of 5.64 inches in March.

c. Transportation facilities. The work area is serviced by U.S. Highway No. 21. The Contractor shall make his own investigation of available roads for transportation, load limits for bridges and roads, and other road conditions affecting the transportation of materials and equipment to the sites of the work.

1.8 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

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

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

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

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

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

<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
5	5	5	4	5	5	5	4	4	4	5	5

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally schedule work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day.

d. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph 2, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the Contract Clause entitled "Default (Fixed Price Construction)".

1.9 PERSONNEL

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1.9.1 Contractor

~~Contractor shall be a licensed General Contractor (GC) in the state of Alabama.~~ The Contractor must have a minimum of five (5) years of significant supplier and installer experience in commercial applications.

AMENDMENT 0003

1.9.2 Contract Manager

The Contractor shall provide a qualified contract manager and/or superintendent who will be responsible for the performance of the work. The name of this person and an alternate(s) who shall act for the

Contractor when the manager is absent shall be designated in writing to the Contracting Officer along with their qualifications. The CO/COR will review the qualifications and determine if the appointee is acceptable. This contract manager and/or superintendent will also be responsible for conducting weekly meetings with COE and CDP officials to update all work and discuss any discrepancies encountered. The Prime contractor must have the superintendent or alternate approved by the CO/COR onsite at anytime work is being performed by the prime or a subcontractor.

1.9.3 Quality Control Manager

The contractor shall provide a quality control manager who shall not have any other duties. QC shall have an Engineering degree with a minimum of 5 years related construction QC experience or 15 years related construction QC experience. The contractor will be required to use QCS to perform contract management functions. See Section 01 45 00.00 10 for further requirements.

1.9.4 Safety Representative

The Contractor shall designate a qualified employee as a project Safety Representative. Qualified personnel trained in safety issues are defined as experienced employees, specifically designated on Contractor employee or payroll records as a Safety Representative or similar title, and possessing special qualifications and training in OSHA regulations. The qualifications of the designated safety representative will be reviewed by the CO/COR for approval prior to designation.

1.9.5 Project Management

The U.S. Army Corps of Engineers (USACE) will assign an Administrative Contracting Officer (ACO) to serve as a point of contact (POC). Contract deviations, changes, inadequacies of any kind, or any questions related to this SOW shall be immediately brought to the attention of the USACE ACO for resolution. A POC will be designated to coordinate and interface with the Contractor while at the CDP. This POC will be a representative of the USACE, Mobile District, Construction Division, and will serve as the primary POC during the construction process. The Contractor shall name and assign a responsible individual as PM. The PM shall be supported by a technical staff qualified to complete work as described in this SOW. The Contractor, including all subcontractors, shall accept written review comments and directives, only from the Contracting Officer (CO) or his designated Administrative Contracting Officer (ACO).

1.10 SAFETY REQUIREMENTS

In order to provide safety controls for protection of the life and health of employees and other persons; for prevention of damage to property, materials, supplies, and equipment; and for avoidance of work interruptions in the performance of this contract, the Contractor shall comply with all applicable Federal laws and regulations with such additional measures as the government may deem necessary. All work should be performed in accordance with the latest edition of the U.S. Army Corps of Engineers Safety Manual EM 385-1-1, Applicable provisions of Occupational Safety and Health Administration (OSHA) 29 CFR, Environmental Protection Agency (EPA), and the State of Alabama regulations will be applied to all work under this contract.

The Contractor(s) performing work at the CDP are required to show proof in

the form of written documentation on required training specific to the work they may be required to perform on the project.

The Contractor shall ensure all tools, equipment, and machinery are in good working order. These items may be inspected by the COR or CDP Safety Officer when the Contractor reports to the job site and at any subsequent time deemed appropriate by the COR. Safety Data Sheets (SDS) for products containing hazardous chemicals will be reviewed by the government before they are used on the project. Contractors shall provide this information during the pre-construction meeting.

Contractors are required to provide their personnel with the Personal Protective Equipment (PPE) necessary to complete the project.

If at any time during the life of the Contract the government determines that continued unsafe work practices occur, the Administrative Contracting Officer may direct the Contractor to revise and/or supplement the present organization structure with additional qualified personnel trained in safety issues at no additional cost to the government or time extensions to the Contract.

Fire Prevention and Protection. A written hot work permit shall be obtained daily from the installation for use of any heat producing devices such as blowtorches, portable furnaces, tar kettles, or gas and electric welding and cutting equipment. The Contractor shall be liable for any fire loss to Government property attributable to negligence on the part of the Contractor, including failure to comply with fire prevention measures prescribed by the terms of this contract.

The Administrative Contracting Officer will notify the Contractor of any non-compliance with the foregoing requirements. The Contractor shall, after being notified, immediately take corrective action. If the Contractor fails, or refuses, to comply promptly, the Contracting Officer may stop all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such Stop Work Orders shall be legal grounds for an extension of time or for additional cost or damages incurred by the Contractor.

The Contractor shall include the provisions of this section (1.10 SAFETY REQUIREMENTS) in all subcontracts and purchase orders. However, such requirement in the Contractor's lower-tier subcontracts or purchase orders shall not relieve the Contractor of its obligation to assure compliance with the requirements of this clause for all aspects of the work whether performed by the Contractor or its lower-tier subcontractors.

1.10.1 Training

The contractors performing work at the CDP are required to show proof in the form of written documentation on required training specific to the work they may be required to perform on the project.

All Contractors and subcontractors performing work at the COBRATF will be required to attend site specific safety awareness training. This training will be provided at no cost and will take approximately one hour to complete.

All contractors and subcontractors performing work at the COBRATF will be required to attend site specific safety awareness training. This training will be provided at no cost and will take approximately 1 hour to complete.

1.10.2 MSDS Sheets

Material Safety Data Sheets for products containing hazardous chemicals will be reviewed by the government before they are used on the project. MSDS sheets shall be kept with or in the line of sight of all products that may be deemed as hazardous.

1.10.3 Personal Protective Equipment (PPE)

Contractors shall provide their personnel with the Personal Protective Equipment (PPE) necessary to complete the project. Sturdy, over-the-ankle boots, hard hats, safety vests, and safety glasses with solid side shields must be worn in all construction areas.

1.11 ASBESTOS MATERIAL AND LEAD BASED PAINT

Some buildings at the CDP have been tested for Asbestos and some buildings at the CDP do contain asbestos. If asbestos is known or may possibly be in the direct working environment additional documentation will be provided.

Some buildings at the CDP have been tested for Lead Based Paint and some buildings at the CDP do contain Lead Based Paint. If Lead Based Paint is known or may possibly be in the direct working environment additional documentation will be provided.

If the Contractor in the course of his work encounters suspected asbestos containing material that has not been addressed by the CDP, the COR and CDP Safety Officer must be notified immediately.

1.12 HOURS OF OPERATION

The contractor normally accomplishes all contract work between the hours of 7:30 a.m. and 4:30 p.m. (CST), Monday through Friday, excluding Federal holidays.

Federal Holidays. Federal holidays may cause the CDP to be closed. The contract performance period has taken this possibility into consideration.

The Contracting Officer reserves the right to modify this work schedule for the Contractor's operations within reasonable parameters on an exception basis to accommodate other site schedules.

Work on weekends, holidays, and outside normal working hours listed above may be allowed if necessary to comply with the required completion schedule. The contractor shall request a work schedule variance from the COR at least two working days in advance of requested variance. This variance will include in detail the work that will be performed, the estimated duration of the variance, and the number of contractor personnel involved.

1.13 GOVERNMENT FURNISHED PROPERTY AND SERVICES

No Government Furnished Equipment (GFE) will be available for this effort.

1.14 SERVICES

The contractor and the COR shall agree on temporary storage areas in the general location of the project. Request for proposed storage area shall

be submitted with the proposal documents. The contractor shall be responsible for the safety, security and maintenance associated with storage areas. Storage areas shall be kept clean and in a neat and organized appearance at all times. If the storage area is not maintained, the Contracting Officer may direct the contractor to store materials off the installation.

The Contractor may utilize existing building electrical service to power any equipment needed during construction.

Emergency medical services for Contractor personnel are the responsibility of the Contractor. However, when available, CDP emergency medical personnel will stabilize any injured Contractor personnel until local emergency response services arrive on site. No other emergency services shall be provided by the Government.

AMENDMENT 0003

1.15 ADDITIONAL REQUIREMENTS

Appropriate measures shall be taken to minimize damage to surrounding grounds, structures, infrastructure, and shrubbery during all work requirements and processes. Contractor shall repair any CDP property damaged due to construction activities or contractor personnel, to include surrounding grounds, structures, infrastructure and shrubbery. Grounds shall be raked and smoothed free of debris to match adjoining ground level, and grass areas shall be re-sown with grass seed and appropriate straw or replaced with sod in areas of a sod grass. Damaged shrubbery shall be properly restored or replaced, damaged structures and infrastructure shall be repaired to original appearance and function unless otherwise indicated in section 6.2.1 "Specific Tasks". Contractor shall immediately report all damage to CDP property, caused by the contractor, to the COR.

Temporary Office/Storage Trailers & Laydown. Small areas of office space for contractors can sometimes be provided in mechanical rooms or other non-vacant areas. Available space is very limited. If the contractor wants to set up temporary office/storage trailers, the locations must be approved by DHS. No temporary utilities will be provided for the trailers; the contractor will have to obtain any temporary utilities for trailers. DHS typically does not allow temporary water lines or bladder type septic tanks on their property. DHS shall approve any temporary water lines or bladder type septic tanks on a case by case basis. Construction fencing is required for laydown areas. The contractor shall keep any turf within their laydown area mowed during the growing season. Any damage to turf, trees, shrubs, etc. shall be repaired/restored/replaced to existing condition or better. New turf (seeded or sod) shall be bermuda and shall be maintained by the contractor until fully established.

Where specific dimensions, details or design intent cannot be determined, consult with the government representative, via Request for Information (RFI) before proceeding with the work.

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto surfaces shall be removed. Materials resulting from demolition activities which are salvageable shall be stored within the supplemental storage area. Stored material not in trailers, whether new or

salvaged, must be neatly stacked when stored. The premises shall be left broom clean. Stains, foreign substances, and temporary labels shall be removed from surfaces. Carpet and soft surfaces shall be vacuumed.

Equipment and fixtures shall be cleaned to a sanitary condition. Operating equipment filters shall be cleaned. The site shall have waste, surplus materials, and rubbish removed. The project area shall have temporary structures, barricades, project signs, and construction facilities removed.

The contractor is responsible for removal and proper storage of all existing and equipment that is to be re-used after the renovation. The contractor shall also be responsible for cleaning and reinstallation after completion of the project. The contractor shall document the condition of the furniture and equipment prior to removal. This documentation shall be provided to the government prior to removal with any deficiencies clearly noted. The contractor is responsible for final cleanup of all work included in the project.

DHS CDP has no onsite borrow pits or spoil sites. All debris must be hauled off site and properly disposed of by the contractor according to its classification. Landfills may require disposal of soils from Fort McClellan to be tested for contamination prior to disposal. Toxicity Characteristic Leaching Procedure (TCLP) metals or other testing may be required. The contractor shall verify the current testing requirements for the chosen disposal facility and provide the required testing as part of this contract.

Designer should note in plans.

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1.16 OCCUPANCY

Occupancy: Building occupancy status shall be noted in section 01 11 00 of this RFP. If occupied, the contractor shall schedule and perform work under this contract in such a manner as to allow the occupants of the building to continue their normal activities with the least amount of interference. The contractor may at times be required to coordinate with other contractors on the CDP campus.

1.17 WARRANTY REQUIREMENTS

In addition to the one-year warranty of construction (referred to in 52.246-21), the contractor shall obtain all warranties that would normally be given in commercial practice and, upon final acceptance of the work (or before), provide a list to the Government of each warranted equipment item, feature of construction, or system. The list shall indicate the following:

- a. Name of item.
- b. Model and Serial Number.
- c. Installed location.
- d. Name and phone numbers of manufacturers or suppliers.
- e. Names, addresses, and phone numbers of sources of spare parts.
- f. Warranties and terms of warranty. Items with warranties extending beyond the one-year warranty shall be indicated with separate warranty expiration dates.
- g. Start date and duration of warranty period.
- h. Summary of maintenance procedures required to continue the

warranty in force with cross-reference to specific pertinent operation and maintenance manuals as applicable.

The Contractor shall provide all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc., for CDP review and possible incorporation. The contractor shall register all warranties in the name of the Center for Domestic Preparedness (CDP).

These documents shall be submitted with material submittals prior to CDP approval for construction. Warranty documents shall be assembled in a binder and submit to the COR for review and approval. Binder shall have a table of contents, be legible and neatly tabbed.

1.18 Contractor Response to Warranty Items:

Following written notification by the Government of a failure, defect, or damage, the Contractor shall respond to warranty service requirements in accordance with the categories of priority listed below:

1. Priority 1 - Perform onsite evaluation of situation and determine course of action within 4 hours of notification, initiate work within 6 hours and work continuously to completion or relief. This category includes installed systems that affect:
 - a. Security, fire, or safety problems.
 - b. Electrical power failures of entire areas or buildings; or any area power failure affecting heating or cooling.
 - c. Roof leaks: Temporary repairs shall be made where major damage to property is occurring or is expected to occur, until a permanent repair can be completed.
2. Priority 2 - Perform onsite evaluation and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief. This category includes installed systems and equipment affect:
 - a. Kitchen operations and all other equipment, which would hamper the preparation of meals.
 - b. Roof leaks where major damage to property is not occurring or expected to occur.
 - c. No water to facility or unit.
 - d. No hot water in portion of building.
3. Priority 3 - All other work to be initiated within 3 workdays and work continuously to completion or relief. This category includes:
All others not listed above.

The Contractor at approximately six (6) months after final acceptance, shall conduct warrantee inspections. The inspections shall be scheduled by the Contractor, with the COR prior to final invoice being paid. Inspection shall be conducted with the Contractor and any required subcontractor personnel in attendance, along with the COR and any necessary CDP personnel in attendance. The Contractor shall develop and submit a checklist for these inspections along with schedule. A list of deficiencies existing at the time shall be compiled and submitted to the COR for review and then corrected by the Contractor within the agreed upon time frame.

The deficiencies and corrective actions shall be documented in the

warranty deficiency log. The contractor's warranty with respect to work repaired or replaced under the above warranty service requirements shall run for one (1) year from the date of repair or replacement.

1.19 UTILITIES

If work involves digging in or around utilities the contractor shall obtain a dig permit from the installation prior to any excavating of govt. property. The dig permit must be signed and approved prior to any digging on DHS property.

If work involves digging in or around utilities the contractor will be responsible for locating commercial utility service lines by contacting the commercial locator service (Alabama One Call), and/or the required utility companies designated locating personnel.

CDP will provide all available drawings of privately owned utilities for use by the contractor in locating existing utilities. It shall be the contractor's responsibility to verify the location of all privately owned existing utilities at the contractor's expense. The contractor shall contact the COR if existing utility locations remain questionable. As with all former military bases documentation of existing utilities dating back many decades is questionable and the contractor should use caution during any excavation. Dig permits will not be approved until all utilities in the area have been located by the contractor.

Damaged Utilities. Contractor shall repair/replace any utility that is damaged by the Contractor's operations. All repairs shall be performed within 24 hours from the time of breakage unless otherwise directed by the COR. Notify the Administrative Contracting Officer or his/her Representative immediately of breakage. Repair materials shall be approved by the COR.

The Contractor will request, as far in advance as possible, with a minimum of 72 hours, the disruption of any function of the facilities. This includes, but is not limited to, any shut-down, relocation, rerouting, etc. of any utilities, services, roads, facilities, personnel, etc. The Contractor shall not proceed with any disruption without the consent of the Contracting Officer or his/her Representative. When given approval for a disruption, the Contractor will accomplish the work during the period agreed upon. The Contractor will be required to notify the Contracting Officer/COR a minimum of 72 hours prior to any disruption and as soon as the work is completed and normal functions are restored.

Temporary Electrical Service. All temporary electrical service on the project, and within all temporary and permanent structures shall be installed and maintained in compliance with the provisions of EM 385-1-1, latest edition, Corps of Engineers Safety and Health Requirements, and APPENDIX T of Mobile District Regulation 385-1-1, Electrical Service Requirements for Construction and Maintenance Operations. Copies of these publications are available for inspection in the District Office by Prospective bidders, and will be furnished to the successful bidder upon request.

Where available, onsite utilities will be provided at no cost to the contractor. These utilities shall be used only in the performance and support of the project. Any temporary connection to the utility system shall be coordinated with the COR prior to hook-up. The contractor shall complete the temporary connection and all temporary electrical work in

accordance with applicable codes and standards. Temporary electrical wiring and devices shall comply with the current National Electrical Code. Temporary wiring and devices shall be removed at project completion. All temporary electrical work shall be at the contractor's expense.

1.20 APPLICABLE CODES, RULES, PUBLICATIONS, & REGULATIONS

All work, including Design or Construction, shall be in compliance with applicable requirements of federal and state laws, codes, rules, regulations, ordinances, and standards including, but not limited to the latest edition of those outlined below and the accepted industry practices.

- a. Federal Security Level (FSL) Standards
- b. International Building Code (IBC)
- c. Uniform Federal Accessibility Standards (UFAS)
- d. Americans with Disability Act
- e. Occupational Safety and Health Administration (OSHA)
- f. International Fire Code
- g. National Fire Protection Association (NFPA)
- h. National Electric Code (NEC)
- i. Life Safety Code
- j. National Energy Code
- k. Federal Leadership in High Performance and Sustainable Buildings
- l. Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas
- m. American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) standards
- n. US Environmental Protection Agency (EPA) and Alabama Department of Environmental Management (ADEM)

1.21 START-UP, COMMISSIONING, AND TRAINING

The purpose of commissioning documentation is to record the standards of performance for building systems and to verify that what is designed and constructed meets those standards. At a minimum, the Contractor shall accomplish the following for applicable items:

- a. Field verification inspection and testing of commissioned systems, assemblies, and features are to be performed as each phase is completed. Verify that the systems operate in accordance with the design intent.
- b. Retest specific systems and/or system components once the deficiencies discovered during the first test are resolved.
- c. During functional performance testing and operator training, the team verifies the performance of building systems and determines the most efficient equipment settings.
- d. Testing should examine systems as a whole in order to evaluate overall design and compatibility.
- e. The Contractor will also supervise operations staff training on commissioned systems and equipment, and organize warranty information.
- f. Ultimately, the team will prepare documentation on systems, including benchmarks for energy use and equipment efficiencies, seasonal operational issues, start-up and shutdown procedures.
- g. Test data reports shall contain results of the testing and inspection plans and includes Pre-Functional Test (PFT) reports, Functional Test Reports (FTR), and other test results specified for the commissioned systems.
- h. Due to weather conditions, not all systems can be tested at or near full load during the construction phase. Provide for off-season testing to

allow testing, balancing, and optimization of integrated systems under the best conditions.

i. Upon completion of the equipment and systems installation and connections, the Contractor's QCM shall assemble all major equipment factory representatives and subcontractors together for system start-up and Owner instructional period. These individuals shall assist in start-up and check out of their systems and shall remain at the site until the systems operation is acceptable and understood to the Owner's maintenance and/or operation personnel.

j. The Contractor shall prepare a statement and check list to be included in the Operation and Maintenance Manual. This Statement shall read as follows: 1. "The Contractor, associated factory representatives and subcontractors, have started each system and the total system and have proved their normal operation to the Owner and have instructed him in the operation and maintenance thereof."

Upon successful start-up and testing, instruct the Owner's representative(s) in operation and maintenance of mechanical systems utilizing the Operation and Maintenance Manual. Individuals present shall include Contractor's QCM, subcontractors and equipment factory representatives. These individuals shall assist in instruction and start-up. The instruction period shall occur prior to substantial completion when systems are properly working.

1.22 TRAFFIC CONTROL

a. Unless otherwise directed, the Contractor shall keep the existing roads and parking lots open to all traffic while performing the required work. The Contractor shall keep the portion of the project being used by traffic in such condition that traffic will be adequately accommodated. Construction work that requires disruption of traffic will be accomplished during other than normal duty hours as directed and approved by the Contracting Officer.

b. The Contractor shall furnish, erect and maintain barricades, cones, warning signs, delineators, and flag persons in accordance with Section "G" of the "Alabama Manual on Uniform Traffic Control Devices for Streets and Highways".

c. Flag persons shall wear either an approved uniform or vest of fluorescent orange color and an orange hard hat and be equipped with a red flap of fluorescent material or a reflective stop/slow paddle.

d. The above traffic control devices shall be supplemented as necessary with warning lights of the kind and type specified by the Contracting Officer's representative.

1.23 ROAD CLOSURES

Planned road closures shall be detailed and coordinated by the Contractor. Requests for road closures shall be submitted in writing by the Contractor to the Contracting Officer's Representative at least 10 (ten) working days before the planned closure. When it becomes necessary to close roads for construction, the contractor shall immediately put in place the necessary signs and barricades required. The signs and barricades used shall conform with the National Transportation Safety Board (NTSB) standards. These include but are not limited to begin/end construction signs,

standard traffic control signs including clearly marked detours and barricades with yellow flashing caution lights. Hand painted plywood signs (or other materials) are not allowed or acceptable. Upon completion of road work, all signs and barricades shall be immediately removed and all normal traffic control devices and signs returned to their original condition. Signs and barricades shall not be left along sides of roadways.

1.24 PROJECT SIGN

The Contractor shall furnish and install a project sign and a safety performance sign at the location designated by the Contracting Officer within 30 days after notice to proceed. The signs shall be constructed as indicated on the figures bound herein. Size, lettering, color, and paint shall conform to the details shown in Figure 5B "Construction Sign," Figure 5C "Fabrication and Mounting Guidelines," and Figure 5D "Safety Performance Sign," bound herein. All parts of frames and signs shall be given a primer coat of oil paint and a minimum of two finish coats of white semi-gloss paint. The Contractor shall maintain the signs in a "like new" condition throughout the life of the project, repainting and replacing members as necessary to accomplish this requirement. No direct payment will be made for the signs nor maintenance of the signs.

1.25 HAZARD ANALYSIS

A hazard analysis plan, as described in Section 1, Article 01.A.05 of the Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, latest edition, shall be submitted to the Contracting Officer's Representative for approval for the basic contract and for the basic Contract and for each Task Order.

1.26 CERTIFICATES OF COMPLIANCE

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

1.27 EQUIPMENT DATA

(a) Major Equipment. The Contractor shall be required to make a list of all installed equipment furnished under this contract. This list shall include but not be limited to each piece of equipment which has a serial number. This list shall include all information usually listed on manufacturer's name plate, so as to positively identify the piece of property. This list shall also include the cost of each piece of installed property (less installation costs) F.O.B. construction site. The above referenced list shall be furnished as soon as possible after equipment is purchased. The list shall be furnished as one (1) reproducible and three (3) copies and shall be furnished to Contracting Officer not later than thirty calendar days prior to completion of any segment of the contract work which has an incremental completion date.

Listing will be on Government furnished MOB Form 897, available from the Contracting Officer.

(b) Other Equipment. The Contractor will be required to furnish a brochure, catalog cut, parts list, manufacturer's data sheet or other publication (including the manufacturer's name and address) which will show detailed parts data on all other equipment, such as hardware, plumbing and lighting fixtures, etc., subject to repair and maintenance procedures. The data shall be furnished in four (4) copies to the Contracting Officer not later than thirty calendar days prior to completion of any segment of the contract work which has an incremental completion date.

1.28 LAYOUT OF WORK

The Contractor shall lay out its work from Government established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

1.29 CONTRACTOR MAINTENANCE

At the end of each working day the Contractor shall police the work area and the area immediately surrounding the work area of all work-related debris. The Contractor shall comply with all applicable safety requirements and shall conduct his operations in a manner to insure an accident-free environment. Contractor shall keep all grassed areas within his work area in a neatly trimmed state during the growing season. Stacked materials shall not be within 25 feet of an active roadway.

1.30 TEMPORARY ELECTRICAL SERVICE

All temporary electrical service on the project, and within all temporary and permanent structures shall be installed and maintained in compliance with the provisions of EM 385-1-1, latest edition, Corps of Engineers Safety and Health Requirements, and APPENDIX T of Mobile District Regulation 385-1-1, Electrical Service Requirements for Construction and Maintenance Operations. Copies of these publications are available for inspection in the District Office by Prospective bidders, and will be furnished to the successful bidder.

1.31 RATES OF WAGES

Wage rates shall be implemented as set forth by the Davis Bacon Act. Wage Rates. Wage rates are included at the end of this section.

1.32 CONTRACTOR SUPPLY AND USE OF ELECTRONIC SOFTWARE FOR PROCESSING
DAVIS-BACON ACT CERTIFIED PAYROLLS

- a. The contractor will use a commercially available electronic system to process and submit certified payrolls electronically to the Government. The Davis-Bacon Act establishes the requirements for preparing, processing, and providing certified labor payrolls.
- b. The contractor shall be responsible for obtaining and providing access for all licenses and other services required to provide for receipt, processing, certifying, electronically transmitting to the Government, and storing weekly payrolls and other data required for the contractor to comply with Davis-Bacon Act and related statutes. When the contractor uses an electronic Davis-Bacon Act payroll service, it shall be used to prepare, process, and maintain the relevant payrolls and basic records for all work under the construction contract. The electronic payroll service shall be capable of preserving the payroll and related basic records for the required three years after contract completion. The contractor shall obtain and provide electronic system access including electronic review to the Government, as required to comply with the Davis-Bacon Act and related statutes through the duration of the construction contract.
- c. The contractor's provision and use of an electronic payroll processing system shall meet the following basic functional criteria:
 1. commercially available;
 2. compliant with appropriate Davis-Bacon Act payroll provisions in the FAR;
 3. able to accommodate the required number of employees and subcontractors that will be employed under the contract;
 4. capable of producing an Excel spreadsheet-compatible electronic output of weekly payroll records for export into an Excel spreadsheet to be imported into the contractor's mode of Resident Management System 3.0;
 5. demonstrated security of data and data entry rights;
 6. able to produce contractor-certified electronic versions of weekly payroll data;
 7. able to identify erroneous entries and track the date/time of all versions of the certified Davis-Bacon Act payrolls submitted to the government over the life of the contract;
 8. capable of generating a durable record copy in a Compact Disc (CD) or Digital Versatile Disc (DVD) and Portable Document Format (PDF) file record of data from the system database at the end of the contract closeout. This durable record copy of data from the electronic payroll processing system shall be provided to the Government during contract closeout.
- d. All contractor-incurred costs related to the contractor's provision and use of an electronic payroll processing service shall be included in the contractor's price for the overall work under the contract. The costs for Davis-Bacon Act compliance using electronic payroll processing services shall not be a separately bid or reimbursed item under this contract.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

NOTE

The information included in Section 01 10 10 is provided solely as a basis for design. None of the items included in this section are to be considered a Brand Name requirement(s) and/or Brand Name or Equal requirement(s).

SECTION 01 10 10
DESIGN REQUIREMENTS

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PART 1 DESCRIPTION OF FACILITY

1.1 GENERAL

The Contractor shall design and construct the "DHS COBRA Incinerator Disposal and Facility Reutilization, DHS Center for Domestic Preparedness, Anniston, AL" to result in complete and useable facilities including all site work and utilities. Refer to Bid Schedule and Explanation of Bid Items. All work will be designed and constructed in conformance with the RFP Documents.

1.2 BUILDING SCOPE - GENERAL DESCRIPTION

All construction personnel are required to be U.S. Citizens to perform on the project.

The scope generally includes renovation and repair of 801D (Incinerator Building at DHS Center for Domestic Preparedness, Anniston, AL).

Building 801D was constructed in 1983 as an incinerator facility. The current total area of the facility is approximately 7,042 square feet. The scope of work generally includes the removal and disposal of inoperable incinerator equipment and repurposing the structure as a ventilated indoor training facility using renewable solar energy systems to improve facility operational resilience and reduce environmental impact. Specific additional work includes the purchase and installation of training equipment props, removal of a caustic liquid storage tank and associated piping, site improvements to accommodate an Energy Storage System (ESS), and construction of free standing canopy structures (Bid Options).

1.3 SUSTAINABLE DESIGN

The Contractor shall document sustainability goals in narrative form. The square footage of the building is less than 10,000 square feet and will not require tracking and reporting using an HPSB Checklist. Additionally, Third Party Certification is not required.

PART 2 GENERAL CRITERIA AND REQUIREMENTS

2.1 DESIGN CRITERIA AND BASE STANDARDS

Design criteria is contained within this Request for Proposal including this Specification Section 01 10 10 with additional project requirements provided in the drawings and the Appendices. This data is intended to guide the completion of the design by establishing the desired character, appearance, function, and other requirements of the construction. The following Appendices are included and shall be used in completing the design of the project.

APPENDICES:

- APPENDIX A HAZARDOUS MATERIAL SURVEY REPORT
- APPENDIX B HYDRANT FLOW TEST REPORT
- APPENDIX C RFP DRAWINGS
- APPENDIX D EXISTING CONDITIONS DRAWINGS

In addition to the Appendices, the following criteria apply and are included by reference:

- a. Mobile District Design Manual, current version. Except as noted otherwise, this project shall be designed in accordance with the applicable references and publications listed in the Design Manual. It is the responsibility of the A/E for this project to determine what information is required from the Design Manual, extract it from the Design Manual and place it in the RFP. The Design Manual may be found on the Internet at:
<https://www.sam.usace.army.mil/Portals/46/docs/military/engineering/Design%20Manual/Mobile%20District%20Design%20Manual%202024.pdf>
- b. FAR Case No. 92-54 requires the Solicitation Package for all construction projects to reflect the government's preference for "acquisition of environmentally sound and energy efficient products and services, and an affirmative procurement program favoring items containing the maximum practicable content of recovered materials".
- c. Architectural Barriers Act (ABA) Standards; The ABA may be found at <https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-aba-standards/aba-standards>
- d. Federal Green Construction Guide for specifiers. This guide can be found at: <http://www.wbdg.org/design/greenspec.php>
- e. USACE Engineering Manual EM-385-1-1

2.2 UNIFIED FACILITIES CRITERIA (UFC)

As the site and facilities in the project scope are part of Department of Homeland Security, DoD requirements and UFC requirements do not apply to site and building design and construction.

2.3 LIFE SAFETY

The D/B Contractor (DBC) will provide designs and construction in compliance with the Design Criteria presented herein. The DBC will fully develop Life Safety plans and analysis for each facility noting compliance with regulations and codes.

2.4 APPLICABLE BUILDING CODES AND STANDARDS

The following codes and standards shall be used for building construction and design. Where there is a conflict between the RFP and building codes, notify the COR immediately. When codes are in conflict, the most stringent shall apply. This list is not intended to be a complete list. All work shall be designed and constructed to meet all applicable state and federal codes, standards and laws. Refer to the technical specifications for other standards and references not listed below.

40 CFR 68	Title 40 Code of Federal Regulations, Chemical Accident Prevention Provisions
40 CFR 152-186	Title 40 Code of Federal Regulations, Pesticide Programs
40 CFR 260	Title 40 Code of Federal Regulations, Hazardous Waste Management Systems; General
40 CFR 261	Title 40 Code of Federal Regulations, Identification and Listing of Hazardous Waste
40 CFR 262	Title 40 Code of Federal Regulations, Standards Applicable to Generators of Hazardous Waste
40 CFR 279	Title 40 Code of Federal Regulations, Standards for the Management of Used Oil
40 CFR 302	Title 40 Code of Federal Regulations, Designation, Reportable Quantities, and Notification
40 CFR 355	Title 40 Code of Federal Regulations, Emergency Management Planning and Notification
49 CFR 171-178	Title 49 Code of Federal Regulations, Hazardous Materials Regulations
ABAS	Architectural Barriers Act Standards
ACI 318	American Concrete Institute, Building Code Requirements for Structural Concrete and Commentary
ACI 350-06	American Concrete Institute, Code Requirements for Environmental Engineering Concrete Structure
AISC SCM	American Institute of Steel Construction, Steel Construction Manual, 15 th Edition
AISI CFSDM	American Iron and Steel Institute, Cold-Formed Steel Design Manual
ANSI	American National Standards Institute Standards current editions
ASCE 7	American Society of Civil Engineers, Minimum Design Loads for Buildings and other Structures, latest edition
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASHREA 62.1	Ventilation of Acceptable Indoor Air Quality
AWS D1.1	American Welding Society, Structural Welding Code-Steel
IBC	International Building Code, 2021
IEBC	International Existing Building Code, 2021
IES	Illuminating Engineering Society Lighting Handbook
IMC	International Mechanical Code, 2021
IPC	International Plumbing Code, 2021
NEMA	National Electrical Manufacturer's Association
NESC	National Electrical Safety Code current edition
NFPA 70	National Electrical Code (NEC), current edition

NFPA 90A	National Fire Protection Association Standard for the Installation of Heating and Air Conditioning Systems
NFPA 101	Life Safety Code
NFPA 241	National Fire Protection Association Standard for Aircraft Interior Fire Protection Systems
NFPA 780	National Fire Protection Association Standard for Installation Lightning Protection Systems
SMACNA	Guides Sheet Metal & Air Conditioning Contractors' National Association
UFAS	Uniform Federal Accessibility Standards current edition
UL	Underwriter's Laboratories

2.5 CONFLICTS IN RFP CRITERIA

In the event of conflict or inconsistency between any of the criteria below, precedence shall be given in the following descending order:

- (1) Public Law
- (2) Building Codes and Life Safety Codes
- (3) RFP Requirements

PART 3 PROJECT REQUIREMENTS

3.1 GENERAL

The D/B Contractor (DBC) shall prepare complete construction documents for all work to be constructed. The construction documents to be prepared include, but are not limited to construction drawings, specifications, submittals, and a design analysis with calculations, in conformance with this Request for Proposal and as required in Section 01 10 12 DESIGN AFTER AWARD. Materials and equipment shall be limited to those specified except that where no specific material and equipment is specified or no basis of design is identified, the Contractor shall use materials and equipment as identified in the standard unedited Unified Facilities Guide Specifications (UFGS). If specific materials are not identified in the UFGS then the Contractor will use materials accepted within the construction industry and in compliance with Design Criteria.

3.2 DESIGN

The project shall be designed in accordance with the RFP. The design of the renovation and the materials selected shall be high quality, durable and easily maintained. The Contractor shall be responsible for the professional quality, code compliance, technical accuracy, and coordination of all designs, drawings, specifications, and other documents or publications upon which the design and construction are based.

New exterior materials shall be compatible with those existing at the DHS Center for Domestic Preparedness. Final selection of exterior and interior materials, finishes, and colors shall be submitted for Government approval as prescribed in Section 01 10 12 DESIGN AFTER AWARD.

3.2.1 Life Safety

The DBC's Designer of Record (DOR) is responsible for conducting a complete analysis of the design using life safety and building codes, and other requirements referenced in this RFP in order to provide a fully code and regulation compliant final design. The DBC's DOR shall be solely responsible for interpreting the applicable requirements and providing a code compliant final design approach. None of the documentation included in this RFP alters the DBC's DOR responsibilities and liabilities. The design-build contractor's Qualified Fire Protection Engineer (QFPE) shall review all interior finishes (ceiling, wall, and floor finishes) for compliance with the fire performance classifications of NFPA 101.

In addition to the construction indicated in this RFP, additional smoke/fire rated construction may be required depending on the final design approach proposed by the DOR. Material changes to the design require Government approval prior to acceptance and inclusion into the design.

It is the intent of the RFP to allow the DBC optional approaches to achieving conformance with the requirements of the various life safety related codes and regulations. By submission of an offer to the Government, the DBC acknowledges compliance with the conditions above and that all costs associated with compliance are reflected in the offered proposal.

AMENDMENT 0003

3.2.2 Design Occupant Load

The renovated facility will be used as a training facility. When training occurs, sessions will be a full day for 2 to 3 days a week with 5 to 12 people per training session. The facility may be vacant for 2 to 3 weeks at a time.

3.2.3 Commissioning

Commissioning will only be for the PV array system. The Contractor's DOR is responsible for editing Section 01 91 00.15 BUILDING COMMISSIONING with requirements for PV array system commissioning. Tailor for non-building systems. The PV array system to be commissioned will include the PV solar arrays, mounting systems, inverters, micro-grid control panels, battery storage system (ESS), charge controllers, and all required electrical safety equipment per NFPA 70.

AMENDMENT 0003

3.3 SPECIFICATIONS

3.3.1 Section 01 10 10 DESIGN REQUIREMENTS

This specification Section 01 10 10 DESIGN REQUIREMENTS defines the design and performance criteria to be used for developing the project design and construction documents. The building codes and standards noted shall be used as the minimum criteria to develop the construction documents. Further, this Specification Section 01 10 10 describes the requirements for appearance, function, materials, and types of construction in sufficient detail to enable engineering and design to be completed by the Contractor. In this specification section, each discipline describes design intent and outlines the parameters to which the Contractor shall design. When a material or procedure is noted within the 01 10 10, the D/B Contractor will follow that direction unless prior approval from the Government is obtained.

3.3.2 Technical Specifications

Technical specification Section 26 31 00 FACILITY-SCALE SOLAR PHOTOVOLTAIC (PV) SYSTEMS is provided with this RFP. All other technical specifications have not been provided. The D/B Contractor's Designer of Record shall develop construction document technical specifications for all areas of work using the UFGS system in accordance with the Mobile District Design Manual and in conformance with the RFP. When references are made in this RFP to specification sections not included in this RFP, it will be the responsibility of the Contractor's DOR to provide these sections.

Unless otherwise noted or required in this Request for Proposal, materials and methods allowed by the unedited UFGS specifications will be allowed to be incorporated into the project when in compliance with other listed criteria. The DBC shall not materially revise the specifications such that the specification does not reflect the intent of the unedited specification without prior approval from the Government. The DBC will edit the specifications for completeness and project applicability. The specification will be edited to remove all materials that will not be used such that the edited specification

reflects only those products intended to be used on the project. This editing process must be completed prior to first submission of the specification. Unless a more stringent warranty is identified in the RFP include warranties as described in the UFGS Specification. Do not reduce warranty requirements recommended in the guide specification. If no UFGS Specification exists for a component to be incorporated into the design the Contractor will develop a product specific specification using the UFGS format to describe in detail the item to be incorporated into the design. All custom specifications will be developed in the coded format of the UFGS standard system, including Parts 1, 2 and 3.

All specifications will be submitted per Section 01 10 12 DESIGN AFTER AWARD. The current version of the UFGS at the time of award will be used.

Anticipated specifications to be required as part of the facility design are indicated in various Parts of this Section 01 10 10. Additional specifications sections may be required.

3.4 SECTION 01 10 12 DESIGN AFTER AWARD

Specification Section 01 10 12 DESIGN AFTER AWARD defines the format and submittal requirements the Contractor will follow for submission of the design and the construction documents.

3.5 COORDINATION BETWEEN THE VARIOUS DISCIPLINES

The DBC and their DOR shall be responsible for the coordination between disciplines in order to fulfill the requirements of this contract and to provide for a complete, integrated, and functional design.

3.6 QUALITY OF WORK

Construction documents shall be of sufficient detail to afford a clear understanding of the construction work required. The work shall be organized in a manner that will assure thorough coordination between the various details on the drawings and the specifications. The Contractor shall crosscheck all work until all conflicts have been reconciled. The US Army Corps of Engineers, Mobile District Design Manual, 2024 edition, available on the Internet at <https://www.sam.usace.army.mil/Portals/46/docs/military/engineering/Design%20Manual/mobile%20District%20Design%20Manual%202024.pdf> shall be used as the basis for format and preparation of construction documents. The Government may reject incomplete or uncoordinated submittals.

3.7 RFP DESIGN AND TECHNICAL CRITERIA

All designs and construction document drawings and specifications shall be prepared to comply with the RFP. Unless otherwise specifically noted, the RFP describes the design work that shall not be changed without Government approval and shall be included in the construction documents. All remaining design work shall be performed by the Contractor based on the design criteria identified in the RFP. No deviations from the criteria will be allowed unless prior approval is obtained from the Contracting Officer's Representative. All questions or problems encountered by the Contractor shall be promptly submitted with recommendations for resolution to the Contracting Officer's Representative for

approval. Contents of this RFP shall not be construed as limiting in any way the responsibilities of the DOR to comply with all code requirements.

3.8 FUNCTIONAL REQUIREMENTS

The functional requirements of the project are indicated in the drawings, appendices, this RFP, and further explained in the Functional Area / Room Summary sheets included in PART 7 and Appendices. Unless otherwise noted, the floor plan included has been approved by the Government and should not be changed without prior discussion with and approval by the Government. Deviations to the orientation, square footage areas, and/or functional adjacencies must be submitted for approval.

3.9 BID OPTIONS REQUIREMENTS

This DB RFP requires several Bid Options to be priced separately in the Bid Schedule. The Government, at its discretion, may award any of the Bid Options. The Bid Options are described as follows:

Bid Option 1: Expand battery storage capacity by adding a second battery system within the covered slab area

Bid Option 2: Canopy addition with solar panels at Incinerator Building 801D

Bid Option 3: Solar panel installation on O&M Building 801E.

Bid Option 4: Canopy structures with solar panels at parking lot perimeter.

Bid Option 5: Canopy structures with solar panels at central portion of parking lot.

3.10 DESIGN UNITS

The design shall be developed using English units.

PART 4 PERMIT REQUIREMENTS

4.1 PERMITS

No stormwater permit will be required from the City of Anniston since the installation is not included in their MS4. The anticipated scope of work does not disturb more than one acre of developable land. Per EISA 438, a storm water management plan will not be required since the project does not add more than 5,000 SF. The DB contractor will be required to submit an NOI/General Construction NPDES permit through the Alabama Department of Environmental Management (ADEM). The DB Contractor shall comply with all permitting requirements based on the DOR's final design.

PART 5 ANTI-TERRORISM FORCE PROTECTION REQUIREMENTS

5.1 FORCE PROTECTION DESIGN

5.1.1 Codes and References

This project is being designed and constructed for the Department of Homeland Security (DHS) and, as such, the Standards of UFC 4-010-01 Department of Defense Minimum Antiterrorism Standards for Buildings do not apply to this project.

PART 6 SITEWORK, GEOTECHNICAL and LANDSCAPING

6.1 CIVIL DESIGN CRITERIA

The engineering design requirements and criteria for the Site work section herein, shall be in accordance with the requirements specified within Part 2 of this Specification section. All criteria documents shall be the current edition, where there is a conflict in criteria, the most stringent shall apply. Refer to Section 01 10 12 for Geotechnical requirements.

6.2 GENERAL CIVIL DESIGN REQUIREMENTS

The site work design required for this project shall include but may not necessarily be limited to the items listed within this section.

6.2.1 Demolition and Removal

The Contractor shall provide layout surveying as necessary to locate the new work items prior to initiating demolition work. Erosion and sediment control Best Management Practices (BMP's) shall be in place and approved by the Contracting Officer's Representative prior to initiating demolition work. The RFP drawings present existing topographic conditions and locations of existing structures and utilities. The Contractor may utilize the utilities during construction operations as approved by the Contracting Officer's Representative and may incorporate the utilities as part of the final project. All demolition debris shall be removed from the limits of DHS COBRA Incinerator Disposal and Facility Reutilization, DHS Center for Domestic Preparedness and disposed of in a manner as required by law and Alabama Department of Environmental Management regulations. The Contractor shall be responsible for all disposal permits and regulations requirements. If at any time during or after the performance of this contract, it is determined by the Contracting Officer or their authorized representative that the Contractor has not complied with the requirements of the contract pertaining to the disposal of waste material, the Contractor shall be required to take any corrective action directed by the Contracting Officer or other competent authority at no additional cost to the government. Any fine, fee, or penalty assessed by the regulating authority as a result of the Contractor's failure to comply with this provision shall be paid by the Contractor. If any part of the performance of this contract is subcontracted, a provision substantially similar to the above shall be included in all such subcontracts. Such provision does not, however, relieve the prime Contractor from ultimate responsibility under the contract.

6.3 CIVIL DESIGN REQUIREMENTS

6.3.1 Project Location

The project site is located east of Old Fort McClellan at the end of Walter Phillips Road. The COBRA complex is housed inside a secure fence line. The Incinerator building is located in the northeast portion of the secured complex.

6.3.2 Constraints

The Contractor is advised that the concept site layout and requirements shown on the criteria drawings shall be observed. Any proposed changes from the

concept site layout shall be submitted for review and approval in accordance with the requirements set forth in Section 01 10 12 DESIGN AFTER AWARD.

No stormwater permit will be required from the City of Anniston since the installation is not included in their Municipal Separate Storm Sewer System (MS4). The anticipated scope of work does not disturb more than one acre of developable land. No storm water management plan will be required since the project does not add more than 5,000 SF according to EISA 438. The DB contractor is required to submit an NOI/General Construction NPDES permit through the Alabama Department of Environmental Management (ADEM).

6.3.3 Fencing

Provide fencing along the construction site and at all open excavations and tunnels to control access by unauthorized personnel. Safety fencing must be highly visible to be seen by pedestrians and vehicular traffic. All fencing must meet the requirements of EM-385-1-1. Remove the fence upon completion and acceptance of the work.

6.3.3.1 Polyethylene Mesh Safety Fencing

Temporary safety fencing must be a high visibility orange colored, high density polyethylene grid, a minimum of 48 inches high and maximum mesh size of 2 inches. Fencing must extend from the grade to a minimum of 48 inches above the grade and be tightly secured to T-posts spaced as necessary to maintain a rigid and taut fence. Fencing must remain rigid and taut with a minimum of 200 pounds of force exerted on it from any direction with less than 4 inches of deflection.

6.3.4 Contractors Use of Site

The Contractor shall coordinate with Contracting Officer's Representative for laydown area, offices, and parking and storage facilities. Any damage to existing improvements adjacent to or on the project site due to construction activity under this contract shall be replaced/repared at the Contractor's expense. All Contractor POV parking areas shall be coordinated and approved in advance by the Contracting Officer's Representative.

6.4 NEW SITE DESIGN AND CONSTRUCTION

6.4.1 Conceptual Site Plans

The concept site geometry plan presents the general geometric layout for the site work. The Contractor shall design horizontal and vertical control, drainage, concrete paving, and minimal site grading for the Energy Storage System Pad.

- 1) New Concrete Pad: Concrete work in this scope consists of the construction of a new concrete pad for the Energy Storage System (ESS) equipment. The concrete equipment pad thickness will be determined by the structural engineer based on equipment loading. Any jointing for the equipment pad shall be specified by the structural engineer. An expansion joint will be required between the new concrete and asphalt. The existing asphalt, adjacent to the new ESS pad, will require minimal cutting and removal to accommodate the concrete formwork.

- 2) New Water Main for Solar Wash Systems: The main parking lot will require water main utility work for this project, within bid options 4 and 5. The main parking lot which will have three new canopies constructed with solar panels mounted on top. There is an existing water main running west to east along the access drive and the southern portion of the lot. The main trunk line will be tapped with a 4-inch PVC main and will loop around the parking lot to a secondary 4-inch tap, for redundancy. There will be seven 1.5-inch service taps, with backflow preventers, connected to the 4-inch loop. These services will be utilized for the solar panel wash down system.

6.5 STORM DRAINAGE

The storm drainage for the ESS equipment pad shall consist of grading the new disturbed areas, around the ESS pad, towards the existing drainage ditch to the northeast. This will ensure that the new drainage pattern will match the current existing drainage pattern, which diverts runoff away from the buildings and asphalt access road. The equipment pad shall be a minimum of 6-inches above the finished grade.

The storm drainage for the bid option 2 canopy adjacent north of the Incinerator building will be piped to downspouts and discharge on grade, as it currently does. The existing area slopes to the drainage ditch to the northeast.

The storm drainage for the bid option 4 & 5 canopies over the existing parking lot will vary. The bid option 4 canopies on the edge of the parking lot will have gutters installed conveying water to downspouts at each column. This will ensure that the point discharge from each down spout will be distributed across the canopy. The bid option 5 canopy over the center of the parking lot will drain from the roof onto the existing pavement. All drainage from the new canopies will be routed within the existing parking lot to match the current drainage system.

6.6 Sodding

Graded and scarred areas around the ESS equipment pad shall be sodded. If disturbed areas will be left for more than ten calendar days without construction activity, the Contractor shall install temporary seeding and mulching.

- a. Prior to sodding, loosen existing soil to a minimum depth of 4-inches. Top 4-inches shall be mixed with soil amendments including 2-inches topsoil.
- b. Provide 2-inch offsite topsoil for all sodded areas. Amendments and fertilizer to existing soil shall be determined onsite based on soil conditions at the time of construction. Sodding shall be specified in Section 32 92 23 SODDING.
- c. The sod shall be firm, tough texture, having compacted growth of grass with good root development. It shall contain no noxious weeds, or any other objectionable vegetation, fungus, insects, or disease. The soil embedded in the sod shall be good clean earth, free from stones and debris.

- d. Before being cut and lifted the sod shall have been mowed at least three times with a lawn mower, with the final mowing not more than 7 days before the sod is cut.
- e. Solid sod shall be laid with closely abutted joints with a tamped or rolled, even surface.
- f. The finish level of all sod areas after settlement shall be 2 inches below the top of abutting curbs, walks, paving and wood borders to allow for building turf.

PART 7 ROOM DESCRIPTIONS AND FUNCTIONAL REQUIREMENTS

7.1 GENERAL

This section is included to aid the Contractor in understanding the requirements of the functional areas within the renovated facility. Refer to RFP CRITERIA DRAWINGS for additional requirements. Refer to other portions of this RFP for additional requirements and criteria that apply to these functions.

All materials and equipment are Contractor Furnished and Contractor Installed (CFCI) unless otherwise indicated.

Miscellaneous Information:

- Hours of operation for the facility are sporadic and not on a regular schedule. When used, the facility will be occupied 8 hours a day for 2 to 3 days per week.
Weekend hours are expected to be minimal.

Room(s):	Training 101
Description:	Training Room
Functional Requirements:	Training Room space for Students
Special Requirements	Water and Compressed air connections to training equipment.

Room(s):	Maintenance 102
Description:	Maintenance Room
Functional Requirements:	Space for existing boiler and autoclave
Special Requirements	None

Room(s):	Electrical 103
Description:	Electrical Room
Functional Requirements:	Electrical room
Special Requirements	

PART 8 ARCHITECTURAL DESIGN

8.1 GENERAL

Architectural design shall be in accordance with the criteria identified in this RFP. All portions of the site and facilities shall meet the ABA Accessibility Standard for DoD Facilities unless otherwise noted.

AMENDMENT 0003

8.1.1 Building Scope - General Description

Building 801D was constructed in 1983 as an incinerator building. The current total area of the facility is approximately 7,042 SF. The existing building construction type is Type IIB. The scope of work generally includes the removal and disposal of inoperable incinerator equipment and repurposing the structure as a ventilated indoor training facility using renewable solar energy systems to improve facility operational resilience and reduce environmental impact. Specific additional work includes the removal of a caustic liquid storage tank and associated piping, site improvements to accommodate an Energy Storage System (ESS), and construction of free standing canopy structures (Bid Options).

AMENDMENT 0003

8.1.2 Asbestos Materials and Lead Based Paint

Per the attached Hazardous Materials Survey Report included in the appendices, lead and asbestos containing materials are present in the existing facility. The D/B Contractor shall carefully review the entire Hazardous Materials Survey Report and shall follow all recommendations included therein. The D/B Contractor shall also adhere to all State, Federal, and OSHA regulations governing work with hazardous materials.

The D/B Contractor shall not use lead-based paint or materials containing Asbestos in the renovation of this facility. Upon completion of the construction, the Contractor shall submit two copies of a Certified Letter to the Contracting Officer's Representative (COR) stating that no lead based paints or materials containing asbestos were used in the construction of the new facilities.

8.1.3 Demolition

The drawings do not indicate all required demolition. The scope of demolition work is that required to comply with the RFP requirements. Demolition extent can be determined by review of the Existing Conditions drawings provided as compared to the New Work drawings. Section 01 10 10 and appendices further define required demolition. Remove and/or modify existing finishes to accommodate new work. Patch and repair existing construction as required to match proposed new construction or existing adjacent construction. Demolition and/or removal and replacement of existing walls, finishes, and slabs may be required to install new utilities required by Section 01 10 10 and appendices. Demolition may also include abatement of asbestos as identified in the Hazardous Materials Survey Report. The scope also includes removal of all incinerator equipment that remains in the building at the time of turn over of the building

to the D/B contractor. Demolition of the Caustic Tank located west of the O&M building, and its associated piping to the incinerator is also included in the project scope. The D/B contractor is responsible for all demolition required to complete the project.

8.1.4 Architectural Drawings

The drawings and information provided in the RFP describe the general configuration of the proposed scope of work. Changes to the information illustrated in the drawings will require Government approval.

8.2 EXTERIOR CONSTRUCTION

Exterior Building Components and Cladding shall comply with Part 10 STRUCTURAL DESIGN REQUIREMENTS and the requirements of this section. All new exterior work shall match existing materials in style and color.

8.2.1 Exterior Wall Cladding

Exterior wall cladding will be as described herein, on the drawings, and as required in the design criteria. The exterior wall cladding will be removed and replaced with metal wall panels where shown. Metal Panels shall be prefinished, and color shall match the existing wall panels. See RFP drawings for locations.

8.2.1.1 Metal Wall Panel

Metal wall panels shall be prefinished galvalume of gauge, panel width, and thickness to match existing wall panels to remain. Panel assemblies shall be continuous, unbroken panels from top to bottom with concealed clip attachment and meet the following performance criteria:

- a. Fire and Smoke: The panel shall meet ASTM 4480 and ASTM 4482 with a flame spread rating or 25 or less, and smoke of 50 or less.
- b. Structural loading: FM 4481 and comply with part 10 STRUCTURAL DESIGN REQUIREMENTS.
- c. Water Infiltration: Comply with ASTM E331 with no uncontrolled water penetration at 20 PSF of differential pressure, and AAMA 501.1 with no sign of water leakage at 15 PSF.

8.2.1.2 Flashings

Provide lead-free flashing and closures at transitions and joints. Long-lasting flashings, such as stainless steel, are to be used. Exterior use of flashing materials such as copper and zinc that can contribute to stormwater pollution are to be minimized.

Provide flashings at head, jambs and sills at all louver openings and all terminations. Install with sealed lap joints. Flashing will be solid material to match the wall panel. Provide details of all flashings in the construction documents.

As a minimum, provide on-site mock-ups of corner condition, louver with head, jamb and sill flashing, and transition flashing at roof to wall flashing. The mock-up may be part of the final construction when approved by the Government.

8.2.1.3 Sealants

Comply with: A Professionals Guide from the Sealant, Waterproofing and Restoration Institute (SWI). All sealants must conform to ASTM C920. Provide backer rod and tooled sealant joints. Provide primer unless not recommended.

Provide joint sealants in conformance with UFGS 07 92 00 JOINT SEALANTS and use materials and Installation in conformance with the requirement for a minimum 10-year warranty.

Provide Exterior and interior sealants as well as acoustical sealants. Provide sealant colors in exposed applications that blend aesthetically with surrounding materials.

8.2.2 Roofing

Roof systems will be as described below, on the drawings and in the attached appendices. The components of the new roof assembly shall be part of one tested assembly. The assembly shall be designed with 2x safety factor the calculated wind loads.

8.2.2.1 Metal Roofing

New metal roofs will be installed on the new canopy structures. The canopy roof at the Incinerator Building 801D will be Bid Option 2. The canopy roofs at the perimeter parking in the parking lots will be Bid Option 4. The canopy roofs at the middle double loaded parking lot will be Bid Option 5. Install metal roofing in accordance with requirements specified in 07 61 14.00 STEEL STANDING SEAM ROOFING.

AMENDMENT 0003

8.2.2.1.1 Standing Seam Metal Roofing

Roof panels to be installed over all canopies shall be a standing seam metal roof (SSMR) with minimum 22-gauge steel panels with concealed fasteners. **If a pre-engineered canopy system is provided, the canopy manufacturer's standard roofing system is acceptable in lieu of standing seam roof system, provided it meets wind loading requirements of ASCE-7.** Provide continuous clips and fasteners as required to **meet wind loading requirements of ASCE-7.** All roof penetrations, gutters, and flashing will be of material provided by the roofing manufacturer. The manufacturer supplying the system shall be responsible for its design, fabrication, erection, and quality control. The manufacturer shall have its representative inspect the installation of the roof system at appropriate intervals during construction and shall furnish a warranty assuring the structural integrity and water tightness of the system for a period of twenty (20) years and against damage by wind regardless of cause. The roof shall be factory finished. Gutters and downspouts shall be surface mounted outboard of exterior and discharge at grade on splash blocks. Roof slope shall be 2:12. Provide new storm collars at all pipe penetrations. All exposed roof penetrations, and sheet metal including flashing and gutters shall be shop painted or fabricated from sheet metal to match the metal roof color. Paint coating shall provide 20-year color fastness warranty.

Hold a pre-roofing conference with subcontractors and the Government. Provide a Roof Quality Assurance Plan to include design review and on-site quality control during construction. All exposed flashing will match the roof material color and coating specification.

The Contractor shall hire an independent Registered Roofing Consultant, registered with the International Institute of Building Enclosure Consultants (IIBEC, formerly RCI - Roof Consultants Institute) to review and approve both the design document submittals and shop drawings prior to submission of construction submittals. This individual or his representative shall also inspect each building roof installation once during roof construction and once after completion of roof construction for conformance with the CONTRACT DOCUMENTS AND APPROVED SHOP DRAWINGS. Site visits shall be coordinated with the COR a minimum of 3 days prior to visit. The inspector will issue reports with copies to the Contracting Officer's Representative.

Specifications for standing seam metal roofs will require the following:

- a. All laps will be in the direction of flow. Roofs with a dimension in slope direction of 60 feet or less will be constructed without a joint. Any sealant used shall match the roof material and will only be used in compression and where shown by the roofing manufacturer.
- b. All roof mounted components shall be painted to match metal roof color. Paint shall be polyvinylidene fluoride equal to Kynar 500 products or approved equal.
- c. Roof will be designed in conformance with the International Building Code and ASCE-7.
- d. The roof will also be warranted against leaks by both the General Contractor with a 20 year no dollar limit (NDL) water-tightness warranty and the Roof Installer with an NDL water-tightness warranty for 5 years. The warranty will cover all costs and materials to make additional repairs at no cost to the Government.

AMENDMENT 0003

8.2.2.2 Flashing and Sheet Metal

In general, follow recommendations of SMACNA, National Roofing Contractors Association, and recommendations and guidance in the unedited UFGS Section 07 60 00 FLASHING AND SHEET METAL. For facilities to receive metal standing seam roof, provide flashing materials from the same manufacturer as the roof including gutters and downspouts. Provide prefinished flashings with a 20-year manufacturer finish warranty. Exposed fasteners should be kept to an absolute minimum with concealed fasteners and cleats used wherever possible. Provide attachments based upon wind loads as determined in accordance with ASCE-7. Do not use lead flashings.

Provide adequately designed gutters and downspouts per IBC to handle anticipated rainfall for the location. Provide external and internal brackets for gutters spaced no more 36 inches for each type. Space downspout support brackets no

more than 4 feet on center with maximum 1-inch standoff. Gutters and downspouts will be of the same material and finish as the metal roof and or fascia.

8.2.3 Fenestration

Windstorm Resistant Exterior Openings: Provide exterior galvanized hollow metal doors and frames, and overhead coiling doors as complete and tested assemblies, including approved hardware, to meet the wind loads, design pressures, and glass and glazing requirements to comply with ASCE-7.

- a. Each unit to bear a permanent label with manufacturer's name, city, and state.

AMENDMENT 0003

8.2.3.1 Exterior Flush Doors

Exterior flush doors and frames must be hot dipped galvanized steel and meet the required criteria for force protection, wind loading, fire ratings, or other requirements. Exterior hollow metal steel doors must be grade IV, extra heavy-duty, Model 2, insulated, seamless design. All door frames shall be welded. No Knock-down frame shall be allowed. Minimum thickness for hollow metal doors shall be 1-3/4 inches. Door frames not located under protective overhangs shall have Type 316 stainless steel drips with hooks. All doors shall include thresholds and weather seals. Exterior flush doors shall be factory primed and field painted. Doors will be minimum 14-gauge face panel. Frames will be minimum 14-gauge.

Steel doors and frames must comply with ANSI/SDI 100 and SDI 105. Steel doors must be fabricated from galvanized steel sheets that comply with ASTM A 653/A 653M, commercial steel, or ASTM A 642/A 642M, drawing quality, with ~~A69~~A60 or G60 coating designation, mill phosphatized.

AMENDMENT 0003

8.2.3.2 Overhead Coiling Doors

Provide overhead roll-up doors, 14'-0" high by 14'-0" wide. Provide powder coat painted finish with color for the door and accessories to match facility color scheme. Design the steel overhead roll-up slats and door width to withstanding the design wind loading of American Society of Civil Engineers (ASCE)7 and operate normally.

Accomplish door operation by UL Listed electric motor operation with electric controller and an auxiliary hand chain operation. Provide slat panel profile to match existing overhead doors on the facility. Also provide counterbalance, heavy duty springs, wear strips, full perimeter weather-stripping, continuous button pressures safety operation, electric or infrared safety edge, galvanized hardware, and manufactured trims and closures pieces. Protect the wall door jamb opening with bollards designed to resist abuse from the type of material and vehicles that are transported through the opening.

8.2.4 Wall Louvers

Provide aluminum fixed blade, 50% (minimum) free area, wall louvers with insect screen to prevent the infiltration of wind-driven rain and pests into the building interior. Inset screens shall be stainless steel mesh. Louver color selection shall be approved by the COR. All hardware, brackets, and similar, must be Type 316 stainless steel. Wall louvers are to meet wind loads as defined in accordance with ASCE 7 and be AMCA certified for expected wind driven rain.

8.2.5 Metal Ladders

Provide vertical ladder conforming to Section 7 of 29 CFR 1910.27. Ladder must be provided to access solar panels on roof of Building 801D.

8.3 INTERIOR CONSTRUCTION

8.3.1 Interior Walls

8.3.1.1 Typical Interior Wall Construction

Interior wall shall be constructed using CMU to 10 feet above finish floor with metal liner panels on metal studs above 10 feet to structure above. Wall shall be designed for liner panels on both sides of metal stud framing. Where studs are noted to extend to the underside of the structure, studs shall be braced. 20-gauge minimum metal studs will be used to support metal liner panels. Except as otherwise noted, Contractor shall determine stud gage and spacing required to achieve a maximum deflection of L/240 based on a uniform load of 10psf. Maximum stud spacing shall be 16 inches on center.

8.3.1.2 Interior Walls Adjacent to Structural Modifications

The DB Contractor is responsible for designing and constructing the structural modifications as described in Part 10 of this 01 10 10. The DB Contractor shall also design and construct modifications to adjacent architectural construction in order to perform the structural upgrades.

8.4 INTERIOR DOORS AND FRAMES

Standard interior doors shall be flush hollow metal. Conform to SDI/DOOR A250.8, Level 1, physical performance Level C. Door frames shall be welded 16-gauge steel for SDI/DOOR A250.8 Level 2 doors

All door frames shall be welded unless otherwise noted. Knock-down frames are not allowed.

Unless otherwise indicated all interior doors will be 3-foot by 7-foot.

8.4.1 Door Hardware - General Requirements

All exterior and interior doors shall be provided with hardware. Provide hardware in a brushed stainless finish. Hardware components and keying shall be provided and shall meet ABA requirements for accessibility, and NFPA requirements for life safety. All lock hardware must match DHS master lock system.

- a. Provide the services of an Architectural Hardware Consultant (AHC) or equivalent. The Consultant will review and approve the Hardware submittal.
- b. All doors providing exterior egress from corridors and occupied spaces, shall be provided with panic hardware. All hardware shall be exit-only, except for doors indicated on the RFP drawings.
- c. Provide minimum 3 hinges per door of 7-feet high or less.
- d. Provide lever handles with breakaway features in lieu of knobs in conformance with ABAS.
- e. Provide silencers on all doors not receiving soundseals or weatherstripping.
- f. Provide hardware in compliance with required STC ratings, IBC and ATFP loading requirements.
- g. Door Closers are required for:
 1. All Doors
- h. All doors will be reinforced as needed to accommodate hardware.

8.4.1.1 Exterior Doors Requirements

Doors and associated hardware shall comply with ASCE 7 requirements. Provide door closers, and exterior hinges with non-removable pins, threshold and weather-stripping. At single doors, provide door closers including hold-open features.

Exterior swing doors must swing out to allow the frame rabbet to act as a stop that will prevent doors from blowing in during high-velocity winds. Having door seals compress by the door against the door frame side allows the rabbets to resist water. Exterior doors must have seals and automatic door bottoms that prevent wind-driven rain from entering facility spaces. Hardware must include threshold, door bottom, and weather seal.

Exterior doors must have Architectural Barrier Act (ABA)-compliant weather-sealed thresholds and automatic door bottoms. Door thresholds must have Type 316 stainless steel doorsill pan flashing with end dams, rear leg, and turned-down front leg. Provide surface-mounted neoprene sweeps with beveled edges that seal against the threshold. Provide thresholds with metal members that have compressible vinyl seals that seal against the door. The threshold base metal must be aluminum.

Provide nonferrous metal and UV-resistant vinyl weather stripping, including on thresholds. Weather stripping must be factory applied, and limit infiltration to 0.25 cfm/ft² in accordance with ASTM E283. Provide continuous weather-strip gasketing on exterior doors. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

8.4.1.2 Interior Doors

Service and Utility Room Doors: Provide mortise store room F07 function lockset, closers, hinges, silencers and mop plates.

8.4.1.3 Keying Requirements

Locksets and cores must be purchased by the contractor. Provide a master key system for the facility compatible with the existing DHS master keying system. The contractor must provide construction cores.

The DBC shall coordinate a keying system meeting DHS and User requirements. The DBC's Project Manager, Superintendent, Hardware Subcontractor, Designer of Record, Contracting Officer's Representative, DHS Hardware Specialist, and the Using Activity's Representative shall attend a meeting to establish the keying systems for all facilities included in the project. This meeting is intended to verify requirements, the necessary security, and access control within the facility. The meeting shall produce a marked-up copy of the floor plan and any master keying or grand master keying requirements.

8.5 INTERIOR FINISHES

The D/B Contractor will provide finishes consistent with the criteria as outlined in the RFP. Finishes will not be changed without prior approval of the Government. Refer to Section 9 INTERIOR DESIGN of this specification for additional SID requirements.

8.5.1 Ceilings

All rooms shall have painted exposed structure ceilings. Rooms without ceilings shall have the structure and all exposed elements painted as specified in this RFP. Refer to Section 9 INTERIOR FINISHES of this specification for additional ceiling requirements.

8.5.2 Flooring

8.5.2.1 Sealed Concrete Floor Slabs

All indicated concrete floor slabs shall be sealed with a water-based sealer to prevent dusting and maintainability. Areas include: Training space.

8.5.3 Paint

All new and existing walls, exposed structure, piping, doors, and frames shall be painted. Comply with the recommendations of UFGS 09 90 00 PAINTS AND COATINGS for materials and preparation of surfaces to be coated. Comply with Master Painter Institute (MPI) standards for commercial quality coatings. As a minimum, SSPC PA Method 1 will apply to all surfaces, follow MPI Architectural Painting Specification - recommendations noted are considered to be required.

8.6 MISCELLANEOUS METALS

Provide miscellaneous metal components as noted or as required to design and construct the facilities. All exterior steel items shall be hot dipped galvanized before painting including items specified under site work. Comply with the recommendations of Section 05 50 13 MISCELLANEOUS METAL FABRICATIONS.

8.7 MISCELLANEOUS STRUCTURAL AND UTILITY REQUIREMENTS

All existing storage enclosures which are to be removed and stored during construction and reinstalled upon completion of work are the responsibility of the DBC DOR to fully identify, design, and install the required infrastructure, structural support, and other support for the final as shown in the RFP drawings.

8.8 SPECIFICATIONS

The following list of specifications is anticipated for this project. The list is not comprehensive, and the Design/Build Contractor will provide all specifications required to adequately describe the project and all materials to be used.

01 33 00	SUBMITTAL PROCEDURES
01 42 00	SOURCES FOR REFERENCE PUBLICATIONS
02 41 00	DEMOLITION
05 51 33	METAL LADDERS
07 42 63	FABRICATED WALL PANEL ASSEMBLIES
07 60 00	FLASHING AND SHEET METAL
07 61 14.00 20	STEEL STANDING SEAM ROOFING
07 92 00	JOINT SEALANTS
08 11 13	STEEL DOORS AND FRAMES
08 71 00	DOOR HARDWARE
08 81 00	GLAZING
08 91 00	METAL WALL AND DOOR LOUVERS
09 90 00	PAINTS AND COATINGS
32 16 19	CONCRETE CURBS, GUTTERS AND SIDEWALKS
32 92 23	SODDING

PART 9 INTERIOR DESIGN

9.1 STRUCTURAL INTERIOR DESIGN (SID)

The SID includes the selection and sampling of all applied finishes to complete the building exterior and interior architectural features.

9.2 DESIGN REQUIREMENTS

The Contractor shall use this criterion and the drawings for the development of the SID exterior and interior finishes, materials, and colors. The SID submittals shall run concurrent with the architectural submittals. The Contractor shall update the color boards and the UFGS to reflect any of the Government comments or discontinued manufacturer colors indicated. The SID finishes accepted at the Final design phase (defined in Section 01 10 12) shall be the SID finishes installed during the construction phase of the project.

9.3 SID ROOM FINISH NARRATIVE

Each interior space shall be finished in accordance with this narrative. This narrative provides initial guidance only. As the design becomes more defined after award of the contract, the Contractor shall provide a comprehensive room finish schedule, finish plans and elevations and details to further define all aspects of the SID. Definitions: (GFGI) shall mean Government Furnished, Government Installed. (CFGI) shall mean Contractor Furnished, Contractor Installed

9.4 NEW FACILITY FUNCTION AREA/ROOM SUMMARY REQUIREMENTS

Room(s) :	Training 101
Summary:	Training area
Finish Requirements:	Floor: Sealed concrete Base: None Walls: Paint new CMU and existing exposed structure Ceiling: Paint exposed structure.
FF&E	None
(GFGI)	None

Room(s) :	Maintenance 102
Summary:	Maintenance area
Finish Requirements:	Floor: Sealed concrete Base: None Walls: Paint new CMU and existing exposed structure Ceiling: Paint exposed structure.
FF&E	None
(GFGI)	None

Room(s) :	Electrical 103
Summary:	Electrical Room
Finish Requirements:	Floor: Existing to remain Base: Existing to remain Walls: Paint existing walls Ceiling: Existing to remain.
FF&E	None
(GFGI)	None

9.5 INTERIOR FINISHES AND COLOR SCHEDULE

Product and color are shown as being specific to one manufacturer to establish design intent. These finishes have been reviewed and approved by the end user and the Government. Acceptance by the COR is required before the substituted product may be used. Product substitutions shall be permissible only when an item has been discontinued or colors/patterns have been changed in the indicated product line. As the design becomes more defined after award of the contract, the Contractor shall provide a comprehensive room finish and color schedule, and associated guide specifications to further define all aspects of the SID.

9.5.1 INTERIOR WALL FINISHES

9.5.1.1 Paint (P)

Architectural Grade Semi-Gloss Finish Paint (HM doors, frames and CMU walls).

9.5.1.2 High Performance Coating (HPC)

Architectural Grade, Semi-Gloss Finish (Exposed Structure including columns, decking, trusses, beams, etc.)

9.5.2 INTERIOR CEILING FINISHES

9.5.2.1 Paint (P)

Architectural Grade Semi-Gloss Finish Ceilings (Exposed structure).

AMENDMENT 0003

~~9.6 STORAGE EQUIPMENT (BID OPTION 2) **NOT USED**~~

~~As part of Bid Option 2, the D/B Contractor will be responsible for removal and storage two existing storage sheds and contents to allow for the construction work. The D/B Contractor shall also return and reinstall existing storage sheds and contents upon construction completion. Removal, storage, and reinstallation of storage sheds and contents shall be incorporated into the D/B Contractor's construction phasing plan, for Government approval.~~

~~The D/B Contractor shall be responsible for the inventory confirmation, removal, and storage of all items indicated in the RFP drawings for re-use. Storage Shall be in a secured space. Storage facilities shall protect and maintain the equipment and provide protection from insects, pests, and animals.~~

AMENDMENT 0003

9.7 TRAINING EQUIPMENT

The Contractor shall be responsible for the procurement and installation of hazmat training prop equipment including utility connection to the moveable equipment. The Contractor will be responsible for coordination and provision of all utilities necessary for operation of all training equipment.

Basis of Design criteria and products data for the training equipment is included as an appendix to this RFP and under SECTION 01 10 12 DESIGN AFTER AWARD, Par 6.3 FURNITURE, FIXTURES AND EQUIPMENT (FF&E)

9.8 SPECIFICATIONS

Refer to Part 8 for a listing of Specifications.

PART 10 STRUCTURAL DESIGN

10.1 Reference Part 2 for applicable codes and standards.

10.2 General Design Requirements

The engineering design requirements and criteria for the Structural Requirements section herein shall be in accordance with the requirements specified within this section and the criteria documents listed. All criteria documents shall be the current edition, where there is a conflict in criteria, the most stringent shall apply.

10.2.1 The D/B Contractor shall have on staff a licensed Structural Engineer. This engineer shall be responsible for the structural design of any building enhancements, new building structures or modifications to the existing structural systems. The structural system for the building shall include foundations, exterior and load bearing walls, roof framing, roof diaphragms, lateral stability system, framing and connection of any architectural features, and the support of mechanical and electrical equipment and stationary solar array panels. In addition, the Structural Engineer is responsible for the design of all lesser related structures such as utility vaults, pits, retaining walls, etc., although they may be shown on other disciplines' drawings. Structural design of the building modifications shall be compatible with the architectural design. Structural design shall be in accordance with the criteria, requirements, and guidance provided in the U.S. Army Corps of Engineers, Mobile District Design Manual, the International Building Code, 2021, and the following requirements. In event of a conflict, the most stringent shall govern design.

10.2.2 The Contractor's DOR is solely responsible for the determination and complete design of all modifications to the structural system. The final structural system design decisions shall not reduce the net square footage requirement as defined in this document.

AMENDMENT 0003

10.2.3 The existing structure of the incinerator building is a structural steel superstructure on shallow foundations. The existing slab is 18 inches thick and is anticipated to be adequate to handle equipment loads and training props. The Contractor's DOR must verify the existing slab capacity through structural analysis. The roof framing is open web bar joists bearing on structural steel wide flange girders. The girders span between structural steel wide flange columns bearing on a monolithically poured continuous footing at the slab edge. Lateral stability is provided with structural steel knee braces in both directions. The lateral load is transferred to the lateral stability systems through structural steel bracing in the plane of the roof structure. Reference Appendix for existing structural drawings associated with the incinerator building.

AMENDMENT 0003

10.2.4 The project will remove the existing end wall metal panels, structural steel channel wind columns, and cold formed zee girts as shown on AD200 and AD201 for the incinerator building. This project will also install new metal wall panels, cold formed girts, and support framing for the new end

wall layout with new door openings as per A-200 and A-201 for the incinerator building. It is the responsibility of the D/B Contractor that all necessary framing be provided for new overhead coiling door openings and metal wall panels meet components and cladding pressure requirements. This modification will result in an increase of the lateral forces more than that allowed per IEBC 806.3. Enhancements to the lateral stability system are expected to be required. All analysis and design of all enhancements are the responsibility of the DOR for the D/B Contractor. Enhancements shall include additional framing and foundation upgrades as necessary to resist the lateral forces.

10.2.5 The existing roof system for the incinerator building is standing seam metal roof attached to structural steel bar joists that are supported on structural steel wide flange girders. The existing structural roof system is to remain. The addition of solar panels to the existing standing seam roofing is not expected to exceed a dead load of 12 psf to avoid evaluation of the existing roofing framing based on IEBC 805.2. Design for strengthening of the roof framing to support the addition of any rooftop mechanical equipment, electrical equipment or PV loads in an excess of a total of 12 psf shall be the responsibility of the D/B Contractor. Solar panel attachments to the existing roof shall not exceed a spacing of 8 ft o.c. Reference Appendix for existing structural drawings associated with the incinerator building.

10.2.6 The Contractor is responsible for infilling slab where current pits exist. Reference mechanical demolition drawing MD101 in Appendix C for infill of mechanical pads. Contractor to make slab level with existing slab, including backfilling pit and pouring new slab.

10.2.7 This project will install new louvers on the north face of the incinerator building above where existing metal wall panels and wall framing terminate. The existing framing is not sufficient to support new louvers. The DOR shall provide all necessary framing to support new louvers. Reference Drawing in Appendix for elevation view.

10.2.8 Additional solar panels shall be supported by the Operations and Maintenance Building (Bid Option 3) and additional canopy structures (Bid Option 2, Bid Option 4, and Bid Option 5).

10.2.9 The D/B Contractor is responsible for the design of all new canopy structures in the Base Bid, Bid Option 2, Bid Option 4, and Bid Option 5. All canopy structures shall be designed to support stationary solar panels and are required to meet architectural geometry requirements as shown on A-140, A-142, and A-143. All canopy structures are required to be designed to withstand gravity and lateral loads as determined by ASCE 7-16 and IBC 2021. All new canopy structures are anticipated to have metal roofing as defined by 8.2.2.1.

10.2.10 All new canopy structures will be supported on shallow foundations. The D/B Contractor is responsible for ensuring that all canopy structure foundations can withstand all lateral and gravity loads and foundations do not exceed the bearing pressure of the soil. For bid purposes assume an allowable bearing pressure of 1500 psf.

10.2.11 The addition of solar panels to the Operations and Maintenance building is not expected to exceed a dead load of 12 psf. The original design

roof live loads of the O&M building are 20 psf, reference S-7 in Existing Conditions Drawings Appendix. According to IBC 2021 1607.14.4.1, the existing roof structure shall not have to be reinforced if solar panel weight is limited to the original live load reduction design load of 12 psf. The D/B Contractor is responsible for supporting the addition of new solar panels and ensuring panels do not exceed this weight. Solar panel attachments to the existing roof shall not exceed a spacing of 8 ft o.c.

10.2.12 Wood shall not be used for any structural members. Plywood shall not be used for wall sheathing, structural roof sheathing, or floor decking.

10.2.13 The D/B Contractor is responsible for the addition of bollards at all new column locations.

10.2.14 The D/B Contractor is responsible for the addition of an OSHA compliant roof access ladder on the existing incinerator building. Reference architectural drawings on A-200 for reference in the appendices.

10.2.15 The D/B Contractor is responsible for coordinating and controlling the tolerances between the structural systems. Prior to commencement of erection, the D/B Contractor shall perform a field check of the project to determine that the members can be erected in their proper locations and as detailed in the drawings.

10.2.16 Special Inspections are required for this project. Per IBC 2021, a SIOR is not required. It is not required for a structural DOR to complete structural observations for this project.

10.2.17 Where dissimilar metals are in contact, or where aluminum is in contact with concrete, mortar, masonry, wet or pressure-treated wood, or absorptive materials subject to wetting, the surfaces shall be protected with a coat of bituminous paint or asphalt varnish.

10.2.18 The D/B Contractor shall determine structural system, whether structural steel or pre-engineered metal building to meet building requirements and dimensions as defined in the architectural drawings provided in Appendix.

10.2.19 10.2.20 It is the D/B Contractor's responsibility to add OSHA approved fall protection and to determine the method in which it is provided. The determined fall protection system is required to not exceed the height of the solar panels.

10.2.21 The D/B Contractor is responsible for providing structural supports for reinstalled gas line shown on A-200 for the incinerator building. The D/B Contractor is responsible for coordinating with new side wall framing and supports are to connect to structural framing. Ground-supported vertical support is not acceptable. It is the responsibility of the D/B Contractor to determine method of supporting the reinstallation of the gas pipe.

10.3 Design Loads

10.3.1 Design dead, live, wind and seismic loads, and load combinations shall be in accordance with the IBC 2021, unless specified otherwise herein.

10.3.2 Live loads, not given, shall be in accordance with ASCE 7-16. The following floor areas shall be designed using the stated loads, as a minimum:

	Uniform	Concentrated
Roof		20 psf

10.3.3 Wind design criteria shall be based on a 108 miles/hr 3 second gust speed for a Building Risk Category II per ASCE 7-16. The Exposure Category shall be C. Wind loads shall be computed and applied in accordance with the ASCE 7-16. All parts of all structures shall be designed for the specified wind velocity and shall be tied together to provide an integrated resistance to high wind effects.

10.3.4 Seismic loads shall be in accordance with ASCE 7-16, Building Risk Category II; Importance Factor $I = 1.0$; Seismic Design Category C. The short period spectral acceleration value (S_s) and the one second period spectral acceleration value (S_1) shall be per the DA. Seismic Site Classification D shall be used. Seismic loads shall be computed and applied in accordance with the IBC 2021 and ASCE 7-16.

10.4 Concrete

10.4.1 Reference Part 2 applicable codes and standards.

10.4.2 Specified minimum compressive strength f'_c shall be 4000 psi at 28 days for all concrete, unless noted otherwise.

10.4.3 All detailing and materials used for concrete reinforcement shall be in accordance with ACI 315 and ACI 318.

10.4.4 All exposed concrete shall be assigned an exposure class C2 for the Corrosion Protection of Reinforcement Category per ACI 318 Table 19.3.1.1.

10.5 Steel

10.5.1 Reference Part 2 for applicable codes and standards.

10.5.2 Shop connections for structural steel shall be welded. Field connections shall generally be made with high strength bolts (ASTM F3125 A325) in bearing type connections. All connections other than standard AISC shear connections shall be designed by the structural engineer of record and detailed on the final plans. Connection angles shall be a minimum of 5/16 inches thick and bolts shall be a minimum of 3/4-inch in diameter. Per IBC 2021 section 1603.2 connections, including steel connections, of the primary lateral resisting system shall be designed and detailed by the Structural Engineer of Record.

10.5.3 An erection plan shall be provided by the contractor. The erection plan shall be reviewed, stamped and sealed by a licensed structural engineer. The erection plan shall also be approved by the engineer of record.

10.5.4 Exterior steel embedded in concrete for such purposes as exterior railing, handrails, fence, base plates, anchor bolts, etc. shall be hot-dipped galvanized unless otherwise directed.

10.5.5 Where dissimilar metals are in contact, or where aluminum is in contact with concrete, mortar, masonry, wet or pressure-treated wood, or absorptive materials subject to wetting, the surfaces shall be protected with a coat of bituminous paint or asphalt varnish.

10.5.6 Metal roof deck material shall be galvanized steel and have a minimum thickness of 0.0358-inches (20 gage).

10.5.7 Structural metal roof decks shall be attached to structural supports and to adjoining units using mechanical fasteners, such as screws, powder actuated or pneumatically driven fasteners. Welding shall not be used to attach roof decks.

10.5.8 Where galvanized metal deck is to be exposed and painted in finished work, the surface to be exposed will be cleaned and primed in accordance with the contract specifications in the fabrication plant prior to shipment

10.5.9 Net uplift resistance required will be specified in the Metal Deck specification in keeping with project design computations.

10.6 Masonry

10.6.1 Reference Part 2 for applicable codes and standards.

10.6.2 Concrete Masonry Units

10.6.2.1 New interior CMU walls are expected in the existing incinerator building. Walls are to be non-load bearing partition walls intended to break up the new training space from mechanical equipment. Any modifications shall be completed in accordance with ACI 530. Masonry detailing and materials used shall be in accordance with TMS 402/602.

10.7 Specifications

As a minimum, the Contractor shall edit and submit the following UFGS as defined in Section 01 10 12, Design After Award:

01 45 35 Special Inspections with attachments including Statement of Special Inspections, Schedule of Special Inspections, and Contractor Statement of Responsibility

03 30 00	Cast-In-Place Concrete
04 20 00	Unit Masonry
05 12 00	Structural Steel
05 30 00	Steel Decks
05 40 00	Cold-Formed Metal Framing
05 50 13	Miscellaneous Metal Fabrications
13 34 19	Metal Building Systems

PART 11 HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

11.1 CODES AND REFERENCES.

Design facilities in accordance with all Government requirements, regional, and national applicable codes effective at issue date of RFP, unless otherwise noted, including, but not limited to those listed in Part 2 of this specification section.

The design of the Heating, Ventilating, and Air Conditioning (HVAC) systems will conform to the Mobile District Design Manual 2024 and the applicable codes, standards, and requirements included in this RFP.

11.2 DESIGN CRITERIA

11.2.1 Verify occupancy and heat loads from all Government furnished equipment prior to commencing work.

11.2.2 Provide ventilation calculations, as a minimum, in accordance with the ASHRAE Handbook of Fundamentals.

- a. Design the HVAC systems to industry standards, codes, Government regulations, including the Guiding Principles for Sustainable Federal Buildings and Associated Installations in effect when this RFP is issued including those listed above and to the specifications included in this solicitation.
- b. Submit design documents and obtain approval prior to commencing work on the HVAC system. Ensure the professional quality and technical accuracy of all HVAC design documents and ensure construction meets all requirements of the approved design. Coordinate drawings, specifications, and other design documents upon which construction is based with other disciplines to ensure compatibility of all building systems.
- c. Use equipment that meets or exceeds the minimum equipment requirements set forth in ASHRAE 90.1 or as required to achieve the required building energy efficiency.
- d. Perform final design calculations for the design efforts.
- e. Consider proper maintenance clearances around all equipment including pull space and observance of the "dedicated electrical space" around electrical equipment as required by the National Electrical Code, as well as the minimum clearance requirements set forth in the International Mechanical Code, and the manufacturer's minimum recommended clearances.

11.2.3 GENERAL DESIGN PARAMETERS

- a. Outside Design Conditions: Outdoor conditions are from the latest ASHRAE Handbook of Fundamentals. The values from the ASHRAE Handbook of Fundamentals, Chapter 14 for Anniston, Alabama are indicated below.

1) Outdoor design conditions for cooling are:

- a) The 1.0% dry bulb (DB) and corresponding mean coincident wet bulb (MCWB) temperature (DP calculated).

Outdoor Design Conditions for Cooling		
Condition	°F DB	°F WB
1.0% DB/ MCWB	92	75

- b. Inside Design Conditions: Design for indoor conditions:

- 1) Provide ventilation to maintain dry bulb temperature to within 10 deg. F of ambient.
- 2) Humidification and/or dehumidification is not required.

- c. Ventilation and Exhaust: Provide outdoor air for ventilation and exhaust will be in accordance with all pertinent design standards including the following:

- 1) International Mechanical Code (IMC)
- 2) ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality

- d. All equipment mounting for equipment and utilities weighing 31 pounds or more are designed to resist forces of 0.5 times the equipment weight in any horizontal direction and 1.5 times the equipment weight in the downward direction.

- e. Permitting: Be responsible for all applicable environmental permitting and testing concerning the mechanical systems, including coordination of the permitting with the Contracting Officer's Representative.

11.3 SYSTEM TYPES AND EQUIPMENT REQUIREMENTS

11.3.1 Systems Description and Requirements

The mechanical/HVAC scope is to provide ventilation only of the building spaces.

The DBC is responsible for designing adequate systems fully coordinated with the building design.

No new equipment is allowed on the roof. Include all required fittings, connections and accessories required for a complete and usable system.

11.3.2 Air Distribution Systems

Exhaust Systems: Provide new exhaust fans to ventilate facility. Provide makeup air intake louvers at exterior walls provided with gravity dampers. Exhaust fans shall operate under local thermostat control and will not be connected to a depot-wide control system or building control system.

High Volume Low Speed (HVLS) fans must be provided for additional air circulation. HVLS fans must provide at a minimum 1 cfm/ft² of airflow. Coordinate mounting location and height with hanging light fixtures.

11.4 TEST AND BALANCE

Include testing, balancing, and adjusting of HVAC systems by a certified AABC or NEBB test and balance firm. Submit all reports for approval to the COR on standard AABC or NEBB forms.

11.5 OPERATION AND MAINTENANCE MANUALS

Submit Operation and Maintenance Manuals for all new components of the HVAC systems. Submit manuals for any new equipment for approval 60 days prior to the scheduled completion date for the project.

11.6 MAINTENANCE CLEARANCES AND EQUIPMENT LAYOUT

Ensure proper maintenance clearances around all equipment and observance of the "dedicated electrical space" around electrical equipment as required by the National Electrical Code, as well as the minimum clearance requirements set forth in the International Mechanical Code, and the manufacturer's minimum recommended clearances.

11.7 SPECIFICATIONS

The following list of specifications is anticipated for this project. The list is not comprehensive. Provide all specifications required to adequately describe the project and all materials to be used and installed. Edit and submit the latest comparable UFGS version:

23 05 93	TESTING, ADJUSTING, AND BALANCING FOR HVAC
23 07 00	THERMAL INSULATION FOR MECHANICAL SYSTEMS
23 30 00	HVAC Air Distribution

PART 12 PLUMBING

12.1 CODES AND REFERENCES

Design facilities in accordance with all Government requirements, regional, and national applicable codes effective at issue date of RFP unless otherwise noted including, but not limited to:

12.2 GENERAL SYSTEM CRITERIA

The design of the plumbing system will conform to the Mobile District Design Manual 2024 and the applicable codes, standards and requirements included in this RFP.

Design and install Plumbing system in accordance with the International Plumbing Code and referenced criteria. Inspect and test the plumbing system as prescribed in the International Plumbing Code. Conform to the applicable rules of the International Plumbing Code governing venting of plumbing fixtures, sizing of waste, vents, drains, and water systems. Label all piping and indicate direction of flow. Provide accessible shutoff/isolation valves and water hammer arrestors. If installed above hard ceilings, provide access doors.

- a. Water efficiency: Select plumbing to meet the water-efficiency requirements of the International Plumbing Code.
- b. Test new soil, waste, vent, and storm drainage piping by capping or plugging and filling the system with water, allowing it to stand filled for 8 hours. If tested in sections, subject each section to not less than a 10-foot head. Test new cold water, hot water and hot water circulating piping by applying a hydrostatic pressure of 150 psig for 4 hours minimum. Test piping under floor slabs in floor fill before slabs are poured. Piping which is not tight under tests will be taken down and reassembled. Take down and reassemble, using new couplings, joints in cast iron no-hub pipe not tight under test. Test each fixture for soundness, stability of support and operation. Provide a statement certifying that piping has passed the herein specified test. Perform tests while pipe is exposed to view.
- c. Flush and disinfect all new potable water systems.

12.3 EXISTING CONDITIONS

Domestic water, sanitary sewer, vent systems, compressed air, natural gas, and steam systems are provided in the existing Incinerator Facility. Domestic Cold Water is composed of an existing 4-inch domestic water service (to remain) entering at the south wall. The autoclave bay includes an emergency shower fixture. The treatment room includes a boiler water treatment system, scullery sink with attached emergency eye wash, and a 19-gallon electric water heater. Two hose bibbs are located on the south wall. Potable water is routed to abandoned incinerator, scrubber, and blow down cooler. Trench drains, floor drains, and a cleanout are located around the incinerator. Compressed air enters the facility at the south wall and exits at the west wall. Compressed air serves the incinerator, the scrubber, pneumatic

controls, and autoclaves. Natural gas enters the facility at the north wall and serves the incinerator and autoclaves. Additional gas piping surrounds the exterior wall and is routed to other equipment not contained in the Incinerator Building. Steam is decommissioned from this facility. Abandoned steam piping is routed from the east wall to major equipment.

A large, compressed air system serves the facility and is located in the Operations & Maintenance Building (O&M Building). A 1-1/2 inch compressed air service (to remain) enters at the west wall of the Incinerator Facility and exits at the south wall to serve other areas.

Sanitary service is composed of a 4-inch main that exits the building by the existing restrooms. Sanitary is owned by the Base.

12.4 DEMOLITION

All existing plumbing systems north and east of the control room are to remain as is. Domestic water, sanitary sewer, and compressed air systems west of the control room are to be modified for new, Government provided equipment. Natural gas runouts to the incinerator, the scrubber, and the steam systems west of the control room are to be demolished complete and capped at mains. Natural gas piping in the west wall to be relocated $\pm 1'-0"$ west to the exterior of the wall. Domestic water piping west of control room shall be demolished back to mains on south wall and prepped for future construction. Compressed air piping shall be demolished to furthest extents and prepped for future construction. All hose bibbs and associated piping are to remain as is. The existing sanitary system west of the control room is anticipated to be modified according to piping array location.

12.5 GENERAL PLUMBING MATERIALS, EQUIPMENT AND FIXTURE REQUIREMENTS

12.5.1 Routing and Design

- a. Modify domestic water and waste piping system to accommodate new plumbing fixtures.
- b. Provide 1" domestic water and $\frac{3}{4}$ " compressed air for Training Props. Refer to Training Prop Information in the RFP and RFP Appendices.
- c. Conceal and properly support all piping with allowances for expansion and contraction.
- d. Do not bury interior water distribution piping under concrete floors except where no other routing options exist.
- e. All piping will be drainable.
- f. Insulated and heat trace exposed piping subject to freezing.
- g. Provide individual shutoff or stop valves on water supply lines to all plumbing fixtures. Provide individual stops at all equipment connections.
- h. Consolidate fixture vents through one common vent whenever possible. Reuse existing vent thru roof penetration whenever possible.

possible. Make any new vent penetrations through the roof through a roof jack designed for use with the roofing system furnished.

12.5.2 Materials for Waste, Vent Lines

- a. Soil, waste, and drain piping and fittings passing through and located below the slab: Schedule 40 PVC.
- b. Soil, waste, drain and vent piping and fittings above the slab: Schedule 40 PVC.
- c. Equip each fixture and piece of equipment requiring connections to the drainage system with a trap and vent all fixtures.
- d. Provide floor drains with trap primer in mechanical rooms and toilet rooms.
- e. Provide two additional 3" floor drains in the training bay near the piping array. Route the waste to the storm drainage west of the Incinerator Building. DOR to coordinate final locations with User group during design.
- f. Provide permanently accessible surface or wall cleanouts for each drainage main. Provide cleanouts at each change in direction of sanitary sewer lines, at the intervals specified in the International Plumbing Code, and at the building service entrance. Install ground cleanouts in a 1-foot by 1-foot, 4-inch thick concrete pad flush with grade.

12.5.3 Material for Domestic Water Lines

- a. Water piping: Type L copper pipe.
- b. Joints under the slabs are not permitted.
- c. Minimize supply piping located under concrete slabs and limit to trap primer piping.
- d. Material or equipment containing lead will not be used in any potable water system.
- e. Water Hammer Arrestors: PDI WH201 engineered mechanical type sized and installed to safeguard the water distribution system against destructive water hammer hazard and noise. Air chambers are not acceptable.

12.5.4 Insulation

Provide insulation on all new domestic water (cold) supply piping. Provide vapor barrier on all cold-water piping.

12.5.5 Valves

Provide ball shutoff valves of metal construction. Plastic valves are not acceptable.

12.5.6 Domestic Water Heater

a. Existing domestic hot water heating system must remain.

12.6 GENERAL PLUMBING FIXTURES

- 12.6.1 Maintain all existing plumbing fixtures within the existing facility.
- 12.6.2 Floor Drains: Replace the two existing floor drains in the training bay area. Provide with trap seals.
- 12.6.3 Hose Bibbs: Provide additional hose bibbs along the north interior wall of the training bay area. Hose bibbs shall be freeze proof, with integral vacuum break/backflow preventer, with 3/4" hose connection.

12.7 SOLAR PANEL WASHDOWN SYSTEM

- 12.7.1 Base Bid: Provide an automatic cleaning system for the PV solar panel array at the Incinerator Building. This system will include polyethylene tube lines, a control unit which includes a 130 micron disk filter, timer, and zone valve assemblies. A 3/4" sprinkler nozzle must be attached to each solar panel. The control unit must be located on a light gauge metal support. The nozzle shall be attached to the solar panel via a stainless-steel clip. Sprinkler nozzles must provide 0.25 GPM and shall be zoned with a maximum of 20 nozzles per zone. The washdown system must be capable of being programmed to operate 15 minutes per day with a user-adjustable schedule. Freeze protection must be provided through manual shut off of the water supply and the washdown system drained. Connect the solar panel wash downs system to the building's domestic water supply inside the building at the service entrance. Provide with isolation valve to isolate washdown system from building supply for maintenance purposes.
- 12.7.2 Bid Option 1: Expanding battery energy storage. No plumbing work required.
- 12.7.3 Bid Option 2: Provide an automatic cleaning system for the additional PV solar panel array at the Incinerator Building. This system will include polyethylene tube lines, a control unit which includes a 130 micron disk filter, timer, and zone valve assemblies. A 3/4" sprinkler nozzle must be attached to each solar panel. The control unit must be located on a light gauge metal support. The nozzle shall be attached to the solar panel via a stainless-steel clip. Sprinkler nozzles must provide 0.25 GPM and shall be zoned with a maximum of 20 nozzles per zone. The washdown system must be capable of being programmed to operate 15 minutes per day with a user-adjustable schedule. Freeze protection must be provided through manual shut off of the water supply and the washdown system drained. Connect the solar panel wash downs system to the building's domestic water supply inside the building at the service entrance. Provide with isolation valve to isolate washdown system from building supply for maintenance purposes.

- 12.7.4 Bid Option 3: Provide an automatic cleaning system for the PV solar panel array at the O&M Building. This system will include polyethylene tube lines, a control unit which includes a 130 micron disk filter, timer, and zone valve assemblies. A 3/4" sprinkler nozzle must be attached to each solar panel. The control unit must be located on a light gauge metal support. The nozzle shall be attached to the solar panel via a stainless-steel clip. Sprinkler nozzles must provide 0.25 GPM and shall be zoned with a maximum of 20 nozzles per zone. The washdown system must be capable of being programmed to operate 15 minutes per day with a user-adjustable schedule. Freeze protection must be provided through manual shut off of the water supply and the washdown system drained. Connect the solar panel wash downs system to the building's domestic water supply inside the building at the service entrance. Provide with isolation valve to isolate washdown system from building supply for maintenance purposes.
- 12.7.5 Bid Option 4: Provide an automatic cleaning system for the PV solar panel array at the north and west single-loaded parking lot canopies. This system will include polyethylene tube lines, a control unit which includes a 130 micron disk filter, timer, and zone valve assemblies. A 3/4" sprinkler nozzle must be attached to each solar panel. The control unit must be located on a light gauge metal support. The nozzle shall be attached to the solar panel via a stainless-steel clip. Sprinkler nozzles must provide 0.25 GPM and shall be zoned with a maximum of 20 nozzles per zone. The washdown system must be capable of being programmed to operate 15 minutes per day with a user-adjustable schedule. Freeze protection must be provided through manual shut off of the water supply and the washdown system drained. Connect the solar panel wash downs system to the new domestic water supply routed to the canopy.
- 12.7.6 Bid Option 5: Provide an automatic cleaning system for the PV solar panel array at the double-loaded parking lot canopies. This system will include polyethylene tube lines, a control unit which includes a 130 micron disk filter, timer, and zone valve assemblies. A 3/4" sprinkler nozzle must be attached to each solar panel. The control unit must be located on a light gauge metal support. The nozzle shall be attached to the solar panel via a stainless-steel clip. Sprinkler nozzles must provide 0.25 GPM and shall be zoned with a maximum of 20 nozzles per zone. The washdown system must be capable of being programmed to operate 15 minutes per day with a user-adjustable schedule. Freeze protection must be provided through manual shut off of the water supply and the washdown system drained. Connect the solar panel wash downs system to the new domestic water supply routed to the canopy.

12.8 SPECIFICATIONS

The following list of specifications is anticipated for this project. The list is not comprehensive. provide all specifications required to adequately describe the project and all materials to be used and installed. Edit and submit the following UFGS as defined in Section 01 10 12, Design After Award, using the latest comparable UFGS version:

22 00 00 PLUMBING, GENERAL PURPOSE

PART 13 FIRE PROTECTION

13.1 FIRE PROTECTION OVERVIEW

The fire protection design requirements and criteria for the work indicated herein, shall be in accordance with the requirements of this section, applicable National Fire Protection Association (NFPA) standards and codes, USACE Engineering Manual EM-385-1-1, and Appendix exhibits. All criteria documents shall be the current edition at the time of contract award. Where there is a conflict in criteria, the most stringent shall apply.

All work associated with the fire protection system installation on this project shall be completed under the supervision of and certified by the D/B Contractor's (DBC's) Qualified Fire Protection Engineer (QFPE). The QFPE shall be an individual registered professional engineer who has passed the fire protection engineering written examination administered by the National Council of Examiners for Engineering and Surveys (NCEES).

The contractor shall engage the services of a Qualified Fire Protection Engineer for this project. The Qualified Fire Protection Engineer (QFPE) must be an integral part of the design team and shall be involved in every aspect of the design, construction, and testing/commissioning, as it relates to the fire protection systems. The QFPE shall prepare a fire protection design analysis summarizing applicable fire protection requirements and approach for the project. The design analysis shall be submitted with each design submittal.

The QFPE shall be regularly engaged in the design and installation of the type and complexity of system specified in the contract documents and shall have served in a similar capacity for at least three systems that have performed in the manner intended for a period of not less than 6 months.

All fire protection devices shall be UL Listed and Approved for the intended use.

All fire suppression and fire alarm systems shall be electronically supervised and provide a signal to the remote monitoring station.

The existing incinerator building is being converted to a training building that will be used on a periodic basis (not continuous use). A fire sprinkler system is not required in the training building.

A new Energy Storage System (ESS) battery/equipment cabinet is being provided on site. The ESS battery/equipment cabinet shall be provided with fire suppression and fire alarm/detection systems. The equipment manufacturer shall provide a fire suppression and fire alarm system integrated within the equipment enclosure.

Considering the height and size of the buildings involved on this project, standpipe systems (NFPA 14) are not required.

Provide seismic sway bracing for new fire suppression systems.

13.2 FIRE SUPPRESSION DESIGN REQUIREMENTS

The QFPE shall develop applicable fire suppression system design documents, calculations, design analysis, and specifications, for Government review and approval.

13.2.1 Fire Protection Water Supply

The fire protection water supply for this site is existing and is anticipated to remain as-is. The fire protection water supply consists of an elevated water storage tank that serves site domestic and fire protection system supply.

A waterflow test (fire hydrant flow test) was performed using the existing fire hydrants south\west of the existing incinerator building on September 11th, 2024. Results of the waterflow test can be found in the appendices. If required for fire suppression systems design, the QFPE shall perform a new waterflow test that is current with the project hydraulic calculation design submittals. Hydraulic calculations shall be based on a waterflow testing that was performed no more than 6 months prior to submission of the calculations.

13.2.2 Portable Hand-Held Fire Extinguishers

Portable hand-held fire extinguishers for personnel use shall be provided throughout the Training Building, as required by NFPA 101. A portable fire extinguisher shall be provided at the ESS canopy structure. The fire extinguisher at the ESS canopy structure shall be mounted in a weather resistant fire extinguisher cabinet. Extinguishers shall be installed in accordance with NFPA 10.

13.2.3 Fire Hydrants

Existing fire hydrants on site are to remain as-is, unless otherwise noted.

13.3 CONSTRAINTS

The Contractor is advised that the concept layout and requirements indicated in these specifications and shown on the criteria drawings are intended to describe the overall concepts and scopes of work. Any proposed changes from the concept criteria shall be submitted for review and approval.

13.4 FIRE DEPARTMENT BUILDING ACCESS

Fire Department access provisions for the buildings and vehicle access to the site are existing and shall remain as-is.

13.5 ENERGY STORAGE SYSTEM (ESS) BATTERY/EQUIPMENT CABINET FIRE PROTECTION REQUIREMENTS

The ESS battery/equipment cabinet enclosure shall be provided with all the necessary features to comply with NFPA 855 for the battery technology-specific requirements. Depending on battery technology chosen, features shall be integrated into the enclosure/equipment by the equipment supplier and may include, but are not necessary limited to, the following:

- a. Mechanical Ventilation
- b. Gas Detection
- c. Fire Suppression System
- d. Fire Alarm and Detection System
- e. Deflagration/Explosion Venting
- f. Hazardous Material & Emergency Communication Signage
- g. Emergency equipment power shutdown, de-energizing, provisions
- h. Battery Technology-Specific Requirements

13.6 DESIGN-BUILD CONTRACTOR PROVIDED SPECIFICATIONS

The DBC shall edit and submit, as applicable to the project, UFGS specifications. The list below is a summary of fire protection specifications that may be applicable on this project. The list is not considered comprehensive. The DBC will provide all specifications required to adequately describe the project and all materials to be used.

07 84 00	Firestopping
10 44 16	Fire Extinguishers

13.7 POST CONSTRUCTION GOVERNMENT PERSONNEL TRAINING

The DBC shall provide onsite training by a Fire Protection Specialist for operation and maintenance personnel as designated by the contracting officer.

The Fire Protection Specialist shall be a NICET III certified technician (in the applicable system field), or equipment manufacturer's representative.

Training shall be provided for a period of 4 hours of normal working time and shall start after the system is functionally complete and after the Final Acceptance Test. The Onsite Training shall cover all of the items contained in the approved Operating and Maintenance Instructions. Training shall at a minimum result in comprehensive training in the operation, maintenance, troubleshooting and diagnostic testing of the installed systems.

A detailed training plan shall be submitted and approved prior to scheduling any training. The training plan shall provide specific intervals for the training blocks, location of training, and a detailed breakdown of the training objectives. Once approved, the contractor shall provide a minimum 14 day notice of the proposed training date.

PART 14 ELECTRONIC, FIRE ALARM AND MASS NOTIFICATION SYSTEMS

Refer to Section 01 10 10 Part 2 for design reference criteria. Refer to appendices for the additional design requirements.

14.1 Telephone and LAN systems

Telephone and LAN systems are not included in this project scope except where required in other sections of this RFP package.

Any existing telephone or LAN systems in the existing facility must be maintained and protected during construction unless they solely serve existing equipment which is being removed as part of this project.

14.2 GROUNDING

Telephone and LAN grounding systems are not included in this project scope except where required in other sections of this RFP package.

Any existing telephone or LAN grounding systems in the existing facility must be maintained and protected during construction unless they solely serve existing equipment which is being removed as part of this project.

14.3 FIRE DETECTION AND ALARM SYSTEM

The fire alarm system design requirements and criteria for the work indicated herein, shall be in accordance with the requirements of this section, applicable National Fire Protection Association (NFPA) standards and codes, USACE Engineering Manual EM-385-1-1, and Appendix exhibits. All criteria documents shall be the current edition at the time of contract award. Where there is a conflict in criteria, the most stringent shall apply.

All work associated with the fire protection system installation on this project shall be completed under the supervision of and certified by the D/B Contractor's (DBC's) Qualified Fire Protection Engineer (QFPE). The QFPE shall be an individual registered professional engineer who has passed the fire protection engineering written examination administered by the National Council of Examiners for Engineering and Surveys (NCEES).

The DBC shall engage the services of a Qualified Fire Protection Engineer for this project. The Qualified Fire Protection Engineer (QFPE) must be an integral part of the design team and shall be involved in every aspect of the design, construction, and testing/commissioning, as it relates to the fire protection systems. The QFPE shall prepare a fire protection design analysis summarizing applicable fire protection requirements and approach for the project. The design analysis shall be submitted with each design submittal. The analysis shall be submitted with each design submittal.

The QFPE shall be regularly engaged in the design and installation of the type and complexity of system specified in the contract documents, and shall have served in a similar capacity for at least three systems that have performed in the manner intended for a period of not less than 6 months.

14.3.1 Existing Fire Alarm and Detection System

There is an existing Silent Knight 5820XL addressable Fire Alarm System (FAS) serving the existing incinerator building. The existing Silent Knight 5820XL panel is located in the adjacent Toxic Agent Training Building. Fire alarm circuits extent into the incinerator building by way of an overhead piping/conduit rack between buildings. The existing Silent Knight FAS shall remain and be modified, as required, to coordinate with renovation work associated with this project.

All existing FAS devices, wiring, and conduit, shall be removed in the existing incinerator building. Remove the existing fire alarm system back to the existing terminal cabinet located in the existing control room.

The existing communicator currently used to report FAS conditions to the remote monitoring station is anticipated to be reused to serve the system modifications.

AMENDMENT 0003

14.3.2 Fire Alarm and Detection System

The existing Silent Knight FAS shall remain and be modified, as required, to coordinate with renovation work associated with this project.

A new fire alarm and detection system shall be provided in the new Training Building- **as an extension of the fire alarm system in the Toxic Agent Training Building. Provide a dedicated FACP panel in the new Training Building (B801D) that reports back to the Toxic Agent Training Building FACP.**

A new fire alarm and detection system shall be provided in the Energy Storage System (ESS) battery/equipment cabinet. The ESS equipment manufacturer shall provide a fire suppression and fire alarm system integrated within the equipment enclosure. The ESS battery/equipment cabinet fire alarm system shall report alarm and trouble/supervisory conditions to the Training Building FACP/system.

The following summarizes the minimum scope of work on the project:

1. Remove the existing fire alarm initiation and notification devices in the existing incinerator building.
2. Remove all Fire Alarm System (FAS) conduit and wiring in the existing incinerator building back to the existing fire alarm terminal cabinet located in the existing control room.
3. Provide new manual pull stations at each new exterior exit as required by NFPA 101.
4. Provide a new smoke detector(s) above new fire alarm control equipment, in accordance with NFPA 72.
5. Provide a new notification device power supply panel to serve the new training building. Locate the new notification device power supply panel adjacent to the existing fire alarm terminal cabinet (or equivalent approved location).

6. Provide new notification devices (horns / strobes) throughout the new training building, as required by NFPA 72. Use Public Mode criteria for notification device layout, as defined in NFPA 72.
7. Provide a new fire alarm and detection system in the Energy Storage System (ESS) battery/equipment cabinet enclosure. The ESS equipment manufacturer shall provide a fire suppression and fire alarm system integrated within the equipment enclosure. Extend fire alarm communication circuit(s), as required, to connect the ESS battery/equipment cabinet enclosure to the Toxic Training Building FACP for monitoring of alarm and trouble/supervisory conditions.
8. Update the existing Silent Knight 5820XL system (in the toxic agent training building) programming, as required, to incorporate new system devices, as required by NFPA 72.
9. Update the offsite remote reporting communication system to incorporate new system devices, as required by NFPA 72.

AMENDMENT 0003

14.3.3 New System Minimum Requirements

Alarm initiating devices shall be connected to Class B signal line circuits (SLC) or Class B initiation device circuits (IDC), in accordance with NFPA 72. Alarm notification appliances shall be connected to Class B indicating appliance circuits (IAC), in accordance with NFPA 72. Locations of audible and visual appliances, for public mode operation, shall comply with NFPA 72.

All system wiring shall be provided and installed in a dedicated conduit system. The conduit system shall be factory-painted "red" color.

Provide point-to-point riser diagrams showing the control panel, all equipment, zones, devices, communicators, and interfaces to other systems (HVAC, fire suppression, access control system interface, etc., as applicable).

The locations of all system devices and components shall be shown on the submitted design documents for AHJ review.

Primary power to new fire alarm control equipment shall be provided from a lockable breaker. Backup power (secondary power source) shall be provided by batteries of sufficient size to provide the required backup power load for the required backup power duration.

All visual notification devices shall be synchronized as per ABA requirements.

Upon detection of any fire alarm system alarm, supervisory, or trouble, conditions the fire alarm system shall transmit the system signal to the remote supervising station.

All software, software locks, special tools and other proprietary equipment required to maintain, add devices to or delete devices from the system or test the system shall be furnished to the Government prior to final inspections of the system.

All original manufacturers' software for the system shall be provided with the project closeout documentation. The following requirements shall apply: all software, hardware, passwords, etc. required for the maintenance, testing, and reprogramming of the fire alarm system shall be unconditionally turned over to the Government, and the above noted software, hardware, passwords, etc. shall become the unconditional property of the Government. Software turned over to the Government shall be the original manufacturers licensed software on CD (or DVD) with jeweled case; copies of software shall not be acceptable. Software and CD, or DVD, shall be brand new and unused.

14.3.4 Mass Notification System

A mass notification system is not required in the new training.

14.3.5 Constraints

The Contractor is advised that the concept layout and requirements indicated in these specifications and shown on the criteria drawings are intended to describe the overall concepts and scopes of work. Any proposed changes from the concept criteria shall be submitted for review and approval.

14.3.6 Design-Build Contractor Provided Specifications

The DBC shall edit and submit, as applicable to the project, UFGS specifications. The list below is a summary of fire protection specifications that may be applicable on this project. The list is not considered comprehensive. The DBC shall provide all specifications required to adequately describe the project and all materials to be used:

07 84 00	Firestopping
28 31 70	Interior Fire Alarm System, Addressable

PART 15 ELECTRICAL SYSTEMS

15.1 CODES AND REFERENCES

Electrical systems will be provided for the project based on the Statement of Work requirements and applicable codes and standards. This work shall include the demolition of select mechanical and electrical equipment in the existing Incinerator Building 801D and the installation of a new photovoltaic solar array system with the off-grid battery power source. New power devices and branch circuits will be provided for the renovated incinerator building. New lighting fixtures and associated lighting controls will also be provided for the renovated incinerator building.

A new photovoltaic solar array system with the off-grid battery power source will be configured to provide power to the renovated Incinerator building, the existing Northville training complex, and the existing O&M building, as a primary power source with the utility power as backup system. The new photovoltaic solar array system will consist of multiple solar panel arrays and associated inverters, battery storage system, microgrid controller equipment, new power distribution equipment, and the associated power protection and code required electrical equipment. The new solar power arrays will be provided as follows:

Base Bid: Solar panel array installed on the existing roof of the existing Incinerator Building 801D. The base bid will also include a battery storage system comprising the installation of a battery, microgrid controller equipment, and the new power distribution equipment.

Bid Option #1: Additional battery installation at the battery storage system.

Bid Option #2: Additional solar panel array installed on the new roof of the Canopy addition to the existing Incinerator Building 801D.

Bid Option #3: Additional solar panel array installed on the existing roof of the existing Maintenance Building 801E.

Bid Option #4: Additional solar panel array installed on the roof of the new structure at the perimeter of the existing parking lot.

Bid Option #5: Additional solar panel array installed on the roof of the new structure at the center of the existing main parking lot.

See Section 15.7 for additional requirements.

15.2 DESIGN CRITERIA

15.2.1 New Electrical Panelboards

The electrical distribution and lighting panelboards will utilize circuit breaker type, group mounted equipment. Circuit breakers utilized as electrical panelboard main circuit breaker, all circuit breakers in distribution type panelboards, and all circuit breakers 100A and larger will utilize electronic trip units with field adjustable setting to ensure selective coordination (L-Long, S-Short, I-Instantaneous, and G-Ground Fault

settings, as indicated on the drawings). The circuit breakers in the branch type panelboards will be thermal magnetic type.

Actual equipment electrical loads and demand factors, where known, will be used for electrical calculation purposes. Where loads are unknown, the contractor will utilize loading and demand factors outlined in NFPA 70. Branch circuits feeding receptacles of unknown loads will be limited to 1200VA per circuit. The interior electrical distribution system will be designed with a minimum of 20% excess load capacity in all switchboards, panelboards, and feeders after all load and demand factors have been applied to the electrical calculations. Additionally, all distribution panelboards will have 20% excess physical space for future use. All electrical equipment will be located in the main electrical room unless noted otherwise.

Surge protection devices will be provided at all distribution and branch circuit panelboards. Surge protection devices must not be installed inside a panelboard. All surge protection devices will be installed externally to panelboards and in separate enclosures.

15.2.2 Branch Wiring Devices

New branch circuits will be provided.

Wiring will be copper conductors. The use of 75 degree C (minimum) insulated conductors is required and will be stated on the project drawings. Branch circuits will have an individual neutral. All wiring will be provided and installed in conduit. Wiring system will consist of insulated single conductors provided and installed in raceways as follows:

- a. Galvanized rigid steel conduit in exposed areas subject to physical damage, concrete, masonry and damp or wet locations.
- b. Electric metallic tubing (EMT) in concealed areas and exposed where not subject to physical damage. All EMT conduit will have steel compression type fittings.
- c. Non-metallic conduit (Type 40 PVC) underground and below concrete slabs.

Wiring will be concealed within the walls in all areas except equipment areas. Conduit will be labeled with source and destination. Empty conduit will have nylon pull rope installed in it with 10 additional feet of pull rope coiled at each end. An equipment grounding conductor will be provided and installed with all feeders and with all branch circuit wiring to receptacles and equipment. Conductors will be a minimum size of 12 AWG. The ampacity de-rating for number of conductors in raceway and ambient temperature will be based upon the National Electrical Code. The percentage of conductor fill in conduit will be based upon National Electrical Code: one conductor maximum fill of 53 percent; two conductor maximum fill of 31 percent; and more than two conductors maximum fill of 40 percent.

Buried electrical warning tape will be provided 12-inch below grade for all new underground electrical circuits. All new underground electrical circuits will be buried at a minimum of three feet below grade.

Circuits will be sized to limit voltage drops to no more than 5% at the worst condition. The design goals will be to limit voltage drops to 2% on feeders

and 3% on branch circuits. Circuits serving convenience receptacles will have not more than six receptacles per 20 Amp circuit. A maximum of four workstations will be connected to one circuit.

Provide heavy-duty, non-fused disconnect switches for local disconnecting means at mechanical equipment and other hard-wired connections. All disconnect switches will be non-fused, heavy-duty type. Exterior disconnect switches will be NEMA 3R stainless steel.

15.2.3 Receptacles

Provide new wiring devices throughout the renovated Incineration Building 801D. Wiring devices will be provided to meet the requirements of the spaces. General purpose convenience outlets that are specification grade, 20 amperes, 125V NEMA 5-20R, duplex will be provided. All circuits will be in EMT, liquid tight or rigid conduit; no MC cable is allowed except for lighting fixtures (limited to 6-feet) or UL equipment supplied with flexible conductor. In addition to the location requirements specified by NFPA 70, locate general purpose and dedicated outlets in accordance with the following:

- a. Mechanical Equipment: Provide receptacle within (15-feet) of mechanical equipment on the interior and exterior of buildings.
- b. Training Area: Provide power outlets every 12' of wall space.
- c. Building Exterior: One receptacle for each external wall and located within 25 feet of mechanical equipment, GFI protected and weatherproof in use type.
- d. Provide power connections to accommodate all other construction trades.

15.2.4 Interior Lighting

Interior lighting and lighting controls throughout the existing Incinerator Building 801D will be replaced.

Lighting levels for all areas to be provided in accordance with UFC 5-530-01 and the Illuminating Engineering Society (IES) recommended levels as average maintained levels of illumination unless noted otherwise. Lighting levels will be provided as follows:

Training Bay 50 FC at floor

Provide new luminaires as follows:

Luminaires in Training Bay will be LED source high-bay luminaires, suspended from ceiling structure. Stem mounted luminaires will be provided. Redundant support will be provided at every luminaire to ensure that the failure of a single supporting component does not result in luminaire falling.

New exit luminaires will be provided. Coordinate with Life Safety.

New dedicated emergency egress luminaires will be provided with integral battery pack.

Interior luminaires will be 4000K color temperature.

All interior LED source luminaires will be provided with 0-10V dimming capability.

All new/renovated spaces will be provided with manual ON/OFF lighting switch controls. All spaces are special occupancy areas where the occupants are operating machinery or equipment, and the automatic controls may create a health risk for the occupant.

Provide point-by-point calculations for general and egress lighting. General and egress lighting calculations for each area will utilize data from the actual fixture to be used. The engineer designing the lighting system will maintain uniformity ratios equal to or better than that recommended by the IES standards.

15.2.5 Exterior Lighting

Exterior lighting and lighting controls for the exterior of the existing Incinerator Building 801D will be replaced.

Lighting levels for all areas will be provided in accordance with Illuminating Engineering Society (IES) recommended levels as average maintained levels of illumination unless noted otherwise.

Luminaires at exterior exit doors will be LED source wall sconce, surface mounted 24-inches above the exit door. Exterior building mounted lights located at egress doors will be provided with battery backup for emergency egress lighting. Provide a minimum maintained horizontal luminance of 0.2 foot-candles measured at grade with a maximum Max:Min ratio of 20:1.

The building perimeter illumination will be provided with LED source wall mounted wall packs.

All exterior lighting fixtures will be 4000K, full cut-off type to reduce glow and glare.

The exterior lighting will be controlled by photocell in combination with a lighting contactor.

15.2.6 Grounding

Existing grounding electrode system in the existing Incinerator Building 801D will be remain. Provide additional grounding as required for installation of the new solar power systems and connect to the existing grounding system as required. Coordinate the requirements of the grounding electrode system with the lightning protection system. Grounding will meet the requirements of Article 250 of the National Electric Code and ANSI 607-A. Provide bonding jumpers at all separately derived systems and equipment grounds.

Provide grounding testing, measurements, and report.

15.3 Existing Conditions

15.3.1 Incinerator Building 801D

Electrical power is provided from the existing Toxic Agent Training Building from the existing switchboard FPEQ via 400A circuit breaker feeding the existing Motor Control Center MCC2A in the Control Office of the existing Incinerator Building. MCC2A is 480Y/277V, 600A bus, 3-phase, 4 wire system motor control center protected by 400A main circuit breaker, manufactured by Allan Bradley, 2100 series. MCC2A will remain.

Secondary electrical distribution system is fed from MCC2A and consists of lighting and branch panelboards and dry type step-down power transformers. Secondary electrical distribution equipment appears to be adequate for current use and in working order.

Existing branch power circuits are in fair condition and appear adequate for current use of spaces and in working order. Existing power receptacles layout and quantities appear adequate for current use of spaces and in working order.

Existing lighting fixtures and lighting control systems appear to meet all applicable codes and requirements.

15.3.2 Northville Complex

Electrical power is provided from the existing Toxic Agent Training Building from the existing panelboard CC1 via 100A circuit breaker feeding the existing 75 KVA dry-type power transformer in the Electrical Room of the existing Sub Shop Building. The transformer is protected by a 100A safety disconnect. The transformer then feeds 200A safety disconnect which protects electrical panelboard MDP. MDP is 208Y/120V, 225A bus, 3-phase, 4 wire system panelboard protected by 225A main circuit breaker, manufactured by EATON, PRL1X type. MDP will remain.

Secondary electrical distribution system consists of additional electrical panelboards throughout the Northville complex. Each building in the complex is served by dedicated load center served from panelboard MDP. Secondary electrical distribution equipment appears to be adequate for current use and in working order. Secondary electrical distribution equipment will remain.

Existing branch power circuits in all buildings are in fair condition and appear adequate for current use of spaces and in working order. Existing power receptacles layout and quantities in all buildings appear adequate for current use of spaces and in working order. Existing electrical devices and associated branch circuits will remain.

Existing lighting fixtures and lighting control systems appear to meet all applicable codes and requirements. Existing lighting systems will remain.

15.3.3 Maintenance Building 801E

Electrical power is provided from the existing Toxic Agent Training Building from the existing switchboard PPM via 250A circuit breaker feeding the existing Motor Control Center MCC4 in the Electrical Room of the existing Maintenance Building. MCC4 is 480Y/277V, 600A bus, 3-phase, 4 wire system motor control center protected by 250A main circuit breaker, manufactured by Square D, Model 4 control center. MCC4 will remain.

Secondary electrical distribution system is fed from MCC4 and consists of lighting and branch panelboards and dry type step-down power transformers. Secondary electrical distribution equipment appears to be adequate for current use and in working order. Secondary electrical distribution equipment will remain.

Existing branch power circuits are in fair condition and appear adequate for current use of spaces and in working order. Existing power receptacles layout and quantities appear adequate for current use of spaces and in working order. Existing electrical devices and associated branch circuits will remain.

Existing lighting fixtures and lighting control systems appear to meet all applicable codes and requirements. Existing lighting systems will remain.

15.4 Proposed Demolition - Incinerator Building 801D

Main electrical motor control center MCC2A located in the existing Control Room will remain.

All electrical distribution equipment and electrical devices located in Control Room and in Training Bay east of Control Room will remain.

Existing panelboard HTA3 and the associated 15 KVA dry-type power transformer located at the northwest corner of the existing building will remain be demolished. The existing feeder to MCC2A will be demolished.

The existing branch circuits and power receptacles in the areas of construction for this project will be removed along with all associated conduits and boxes back to serving electrical panelboards.

The existing lighting fixtures and associated lighting controls in the areas of construction for this project will be removed along with all associated conduit and boxes back to serving electrical panelboards.

15.5 Proposed Construction

15.5.1 Incinerator Building 801D

15.5.1.1 Power

A new electrical distribution system will be provided for the renovated Training Bay. The new distribution system will be connected in such way that it can draw power from either the new photovoltaic array or the existing utility grid electrical distribution system.

A new smart panelboard SPI with branch circuit monitoring will be provided in the existing Electrical Room, 480Y/277V, 3-phase, 4-wire, 800A bus. Panelboard SPI will be the interface between the new photovoltaic array systems and power distribution equipment in the renovated Incinerator Building and the existing power distribution in Northville and the existing Maintenance Building 801E. A new external surge protection device will be provided for the panelboard SPI.

A new automatic transfer switch ATS-I will be provided in the existing Electrical Room, 480/277V, 3-phase, 4-pole, 125A, in NEMA 1 enclosure. New surface mounted feeder will be provided from the existing motor control center MCC2A, 3#6, #10G, 1" C. Provide a new 45A/3-pole circuit breaker in the existing motor control center MCC2A. New surface mounted feeder will be provided from the new panelboard SPI, 3#6, #10G, 1" C. Provide a new 45A/3-pole circuit breaker in the new panelboard SPI.

A new dry type power transformer TXI will be provided to connect new panelboard IPV. Transformer TXI will be 30 KVA, 480V - 208Y/120V, located in the existing Electrical Room. A new feeder will be provided from the new automatic transfer switch ATS-I, 3#6, #10G, 1" C.

A new electrical panelboard IPV will be provided in the existing Electrical Room, 208Y/120V, 3-phase, 4-wire, 100A main circuit breaker, fed from the new dry type power transformer TXI. New surface mounted feeder will be provided from the new transformer TXI, 4#1, #6G, 1-1/2" C. A new external surge protection device will be provided for panelboard IPV.

New power devices and branch wiring will be provided in renovated Training Bay. A dedicated duplex power receptacle will be provided every 12' on the available wall space. All new power devices will be installed at 48" minimum mounting height. Power receptacles will be connected to the new electrical panelboard IPV via GFCI protected circuit breakers.

Power connections will be provided for the new prop training equipment, 30A, 208V 3-phase power circuit with 30A disconnect inside NEMA 4X enclosure.

Power connections will be provided for all new mechanical fans. Provide new branch circuits and safety disconnect switches.

Power connections will be provided for all new fire alarm and mass notification system.

15.5.1.2 Lighting

New LED source luminaires and new lighting controls will be provided throughout the renovated Training Bay.

15.5.1.3 Lightning Protection System

The lightning protection system on the existing Incinerator Building is existing and will remain.

A new conventional lightning protection system will be provided for the new covered storage addition to the existing Incinerator Building. New lightning protection addition will include new strike termination devices, new conductors, new ground terminals, new interconnecting conductors, new surge suppression devices, additional counterpoise loop, and other connectors and fittings required for a complete and usable system. New test wells for the lightning protection systems with 3/4-inch by 10-foot ground rods at each test well will be provided. Each lightning protection system grounding electrode will be bonded to the new grounding system counterpoise. The new lightning protection system addition will tie to the existing system. The entire system will meet the UL Lightning Protection Inspection Certificate

requirements to meet NFPA 780 latest edition and UL 96A. Lightning Protection Systems shall not void the roof warranty. Appropriate precautions will be observed at connections with dissimilar metals. Roof mounted components of the lightning protection system will be coordinated with the roofing system manufacturer. The complete lightning protection systems for this facility will be UL inspected and provided with a UL Master Label. The lightning protection system will be bonded to the service entrance grounding electrode system.

15.5.2 Northville Complex

The existing main electrical panelboard MDP serves power to the entire Northville complex. Panelboard MDP is located inside the Electrical Room at the existing Sub Shop Building. Provisions will be made to reconnect the existing panelboard MDP in such a way that it can draw power from either the new photovoltaic array or the existing utility grid electrical distribution system.

A new automatic transfer switch ATS-N will be provided in the existing Electrical Room at the existing Sub Shop Building, 480/277V, 3-phase, 4-pole, 125A, in NEMA 1 enclosure. A new feeder will be provided from the existing electrical panelboard CC1, 3#1, #6G, 1-1/2"C. Route feeder surface on the existing exterior cable tray from the existing Toxic Agent Training Building to the Northville Complex, then underground to the existing electrical Room at the existing Sub Shop Building, to the new ATS-N. Connect the new feeder to the existing 100A circuit breaker in panelboard CC1. A new feeder will be provided from the new electrical panelboard SPI in Incinerator Building, 3#1/0, #4G, 2"C. Route feeder surface on the existing exterior cable tray from the existing Incinerator Building to the Northville Complex, then underground to the existing electrical Room at the existing Sub Shop Building, to the new ATS-N. Provide new 100A/3-pole circuit breaker in the new panelboard SPI. New surface mounted feeder will be provided from the existing 100A safety disconnect in the Electrical Room at Sub Shop Building to the new ATS-N, 3#1, #6G, 1-1/2"C.

15.5.3 Maintenance Building 801E

The existing main electrical motor control center MCC4 serves power to the Maintenance Building 801E. MCC4 is located inside the main Electrical Room. Provisions will be made to reconnect the existing MCC4 in such a way that it can draw power from either the new photovoltaic array or the existing utility grid electrical distribution system.

A new automatic transfer switch ATS-M will be provided in the existing main Electrical Room, 480/277V, 3-phase, 4-pole, 400A, in NEMA 1 enclosure. A new feeder will be provided from the existing electrical switchboard PPM, 4#300, #3G, 3"C. Route feeder surface on the existing exterior cable tray from the existing Toxic Agent Training Building to the Northville Complex, then to the existing Electrical Room at the existing Maintenance Building, to the new ATS-M. Connect new feeder to the existing 250A circuit breaker in switchboard PPM. New feeder will be provided from the new electrical panelboard SPI in Incinerator Building, 4#250, #4G, 3"C. Route feeder surface on the existing exterior cable tray from the existing Incinerator Building to the existing Maintenance Building, then to the existing Electrical Room to the new ATS-M. Provide a new 250A/3-pole circuit breaker

in the new panelboard SPI. New surface mounted feeder will be provided from the existing motor control center MCC4 in the Electrical Room to the new ATS-M, 4#250, #4G, 3"C.

15.6 Photovoltaic (PV) Solar System

A new photovoltaic (PV) solar system with the off-grid battery power system will be provided and configured to provide power to the renovated Incinerator Building 801D, the existing Northville training complex, and the existing Maintenance Building 801E, as a primary power source with the utility power as backup system. The new PV array system will consist of multiple PV solar arrays, mounting systems, inverters, micro-grid control panels, battery storage, charge controllers, and all required electrical safety equipment per NFPA 70. A new PV solar arrays will be installed at multiple locations as follows:

Base Bid: Solar panel array installed on the existing roof of the existing Incinerator Building 801D. The base bid will also include a battery storage system comprising the installation of a battery, microgrid controller equipment, and the new power distribution equipment.

Bid Option #1: Additional battery installation at the battery storage system.

Bid Option #2: Additional solar panel array installed on the new roof of the canopy addition of the existing Incinerator Building 801D.

Bid Option #3: Additional solar panel array installed on the existing roof of the existing Maintenance Building 801E.

Bid Option #4: Additional solar panel array installed on the roof of the new structure at the perimeter of the existing parking lot.

Bid Option #5: Additional solar panel array installed on the roof of the new structure at the center if the existing main parking lot.

The new solar system will be connected into the existing electrical service via the new smart panelboard SPI. Panelboard SPI will provide off-grid power only and feed new automatic transfer switches serving each building as described in Section 15.6. Micro-grid controller will monitor status and charge of the new battery back-up system and direct power made by solar system to each building, as needed and as pre-programmed. The intent is to provide power to the new panelboard IPV in the Incinerator Building 801D first. If there is adequate charge at the battery bank, the power will then flow to the existing panelboard MDP in the Northville complex. If there is adequate charge at the battery bank, the power will then flow to the existing motor control center MCC4 in the Maintenance Building 801E. The new micro-grid controller will be able to shed any of three loads and allow the new solar system to recharge the battery bank. In case that any load is disconnected from the new panel SPI, the load will automatically be reconnected to the commercial grid existing electrical service. The electrical power distribution components required for the scheme are described in Section 15.6.

AMENDMENT 0003

15.6.1 Base Bid

PV solar array will be monocrystalline type with each solar panel having capacity of minimum 500W. Basis of design uses 4' x 6' solar panels for the approximate design quantities as listed below. The array will be installed on the existing roof of the existing Incinerator Building 801D. Provide fixed roof mount installation. The installation area will accommodate approximately 162 solar panels. The total capacity of the PV array will be 81 KW producing approximately 109,673 KWH/year. See Architectural Drawings for the concept installation requirements.

PV solar array will be mounted on the existing south facing sloped roof with 2/12 pitch. The total tilt angle of each PV module will be south oriented at 24 degrees with respect to the grade. All required mounting structures will be provided for each PV array module.

A new inverter (I1) will be provided, string type, 96% efficiency, 480VAC, 125 KW, NEMA 3R enclosure. Locate new inverter exterior, adjacent to the existing Incinerator Building 801D. Provide all required connections from the inverter to the combiners and charge controllers. Provide communications and auxiliary outputs to monitor and send data. The inverter will be capable of network communication to allow for PV array performance monitoring. Provide fiberoptic connection to micro-grid controller (MCP) inside 1" conduit, routed underground. Provide new 200A/3-pole fused safety disconnect with 200A fuses, NEMA 3R, located adjacent to the inverter I1. Provide a new feeder to the new panel SPI, via new disconnect, 3#4/0, #4G, 2"C. Route feeder underground.

A new battery storage will be provided, *lithium iron phosphate type*, 150 KVA rated AC output, 300 KWH capacity, 480 VAC, 3-phase, 3-wire line connection, 60 Hz, <5% Harmonics, unity power factor, ModBus TCP/IP connection. Battery energy storage system will be premanufactured and self-enclosed container with minimum NEMA 3R rating, located exterior. Provide power connection feeder to the new inverter PCS-1. Provide control and monitor wiring to micro-grid controller MCP.

A charge controller will be provided to manage the charging and discharging of the new battery storage bank. Provide all required connections from the inverter and battery storage bank.

A new micro-grid controller (MCP) will be provided to manage and operate the complete system. NEMA 3R enclosure. Locate the new MCP exterior, adjacent to the new battery storage enclosure. Provide all required connections from the MCP to the inverter PCS, battery storage system, and new panelboard SPI.

A new power conversion system inverter (PCS-1) will be provided, string type, 96% efficiency, 480VAC, 125 KW, NEMA 3R enclosure. Locate the new inverter exterior, adjacent to the new battery storage enclosure. Provide all required connections from the inverter to the micro-grid controller and battery storage system. Provide a new 200A/3-pole fused safety disconnect with 200A fuses, NEMA 3R, located adjacent to the inverter PCS-1. Provide a new feeder to the new panel SPI, via new disconnect, 3#4/0, #4G, 2"C. Route feeder underground.

A communication and annunciator panel will be provided in the existing Control Room in the existing Incinerator Building. Monitoring will be string inverter based.

Provide UL 4703 listed PV wiring. Provide grounding in accordance with NFPA 70.

Provide ambient temperature sensor. The sensor will be located near the array but not on it, at the same height and exposed to the same hours of sunlight as the majority of the array panels.

Provide panel temperature sensor, located on the array, fastened directly to the back side of the solar panel, thermocouple platinum or digital, and fully encapsulated including minimum 3/8" thick insulation block.

Provide insulation sensor, located in the plane of the array, fastened directly to the front side of a solar panel frame.

Provide a wind speed sensor near the array.

Provide lightning protection system and tie to the existing lightning protection system on the building.

Provide overcurrent protection, surge protection, and grounding.

Provide system rapid shutdown equipment.

See Single Line Power Diagram for additional requirements.

15.6.2 Bid Option 1

An additional new battery storage will be provided, **lithium iron phosphate type**, 150 KVA rated AC output, 300 KWH capacity, 480 VAC, 3-phase, 3-wire line connection, 60 Hz, <5% Harmonics, unity power factor, ModBus TCP/IP connection. Battery energy storage system will be premanufactured and self-enclosed container with minimum NEMA 3R rating, located exterior adjacent to the battery storage as described in Base Bid. Provide power connection feeder to the new inverter PCS-1. Provide control and monitor wiring to micro-grid controller MCP.

A charge controller will be provided to manage the charging and discharging of the new battery storage bank. Provide all required connections from the inverter and battery storage bank.

AMENDMENT 0003

15.6.3 Bid Option 2

PV solar array will be monocrystalline type with each solar panel having capacity of minimum 500W. Basis of design uses 4' x 6' solar panels for the approximate design quantities as listed below. The array will be installed on the new roof of the existing Incinerator Building 801D. Provide fixed roof mount installation. The installation area will accommodate approximately 135 solar panels. The total capacity of the PV array will be

67.5 KW producing approximately 91,394 KWH/year. See Architectural Drawings for the concept installation requirements.

PV solar array will be mounted on the new south facing sloped roof with 2/12 pitch. The total tilt angle of each PV module will be south oriented at 24 degrees with respect to the grade. All required mounting structures will be provided for each PV array module.

Connect the new PV array to the inverter I1 from the base bid.

See Single Line Power Diagram for additional requirements.

15.6.4 Bid Option 3

PV solar array will be monocrystalline type with each solar panel having capacity of minimum 500W. Basis of design uses 4' x 6' solar panels for the approximate design quantities as listed below. The array will be installed on the existing roof of the existing Maintenance Building 801E. Provide fixed roof mount installation. The installation area will accommodate approximately 139 solar panels. The total capacity of the PV array will be 69.5 KW producing approximately 80,892 KWH/year. See Architectural Drawings for the concept installation requirements.

PV solar array will be mounted on the existing east and west facing sloped roof with 2/12 pitch. The total tilt angle of each PV module will be east/west oriented at 24 degrees with respect to the grade. All required mounting structures will be provided for each PV array module.

A new inverter (I2) will be provided, string type, 96% efficiency, 480VAC, 60 KW, NEMA 3R enclosure. Locate new inverter exterior, adjacent to the existing Maintenance Building 801E. Provide all required connections from the inverter to the combiners and charge controllers. Provide communications and auxiliary outputs to monitor and send data. The inverter will be capable of network communication to allow for PV array performance monitoring. Provide fiberoptic connection to micro-grid controller (MCP) inside 1" conduit, routed underground. Provide a new 100A/3-pole fused safety disconnect with 100A fuses, NEMA 3R, located adjacent to the inverter I1. Provide a new feeder to the new panel SPI, via new disconnect, 3#1, #6G, 1-1/2"C. Route feeder underground.

A charge controller will be provided to manage the charging and discharging of the new battery storage bank. Provide all required connections from the inverter and battery storage bank.

Provide UL 4703 listed PV wiring. Provide grounding in accordance with NFPA 70.

Provide ambient temperature sensor. The sensor will be located near the array but not on it, at the same height and exposed to the same hours of sunlight as the majority of the array panels.

Provide panel temperature sensor, located on the array, fastened directly to the back side of the solar panel, thermocouple platinum or digital, and fully encapsulated including minimum 3/8" thick insulation block.

Provide insulation sensor, located in the plane of the array, fastened directly to the front side of a solar panel frame.

Provide a wind speed sensor near the array.

Provide lightning protection system and tie to the existing lightning protection system on the building.

Provide overcurrent protection, surge protection, and grounding.

Provide system rapid shutdown equipment.

See Single Line Power Diagram for additional requirements.

15.6.5 Bid Option 4

PV solar array will be monocrystalline type with each solar panel having capacity of minimum 500W. Basis of design uses 4' x 6' solar panels for the approximate design quantities as listed below. The array will be installed on the new roof of the new structures at the main parking lot - north and west single-loaded portions. Provide fixed roof mount installation. The installation area will accommodate approximately 132 solar panels. The total capacity of the PV array will be 66 KW producing approximately 89,363 KWH/year. See Architectural Drawings for the concept installation requirements.

PV solar array will be mounted on the new roof with 1/12 pitch. The total tilt angle of each PV module will be oriented at 24 degrees with respect to the grade. All required mounting structures will be provided for each PV array module.

A new inverter (I3) will be provided, string type, 96% efficiency, 480VAC, 125 KW, NEMA 3R enclosure. Locate a new inverter exterior, adjacent to the new structure. Provide all required connections from the inverter to the combiners and charge controllers. Provide communications and auxiliary outputs to monitor and send data. The inverter will be capable of network communication to allow for PV array performance monitoring. Provide fiberoptic connection to micro-grid controller (MCP) inside 1" conduit, routed underground. Provide new 200A/3-pole fused safety disconnect with 200A fuses, NEMA 3R, located adjacent to inverter I3. Provide a new feeder to the new panel SPI, via new disconnect, 3#4/0, #4G, 2"C. Route feeder underground.

Provide UL 4703 listed PV wiring. Provide grounding in accordance with NFPA 70.

Provide ambient temperature sensor. The sensor will be located near the array but not on it, at the same height and exposed to the same hours of sunlight as the majority of the array panels.

Provide panel temperature sensor, located on the array, fastened directly to the back side of the solar panel, thermocouple platinum or digital, and fully encapsulated including minimum 3/8" thick insulation block.

Provide insulation sensor, located in the plane of the array, fastened directly to the front side of a solar panel frame.

Provide a wind speed sensor near the array.

Provide lightning protection system.

Provide overcurrent protection, surge protection, and grounding.

Provide system rapid shutdown equipment.

See Single Line Power Diagram for additional requirements.

15.6.6 Bid Option 5

PV solar array will be monocrystalline type with each solar panel having capacity of minimum 500W. Basis of design uses 4' x 6' solar panels for the approximate design quantities as listed below. The array will be installed on the new roof of the new structures at the main parking lot - the east double-loaded parking section. Provide fixed roof mount installation. The installation area will accommodate approximately 192 solar panels. The total capacity of the PV array will be 96 KW producing approximately 129,983 KWH/year. See Architectural Drawings for the concept installation requirements.

PV solar array will be mounted on the new roof with 1/12 pitch. The total tilt angle of each PV module will be oriented at 24 degrees with respect to the grade. All required mounting structures will be provided for each PV array module.

The new solar array will be connected to the Inverter I3 (Bid Option 4).

Provide UL 4703 listed PV wiring. Provide grounding in accordance with NFPA 70.

Provide ambient temperature sensor. The sensor will be located near the array but not on it, at the same height and exposed to the same hours of sunlight as the majority of the array panels.

Provide panel temperature sensor, located on the array, fastened directly to the back side of the solar panel, thermocouple platinum or digital, and fully encapsulated including minimum 3/8" thick insulation block.

Provide insulation sensor, located in the plane of the array, fastened directly to the front side of a solar panel frame.

Provide a wind speed sensor near the array.

Provide lightning protection system.

Provide overcurrent protection, surge protection, and grounding.

Provide system rapid shutdown equipment.

See Single Line Power Diagram for additional requirements.

15.7 SPECIFICATIONS

The following list of specifications is anticipated for this project. The list is not comprehensive. Provide all specifications required to adequately describe the project and all materials to be used and installed. Edit and submit the latest comparable UFGS version:

26 08 00	APPARATUS INSPECTION AND TESTING
26 20 00	INTERIOR DISTRIBUTION SYSTEM
26 31 00	FACILITY SCALE SOLAR PHOTOVOLTAIC (PV) SYSTEMS
26 36 23	AUTOMATIC TRANSFER SWITCHES AND BY-PASS/ISOLATION SWITCH
26 37 13	MICROGRID CONTROL SYSTEM
26 41 00	LIGHTNING PROTECTION SYSTEM
26 51 00	INTERIOR LIGHTING
26 56 00	EXTERIOR LIGHTING
33 71 02	UNDERGROUND ELECTRICAL DISTRIBUTION

PART 16 CORROSION CONTROL AND CATHODIC PROTECTION

Not Applicable

PART 17 ENVIRONMENTAL CONSIDERATIONS

AMENDMENT 0003

17.1 GENERAL

A hazardous materials survey was conducted in 2024, and the resulting Hazardous Materials Assessment Report is included as an appendix to this DB RFP. Refer to the report for detailed findings, requirements, and recommendations related to hazardous materials handling and disposal.

The existing incinerator equipment and Incinerator Building 801D contain materials considered hazardous that must be handled and disposed of safely and in conformance with applicable regulations.

In addition to the incinerator equipment and Incinerator Building 801D, this project includes removal and disposal of a Caustic Tank. This tank is located north of O & M Building 801E and is illustrated and pictured on the RFP drawing sheet V-101 and pictured in the Hazardous Materials Assessment Report. The Caustic Tank shall be removed in its entirety. **The Government (DHS) shall provide a REC (Record of Environmental Consideration) prior to start of construction that will document the previous environmental review of the project.**

17.2 OVERVIEW

Per the attached Hazardous Materials Assessment Report included in the appendices, lead containing materials are present in the existing facility. The interior burn chamber waste of the incinerator equipment (refractory material, gaskets, and ash) qualifies as NORM (radionuclide) waste and must be disposed of **by a hazardous waste disposal Contractor in a Hazardous Waste Facility. Incinerator equipment and incinerator stack are shown graphically on Sheet AD120 of the RFP drawings and represent the hazardous waste work areas for RCRA 8 metals, dioxin/furans, and NORM waste. Contractor shall assume 25 gallons of caustic material remain in the caustic tank. The length of associated above ground caustic tank piping is shown graphically on Sheet C-101 of the RFP drawings.**

Multiple valves potentially containing mercury were observed in association with the incinerator equipment and the caustic tank and shall be disposed of as hazardous waste.

RCRA 8 metals and dioxin/furans were detected in the incinerator burn chambers and stack exhaust port.

The D/B Contractor shall carefully review the entire Hazardous Materials Survey Report and shall follow all recommendations included therein. The D/B Contractor shall also adhere to all State, Federal, and OSHA regulations governing work with hazardous materials.

The removal of the incinerator equipment, caustic tank and associated piping must be accomplished by a hazardous waste disposal Contractor.

AMENDMENT 0003

17.3 NORM WASTE HANDLING AND DISPOSAL

The DB Contractor shall provide an employee safety plan prior to project start detailing worker protection measures and required personal protective equipment (PPE). The plan shall be submitted to the Contracting Officer's Representative for review and approval. Concerns to be addressed in the safety plan include, but are not limited to, Naturally-Occurring Radioactive Materials (NORM) radionuclide exposure, dioxin/furan exposure, and confined space entry.

PPE requirements, at a minimum, shall include non-porous coveralls, impervious gloves, safety glasses/goggles, respiratory protection (NIOSH-approved, half-face air purifying respirator equipped with replaceable P100 HEPA filters at a minimum), and protective footwear (rubber or neoprene boots or disposable boot covers). The DB Contractor is responsible for all worker protection in accordance with OSHA and other applicable regulations.

NORM waste should be wetted and kept moist during removal and handling to minimize dust generation. No eating, drinking, or smoking will be allowed within the work area. Workers should be equipped with active personal radiation dosimeters or similar devices while in the work area or near NORM waste. Worker exposure should not exceed $1 \frac{1}{4}$ Roentgen equivalent man (Rems) during the removal and disposal process or three-month period, whichever is less.

The Emelle Hazardous Waste Facility located in Emelle, Alabama is the closest disposal site for NORM waste for this project. Contractor will coordinate with a licensed hazardous materials disposal site prior to project start to develop a waste profile and disposal procedure.

PART 18 SUSTAINABLE DESIGN

18.1 CODES AND CRITERIA

Facility shall be designed in accordance with all Government requirements, regional, and national applicable codes effective at issue date of RFP. The following sustainable design and energy conservation criteria shall apply to this project:

- a. E.O. 14057 Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability (Dec 2021)
- b. Guiding Principles for Sustainable Federal Buildings (Feb. 2016)
- c. EPAct 2005 - Energy Policy of 2005
- d. EISA 2007 - Energy Independence Security Act of 2007

The square footage of the building is less than 10,000 square feet and will not require tracking and reporting using an HPSB Checklist and is not required to achieve Third Party Certification.

--End of Section--

NOTE

The information included in Section 01 10 12 is provided solely as a basis for design. None of the items included in this section are to be considered a Brand Name requirement(s) and/or Brand Name or Equal requirement(s).

SECTION 01 10 12

DESIGN AFTER AWARD

1. DESIGN RESPONSIBILITY

The D/B Contractor shall furnish and be responsible for a complete set of design documents as called for in specification section 01 10 10 DESIGN REQUIREMENTS and as called for hereinafter. The information provided below is intended to supplement the Mobile District Design Manual requirements. The 2024 Mobile District Design Manual is available on the internet at:

<https://www.sam.usace.army.mil/Portals/46/docs/military/engineering/Design%20Manual/Mobile%20District%20Design%20Manual%202024.pdf>

2. DESIGN SUBMITTAL

The Contractor shall submit its design in different phases to the Government for review. The number and requirements of each design submittal are listed below. The number and contents of the design submittals shall be reflected in the Contractor's progress charts. Comments for each submittal shall be annotated and incorporated into the subsequent design before approval is granted.

2.1. TECHNICAL SPECIFICATIONS

Utilize Unified Facilities Guide Specifications (UFGS) in the SpecsIntact format. Utilize complete project specifications to cover the full scope of work. Delete references to materials that are not allowed or that are not intended to be provided. Government standards will not be referenced in the specifications; instead, provide any specific requirement of the standard in the specification as applicable.

Operations and maintenance (O&M) portions of UFGS shall be edited by the respective Designers of Record in the design phase. O&M requirements in the UFGS shall not be edited out. Submittals, operating procedures, schematics, as-built drawings, manuals, software, and computer hardware required in the UFGS for system operation, incorporated in the design phase, are critical to the operation of the new facility upon completion.

2.2. STANDARD DESIGN SUBMITTALS.

Items of work, not Fast-Tracked, shall be submitted in three complete packages at the 65%, 95% Un-Reviewed, and Final Reviewed Design stages as outlined in the following paragraphs. Partial design submissions of various portions of the project, other than those identified for fast-tracking, will not be allowed.

2.3. FAST TRACKING AND DESIGN SUBMITTALS:

The Contractor may propose "fast tracking" performance of the construction work to the Government approval. Fast tracking will only be allowed upon prior written approval by the Government.

2.4. SPECIAL INFORMATION REQUIRED IN EACH DESIGN SUBMITTAL

2.4.1. Sustainable Design and Federal Energy Mandates Compliance: Provide documentation demonstrating compliance and approach with federal mandates and sustainable design requirements in the Design Analysis as a separate chapter of the Design Analysis. As a minimum, compliance documentation shall include narratives and supporting information. This information is in addition to documentation elsewhere in this RFP and related criteria references. Refer to specification Section 01 10 10 Part 18 SUSTAINABLE DESIGN for additional requirements.

2.5. FIRE PROTECTION ENGINEER QUALIFICATIONS AND REQUIREMENTS

A qualified fire protection engineer is an integral part of the design team and must be involved in every aspect of the design as it relates to fire protection. A Fire Protection Engineer (FPE) shall be responsible for the design engineering, preparation of the construction documents, and construction phase inspection and acceptance testing of the fire suppression, automatic fire alarm and detection systems, and mass notification systems. The FPE shall also be involved with the building code and life safety code analysis.

As a minimum, the FPE shall be responsible for the following during the construction phase; material submittal review, shop drawing review, and participation in the following; Preparatory Inspection Meeting, initial inspection at job site, mid-point inspection at job site, Pre-Final Inspection with General Contractor and installation subcontractors, and Final Acceptance Inspection and Testing with General Contractor, installing subcontractors and Corps of Engineers.

Refer to other portions of this specifications and RFP for additional requirements and criteria.

2.6. PERMITTING

The Contractor is responsible for identifying and obtaining all necessary permits and licenses prior to the start of construction. The Contracting Officer's Representative (COR) will review, approve, sign, and return permit applications prior to their submittal by the D/B CONTRACTOR.

3. GOVERNMENT APPROVED SUBMITTALS

The approval of submittals by the Contracting Officer's Representative shall not be construed as a complete check but will indicate only that the design is in conformance with the contract requirements. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor is responsible for the design and construction of all work.

4. DESIGN SCHEDULE

Within 21-days after Notice to Proceed, the Contractor shall submit for approval a complete design schedule, with submittals and review times indicated by calendar dates. The schedule must conform to the requirements of UFGS Section 01 32 01.00 10 PROJECT SCHEDULE. The schedule shall be updated monthly with copies furnished to the Contracting Officer. No progress payments will be made without an approved schedule. Any additional changes which the Contractor may wish to make to number or composition of design submittals shall be made 30-days prior to the expected submittal date. The Contractor shall allow 21-days for the Government review period if

submittal dates are met. If a scheduled design submittal date is not met without notifying the Contracting Officer in writing one-week in advance, 28-days shall be allowed for the Government review period. If a submittal date is not going to be met, the Contractor shall notify the Contracting Officer, in writing, one week prior to the scheduled submittal date. Failure to do so will increase the Government review time by seven-days. See Paragraph 10: "SUBMITTAL REVIEWS".

5. MEETINGS

5.1. PROJECT KICK-OFF MEETING

Within 21 days of Notice to Proceed, the Contractor, along with the complete Designer of Record team, shall provide a Project Kick-Off Meeting at the DHS Center for Domestic Preparedness in Anniston, AL. The agenda for the Kick-Off Meeting shall, at a minimum, include:

- a. Project schedule
- b. Required Submittals
- c. Any Contractor proposed deviations from the RFP
- d. Sustainable Design
- e. Structural Interior Design (SID)
- f. Coordination and scope of work by other Government Contractors
- g. Proposed "fast-tracking"
- h. Project staging areas
- i. Requests or other concerns/issues

5.2. MEETING RECORDS

The Contractor is responsible for completing and distributing meeting minutes within 7 days of each meeting. Meeting minutes shall include attendees, agenda items addressed or deferred, and action items.

6. INTERIOR DESIGN

6.1. PREDEFINITION CONFERENCE

As part of the project kick-off meeting, the D/B Contractor (D/B CONTRACTOR) shall lead a predefinition conference. Government personnel responsible for the interior design of this project shall attend this meeting.

The purpose of the predefinition conference and follow-up meetings is to discuss Contractor's SID color scheme. Resulting selections will be incorporated into the SID package. The results of the Program-Design Verification and "Kick-Off" Meetings will be included in the discussion. All approved design modifications will also be incorporated into SID submittals. All SID selections are to fully integrate and coordinate with the interior materials, finishes, performance criteria indicated in Section 01 10 10 DESIGN REQUIREMENTS and the RFP Drawings. Final color selections are subject to approval by DHS and the Contracting Officer's Representative (COR).

6.2. STRUCTURAL INTERIOR DESIGN

The Structural Interior Design (SID) includes selection, specification and installation of the building related finishes, materials and colors. The design philosophy shall be indicated using the UFGS 09 06 90 Color Schedule. SID materials, finishes, and colors shall be reviewed by the Government for

compliance with the RFP. SID submittals will run concurrent with the Architectural submittals.

Actual exterior and interior materials, finishes and colors are to be provided for review and comment as part of the design deliverable. The format for this presentation shall be on 24-inch by 36-inch presentation board(s). The Government will define the final SID finishes that will be accepted for incorporation into the construction and verify that installation guide standards are met.

6.3. FURNITURE, FIXTURES AND EQUIPMENT (FF&E)

This project scope includes FF&E procurement, including training prop equipment. Except for equipment items that will remain in the renovated facility, including the boilers and autoclave systems, all existing furniture, fixtures, and incinerator equipment remaining in the facility at start of construction shall be removed by the DB Contractor and disposed of in accordance with applicable laws and regulations.

The DB Contractor will be responsible for procurement and installation of the new training prop equipment in the incinerator facility. The DB Contractor shall coordinate with the Government to accommodate the training prop equipment installation and utility connection. The DB Contractor shall develop the construction schedule in coordination with the Government to accommodate the installation and connection of the training prop equipment.

AMENDMENT 0003

6.3.1 Training Prop Basis of Design Product Information

The specific manufacturer and product information listed below serves as the Basis of Design for the training prop equipment to be procured and installed in this design-build contract. The DB Contractor shall provide equipment based on the basis of design listed herein. Provide utilities to include power, water, and compressed air per manufactures requirements and as shown in the RFP drawings.

- a. One (1) AET Hazmat Prop part number AET-TRP-5500 Acid Dip Tank Training Prop, by Advanced Entertainment Technology (AET).
www.aetfx.com/hazmattrainingprops

This prop is appx. 13'L x 10'W x 12'-7"H (~~see attached Concept sketch #SK2536010~~) and should weigh appx. 15,000lbs

The Acid Dip Tank Training Prop is skid mounted and includes two dip tanks, tank leaks, transfer pump, gantry crane and a catwalk.

- b. One (1) AET Hazmat Prop part number AET-TRP-9000 DOT 406 Training Prop, by Advanced Entertainment Technology (AET).
www.aetfx.com/hazmattrainingprops

This prop is appx. 23'L x 8'W x 8'-6"H (~~see attached sketch #SK2538010~~) and should weigh appx. 8,000lbs

This prop is an actual DOT 406 5000-gallon Pup Trailer on its side with three replaceable drill plate locations, one per compartment, and equipped with three leaking domes.

AMENDMENT 0003

7. DESIGN SUBMITTALS

7.1. 65% SUBMITTAL

7.1.1. Contractor Furnished Topographical Survey: provide per specification Section 01 10 10 DESIGN REQUIREMENTS. Submittal shall include supporting documentation incorporating work as shown for an interim submittal in the Mobile District Design Manual.

7.1.2. Contractor Furnished Fire Flow Test and Data: provide as indicated per specification Section 01 10 10, Part 13 FIRE SUPPRESSION requirements.

7.1.3. Paving, Grading and Drainage:

- a. Provide drawings, narrative and supporting documentation incorporating work as shown for an interim submittal in the Mobile District Design Manual. Identify all required permits.
- b. Provide UFGS marked-up specifications supporting work in this category.

7.1.4. Stormwater

The submittal shall contain the design narrative and design calculations for the stormwater systems relating to this project. Include an analysis showing the required size of all components of the stormwater system. The design narrative for stormwater systems shall include calculations for stormwater runoff, flows, pipe sizes, and capacities, to the extent affected by the stormwater scope included in this RFP. The narrative shall discuss the anticipated treatment volume required for the project area. Identify any deviation in the design from what was originally proposed and provide reasons and justifications for the deviation.

7.1.5. Environmental

Provide an edited UFGS 01 57 19, TEMPORARY ENVIRONMENTAL CONTROLS specification. A version of this specification section is provided in this RFP. The D/B Contractor shall use this section as a basis for editing. Provide a list of all permits that are required to be obtained and any associated fees. The Contractor shall ensure that required environmental permits are obtained prior to start of construction and/or installing or operating any new or modified equipment or processes. In addition to Environmental Permits, based upon information provided by the DHS Center for Domestic Preparedness, the Contractor will determine when Installation specific permits are required, such as digging, communications, and security.

7.1.6. Landscape

- a. Provide drawings, narrative, and supporting documentation incorporating work as shown for an interim submittal in the Mobile District Design Manual.
- b. Provide marked-up specifications supporting work in this category.

7.1.7. Geotechnical Investigation and Design:

- a. Provide a Geotechnical Report, narrative, and supporting documentation incorporating work as shown for an interim submittal in the Mobile District Design Manual.
- b. Provide marked-up specifications supporting work in this category.

7.1.8. Architectural Design

- a. Provide drawings, design analysis, and supporting documentation incorporating work as shown in the Mobile District Design Manual.
- b. Provide marked-up specifications supporting work in this category.

7.1.9. SID

After the Pre-Definition conference, the D/B CONTRACTOR will submit a formal 65%, 95% Unreviewed and Final SID Design Package incorporating any Government comments. The D/B CONTRACTOR shall submit complete sets of the SID packages in accordance with Chapter 15 of the Mobile District's Design Manual 2024 in the quantities indicated on the submittal register included in this section. All SID binders are to be "side-marked" to indicate the receiving activity.

7.1.10. Structural

- a. Provide drawings, narrative, and design analysis to include calculations and supporting documentation incorporating work as shown for an interim submittal in the Mobile District Design Manual.
- b. Provide marked-up specifications supporting work in this category.

7.1.11. Plumbing

- a. List all references used in the design including Government design documents and industry standards.
- b. Provide justifications and brief descriptions of the types of plumbing fixtures, piping materials and equipment proposed for use.
- c. Provide detailed calculations at 65% for the sizing of the following systems:
 - Domestic cold water piping
 - Waste and Vent
- d. Provide pipe layouts and risers for each plumbing system listed above. Included equipment and fixture schedules with description, capacities, locations, connection sizes, and other information as required.
- e. The design analysis, submitted for review shall consist of the following:
 - (1) Design Narrative to include applicable design assumptions, sizing methods chosen, and why.
 - (2) Design Calculations.
 - (3) Drawings.
 - (4) Catalog cuts of equipment such as water heaters, backflow preventers, and plumbing fixtures.
- f. Drawings shall be complete with legends, floor plans, schedules section, details and riser diagrams.
- g. Indicate locations and general arrangement of plumbing fixtures and major equipment.
- h. Include plan and isometric riser diagrams of all areas including hot water, cold water, storm drain, waste and vent piping. Piping layouts and risers should also include natural gas (and meter as required), and other specialty systems as applicable.

- i. Include equipment and fixture schedules with descriptions, capacities, locations, connection sizes and other information as required.
- j. Include marked up UFGS specifications of materials and methods.

7.1.12. Fire Suppression System:

- a. The fire protection engineer qualifications shall be submitted to and approved by the Contracting Officer certifying that the design engineer is a registered fire protection engineer who has passed the fire protection engineering written examination administered by the National Council of Examiners for Engineering and Surveys (NCEES).
- b. Certificates shall be furnished to certify that the suppression system designed for the buildings (where applicable) in this project complies with the material and fabrication requirements of this specification.
- c. The design analysis shall consist of the design narrative, design calculations, and drawings as specified in the Design Criteria such as the fire protection and life safety drawings.
- d. Drawings shall not be smaller than the scale used for architectural floor plans. Drawings shall provide the information required by NFPA 13 and any additional requirements as stated in the Design Criteria. The drawings shall be submitted for review.
- e. Drawings will detail method of attaching waterproofing membranes to sleeves passing through walls or floors that are subject to a static head of water.
- f. Maintain fire resistive integrity as tested per ASTM E 814.
- g. Locate or detail the following items on the contract drawings as applicable:
 - (1) Control valve locations.
 - (2) Type of sprinkler heads to be used.
 - (3) Required flagged pipe or mechanical grooved coupling connection locations and symbols.
 - (4) Wall and floor pipe penetration locations and details.
 - (5) Post indicator valve location.
 - (6) Pipe runs requiring freeze protection location and length to be protected.
 - (7) Fire department connections and water flow indicators locations and symbols.
 - (8) Mounting location for local water flow alarm facilities.
 - (9) Point of interconnection between alarm signal circuit and source of power will be indicated on the appropriate riser diagram.
- h. Submit marked-up technical specifications of materials and methods.
- i. Fire protection will be 95% complete by the 65% submittal.

7.1.13. Heating, Ventilating and Air Conditioning (HVAC)

- a. Provide a 65% HVAC design review package to include the following items as applicable to the D/B Contractor's design solution.
 - (1) 65% Design Analysis: The Design Analysis shall include the following items:
 - (a) Detailed calculations for the following: ductwork, equipment sizing, etc. Computer calculations shall include print out of input and output data.
 - (b) Equipment selection: Equipment selection shall be based on manufacturers whose equipment meets project requirements for each item. The design analysis shall include catalog cuts of all major equipment (e.g., fans, unit heaters,

- etc.) manufacturer, model number, dimensions, capacities, and electrical requirements. The project design is not complete until the designer is assured that there is sufficient physical space in areas where equipment is to be located to install and to maintain the selected equipment.
- (c) Include any other information or calculations to verify that the design complies with applicable criteria codes or standards and is satisfactory for the intended purpose.
 - (d) Explanatory notes shall be included in the design analysis covering all rationale for design which would not be obvious to an engineer reviewing the analysis. Methods of air conditioning and controls for air conditioning systems shall generally be confined to those in common use in the industry.
 - (e) Specifications: Marked-up specifications shall be submitted.
- (2) 65% Drawings: The drawings shall show all information given on the concept drawings but in greater detail. The drawings should include, but not be limited to, the following items as applicable:
- (a) Show all ductwork, with sizes and flow rates, where necessary for balancing purposes. Indicate the ductwork pressures in accordance with SMACNA standards. Include all accessories and appurtenances.
 - (b) Show layout and details of the final version of all HVAC systems. The location, arrangement, capacity, and space requirements of all equipment shall be indicated. Selected zones of air distribution shall be sufficiently completed to indicate the solution of the design for the remainder of the system and the precautions taken to coordinate the design with the architectural, structural, and electrical phases of construction. Equipment room layouts shall be sufficiently complete to show piping and duct layouts and access for maintenance. Since equipment rooms represent the most congested areas for both equipment and piping, the following guidelines should be followed when drawings are being prepared.
 - (i) All duct and fittings in congested areas and mechanical rooms shall be drawn to scale using double-line layouts.
 - (ii) All equipment shall be outlined to scale, and maintenance or removal space shall be indicated by dashed lines,
 - (iii) Removal and replacement space must be considered for the largest and heaviest equipment when a drawing is made.
 - (iv) In other HVAC plans, sections, and details, these same guidelines shall apply.
 - (c) The final form of all equipment schedules shall be shown with preliminary equipment data filled in.

7.1.14. Electrical Systems

7.1.14.1. Interior Electrical System

- a. Narrative. Address the following to allow verification the design complies with the requirements of the project. The design analysis

shall include all calculations required to support design decisions and estimates at this stage of design. The analysis shall include specific criteria furnished, conference minutes, and cost analyses of all systems considered.

- (1) Indicate electrical characteristics (voltage, phases, and number of wires) for the electrical system.
 - (2) Provide a description of lighting systems(s) to be used for all areas, referencing calculations. Also, include tabulation showing the following:
 - (a) Rooms name and number.
 - (b) Lighting intensity for each room. State the basis for selection such as I.E.S., etc.
 - (c) Identify the type of fixture by manufacturers catalog cut.
 - (3) State the type of wiring system to be used, such as insulated conductors installed in rigid or intermediate metal conduit, insulated conductors installed in electrical metallic tubing, etc. and location of proposed use.
 - (4) Describe any special areas of design, such as equipment, receptacles, handicap requirements, seismic requirements, or similar concerns.
 - (5) Define any hazardous classified locations by class, division, and group as defined by the National Electrical Code. Indicate the types of equipment to be used in these areas. State the reasons for the area(s) being hazardous classified locations.
 - (6) Provide a lightning risk analysis and describe the lightning protection system to be installed.
 - (7) Describe the type of grounding system planned.
 - (8) Describe the basic characteristics of panel boards, switchboards, motor control centers, and other major pieces of electrical equipment being provided. Short circuit and voltage drop calculations at all equipment with protective devices included shall be provided. Indicate equipment interrupting ratings and short circuit withstand ratings based on these calculations.
 - (9) Describe the basic characteristics of solar array system design as applicable per RFP.
 - (10) Describe the electrical metering equipment to be provided.
 - (11) Provide a statement that no duct or liquid piping shall pass over and/or through any electrical space and/or room as defined by the National Electrical Code Article 384.
 - (12) Provide marked-up specifications supporting work in this category.
- b. Drawings. Provide the following to allow verification of the design complies with the requirements of the project. Some detailed checks will be made. Complete and independent checking of the design shall be accomplished by the Contractor. The Contractor is fully responsible for the design. The design shall be complete and accurate. It shall be thoroughly checked for errors and conflicts (both within and between disciplines).
- (1) The power riser or one-line diagram shall be essentially complete except for finalization of conduit and wire sizes.
 - (2) Panel boards, switchboards, motor control centers, and all other utilization equipment shall be located on the floor plans. Schedules for applicable equipment shall be provided. The schedules shall include all pertinent information to fully describe the equipment. Elevations for free standing equipment shall be provided but need not be entirely finalized. Details of the layouts for electrical room and closets shall be shown.

- (3) Branch circuits, lighting fixtures, receptacles, and switches, shall be shown with number of conductors indicated.
- (4) A completed fixture schedule shall be included on the drawings.

7.1.14.2. Exterior Electrical Distribution System:

- a. Narrative. Address the following to allow verification the design complies with the requirements of the project. The design analysis shall include all calculations required to support design decisions and estimates at this stage of design. The analysis shall include specific criteria furnished, conference minutes, and cost analyses of all systems considered.
 - (1) Clearly describe the electrical distribution system and state the changes to be made to the existing system to accommodate this project.
 - (2) State the electrical characteristics of power supply from the service point to the main service equipment (voltage, phase, number, and size of conductors).
 - (3) Indicate the type, number, voltage rating, and connections, and kV A rating of all transformers provided whether Contractor provided, or Government furnished (existing).
 - (4) State the type of conductor and location of proposed use and provide a justification for its use.
 - (5) Include a statement describing the criteria used for the exterior design such as primary and secondary voltage drop. Describe the physical characteristics of circuits. Provide the short circuit current available at the site and state the source of this value.
 - (6) Describe all exterior lighting. Provide types of fixture, pole heights, and proposed intensities. IES point to point calculations shall be submitted to support the selected lighting system.
 - (7) Clearly describe characteristics of solar array system design for each building/phase. Include information for all associated equipment, voltage rating, KW/KVA/KWH rating, and connections. Describe methods utilized to power existing and new power loads as indicated in the RFP.
 - (8) Provide marked-up specifications supporting work in this category.
- b. Drawings. Provide the following to allow verification of the design complies with the requirements of the project. Some detailed checks will be made. Complete and independent checking of the design shall be accomplished by the Contractor. The Contractor is fully responsible for the design. The design shall be complete and accurate. It shall be thoroughly checked for errors and conflicts (both within and between disciplines). The electronic systems drawing information may be placed on the electrical drawings or on separate electronic systems drawings.
 - (1) All of the exterior electrical design drawings shall be completed with all conductors (underground) with all pertinent component details. Details shall include but are not limited to duct banks, transformer location, transformer data (kV A, impedance. voltage, phase. etc.), conductor type and size, and such.
 - (2) Provide detailed drawings showing all solar array layouts, solar array system equipment, and all associated connections. Describe methods utilized to power existing and new power loads as indicated in the RFP.
 - (3) Show removals and relocations, if any.

7.1.15. Electronic Systems

7.1.15.1. Interior Electronic Systems:

- a. Narrative. Address the following to allow verification the design complies with the requirements of the project. The design analysis shall include all calculations required to support design decisions and estimates at this stage of design. The analysis shall include specific criteria furnished, conference minutes, and cost analyses of all systems considered.
 - (1) Provide a descriptive narrative for all the electronic systems that are required for the project.
 - Telecommunication/Data Systems
 - Fire Detection and Alarm/Mass Notification System
 - (2) Provide marked-up specifications supporting work in this category.
- b. Drawings. Provide the following to allow verification the design complies with the requirements of the project. Some detailed checks will be made. Complete and independent checking of the design shall be accomplished by the Contractor. The Contractor is fully responsible for the design. The design shall be complete and accurate. It shall be thoroughly checked for errors and conflicts (both within and between disciplines). The electronic systems drawing information may be placed on the electrical drawings or on separate electronic systems drawings.
 - (1) Provide riser diagrams for all electronic systems. Riser shall show the location of the various components and interconnections with other systems.
 - (2) Show location of all devices and equipment for electronic system on floor plans. Show location of devices to be interconnected.
 - (3) Provide details of telephone outlets, telephone backboard arrangement, and other pertinent items required by criteria.
- c. The fire protection engineer shall be involved in the narrative and drawings for the fire detection and alarm / mass notification system. The requirements for the Fire Suppression System, Section 7.1.13 in this document, shall apply to the fire detection and alarm / mass notification system documents.

7.1.16. Sustainable Design

Provide narratives and support documentation to demonstrate compliance with the various federal mandates for sustainability and energy/water use reduction. Narratives and support documentation shall be provided in the Design Analysis as a separate chapter to explain the approach for compliance with each requirement. Provide references to drawings and specifications for location of applicable features.

7.2. 95% (UNREVIEWED) SUBMITTAL

7.2.1. Paving, Grading, and Drainage

Provide drawings, final specifications, narrative, annotated comments, and supporting documentation revised to comply with comments resulting from the 65% submittal. Include copies of all required permit applications.

7.2.2. Water Supply and Sanitary Sewer

- a. Provide drawings, final specifications, narrative, annotated comments, and supporting documentation revised to comply with comments resulting from 65% submittal. Include copies of all required permit applications. Key points in the 95% unreviewed submittal include:
 - (1) Drawings shall be completed and ready for implementation by construction forces.
 - (2) The submittal shall include all construction details and standard drawings.
 - (3) Sanitary sewer profile.

7.2.3. Environmental

- a. Provide a final UFGS 01 57 19, Temporary Environmental Controls specification.
- b. Provide a list of all permits that are required to be obtained and any associated fees.
- c. Submit a copy of the prepared technical documentation and application submittals for all permits for this project, including a copy of payment for permit fees.
- d. All permit submittal shall be routed through the Base Civil engineering office through the Contractor's Representative. The Representative shall forward all permit applications and fees to the Base Engineering Office for review. The Base Engineering Office will sign the applications and forward them to the appropriate regulatory authority.
- e. Permits shall be obtained prior to start of construction and/or installing or operating any new or modified equipment or processes.
- f. In addition to Environmental Permits, based upon information provided by the Base Engineering Office, the Contractor will determine when Installation specific permits are required, such as digging, communications, and security.

7.2.4. Landscape Work

Provide drawings, final specifications, narrative, annotated comments, and supporting documentation revised to comply with comments resulting from 65% submittal.

7.2.5. Geotechnical Investigation and Design

Provide a Geotechnical investigation and report, final specifications, narrative, annotated comments, and supporting documentation revised to comply with comments resulting from 65% submittal.

7.2.6. Architectural Design

- a. Provide drawings, design analysis, and supporting documentation incorporating work as shown in the Mobile District Design Manual. Include revisions to address 65% submittal review comments.
- b. Provide detail drawings (Building Sections, Elevations, etc.) details of Windows, Doors, Rails, Walls, Wall Bracing, STC Assemblies, Partitions, Wall blocking for Accessories, Shelving and Cabinets, and Door Thresholds. Identify any deviation in the design from what was originally proposed and provide reasons and justifications for the deviation.
- c. The Contractor shall furnish final Specifications supporting work in this category. The Contractor shall use the UFGS Guide Specification. For specific items not covered by a UFGS Guide Specification, the

Contractor shall develop the specification using an industry specification or manufacturer's specification formatted to UFGS Guide Specification format.

- d. Provide building code analysis and a life safety analysis to include but not limited to occupancy classification, distances for dead end corridors, common path, and travel distances, building construction type, fire rated assemblies, occupancy separation walls, etc. Provide life safety plan. Refer to Mobile District Design Manual for additional requirements.

7.2.7. SID

The Contractor shall submit four-complete sets of the approved and final SID package. Once the Contractor has submitted the SID and the Government has approved the submittal, all materials, finishes, colors, textures and pattern submitted and approved for this project are then considered as part of the contract and the Contractor shall furnish and install all approved SID finishes and items. No deviations will be considered once the SID submittal has been approved.

7.2.8. Structural

Provide drawings, narrative, design analysis with complete calculations and supporting documentation, final specifications, and annotated comments, as shown for a final submittal in the Mobile District Design Manual revised to comply with comments resulting from 65% submittal. Structural drawings shall be carefully checked to ensure coordination with architectural, site, mechanical, and electrical drawings.

7.2.9. Fire Protection

Submit the complete 95% unreviewed final submittal revised to comply with comments resulting from the 65% submittal.

7.2.10. Plumbing

The final plumbing design review package shall be submitted by the Contractor for Government review to include the final design analysis, specifications, annotated comments, and drawings of the plumbing systems showing the completed designs revised to comply with comments resulting from 65% submittal.

7.2.11. Heating, Ventilating and Air Conditioning (HVAC)

The final HVAC design review package shall be submitted by the Contractor for Government review to include the final design analysis, specifications, annotated comments, and drawings of the HVAC systems showing the completed designs revised to comply with comments resulting from 65% submittal.

7.2.12. Electrical Systems

7.2.12.1. Interior Electrical Systems

The final design review package revised to incorporate 65% review comments shall be submitted by the Contractor for Government review to include the final design analysis, specifications, annotated comments, and drawings showing the completed designs.

- a. The drawings shall be thoroughly checked for discrepancies, for compatibility between drawing and specifications, and for compatibility between disciplines.
- b. Completed short circuit calculations and a coordination analysis with time current curves and arc flash data for the entire electrical system shall be provided. All equipment shall be identified by manufacturer's name and catalog number.
- c. Complete voltage drop calculations shall be provided. The voltage drop calculations shall use the same single line diagram as the short circuit calculations and shall show drops at the same locations as short circuit currents are shown.
- d. Lighting calculations (lumen method for interior and point-to-point for exterior) shall be provided for all rooms and spaces and all exterior locations requiring illumination.
- e. All details shall be completed at this stage. Congested areas where there can be interferences with various systems shall be thoroughly detailed by expanded scale drawings.

7.2.12.2. Exterior Electrical Distribution System:

The final design review package revised to incorporate 65% review comments shall be submitted by the Contractor for Government review to include the final design analysis, final specifications, annotated comments, and drawings showing the completed designs.

7.2.12.3. Interior Electronic Systems:

The final design review package revised to incorporate 65% review comments shall be submitted by the Contractor for Government review to include the final design analysis, final specifications, annotated comments, and drawings showing the completed designs.

7.2.13. Sustainable Design:

Provide updated sustainable design narratives, along with supporting calculations and documentation. Highlight any changes and describe the reason for the change. Provide references to drawings and specifications for location of applicable features.

7.3. FINAL SUBMITTAL

Completed drawings, specifications, design analysis, and supporting documentation for all previous submissions and disciplines per the Mobile District Design Manual with all comments incorporated.

8. QUANTITY OF SUBMITTAL ITEMS

The documents which the Contractor shall submit to the Government for each submittal are listed and generally described below.

9. MAILING OF SUBMITTALS

All submittals to the Government during design shall be mailed using overnight mailing service. The addresses to where each copy shall be mailed are listed below. Each submittal shall have a transmittal letter accompanying

it which indicates the date, design percentage, type of submittal, list of items submitted, transmittal number and point of contact with telephone number.

9.1. ADDRESSES FOR SUBMITTAL DISTRIBUTION

a.	CESAM TECHNICAL LEAD (TL) US Army Corps of Engineers - Mobile District Attn: CESAM-EN-QC-TL, Michael Mayberry 109 St. Joseph Street Mobile, AL 36602 Phone: 251-376-7212 Email: michael.m.mayberry@usace.army.mil
b.	CESAM Project Manager (PM) US Army Corps of Engineers - Mobile District Attn: CESAM-PM-IC, Josh Brewer 109 St. Joseph Street Mobile, AL 36602 Phone: 256-231-8336 Email: joshua.l.brewer@usace.army.mil
c.	CESAM Branch Chief US Army Corps of Engineers - Mobile District Attn: CESAM-EN, William Knapp 109 St. Joseph Street Mobile, AL 36602 Phone: 251-694-4048 Email: William.j.knapp@usace.army.mil
d.	Contracting Officer's Representative (COR) US Army Corps of Engineers - Mobile District Attn: CESAM-EN-QC-TL, Kathleen Huffman 109 St. Joseph Street Mobile, AL 36602 Phone: 251-690-2669 Email: Jamie.K.Huffman@usace.army.mil
e.	Resident Construction Office US Army Corps of Engineers Anniston Resident Engineer Office Attn: CESAM-CD-SA-A (C. Martin) 35 Industrial Parkway Anniston, AL 36201 Phone: 256-231-8336 Email: christopher.d.martin@usace.army.mil
f.	Area Engineer Construction Office US Army Corps of Engineers South Alabama Area Engineer Office Attn CESAM-CD-SA - Amanda Griffin 35 Industrial Parkway Anniston, AL 36201 Phone: 256-231-8336 Email: mailto:
g.	Department of Homeland Security (DHS) DHS CDP Engineering Dept. Attn: D. Cole / J. Robertson 35 Industrial Parkway Anniston, AL 36201 Phone: 256-231-8336 Email: jeffrey.robertson@fema.dhs.gov

	Email david.cole4@fema.dhs.gov
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9.2. SUBMITTAL DISTRIBUTION

The following table lists the number of copies of design submittal requirements for this project:

	a.	b.	c.	d.	e.	f.	g.	h.	Tot
DESIGN QUALITY CONTROL PLAN AND SCHEDULE	1	1	1	1	1	1	1		7
CONCEPT DESIGN SUBMITTAL (65%)	a.	b.	c.	d.	e.	f.	g.	h.	Tot
Compact Disk (CD) in Searchable Adobe pdf Format Containing the following:	1	1	1	1	1	1	1		7
Design Analysis & Appendices (Note 1)									
Design Drawings									
Hardcopy Design Drawings (Half-Size Prints) in addition to pdfs on CD	1	1	1	1	1	1	1		7
Hardcopy Design Analysis, & Specifications in addition to pdfs on CD	1	1	1	1	1	1	1	1	7
Structural Interior Design Binder	1	1		1			1		4
95% UNREVIEWED DESIGN SUBMITTAL	a.	b.	c.	d.	e.	f.	g.	h.	Tot
Compact Disk (CD) in Searchable Adobe pdf Format Containing the following:	1	1	1	1	1	1	1	1	7
Design Analysis & Appendices (Note 1)									
Design Drawings									
Specifications & Appendices (Note 3)									
Independent Technical Review and Lessons Learned Certifications									
Energy Checklist/Scorecard - Excel Format									
Structural Interior Design - Pdf Format									
Hardcopy Design Drawings (Half-Size Prints) in addition to pdfs on CD	1	1	1	1	1	1	1	1	7
Hardcopy Design Analysis, & Specs in addition to pdfs on CD	1	1	1	1	1	1	1	1	7
Structural Interior Design Binder	1	1		1			1		4
Hardcopy of Permit Applications and Documentation				1			4	1	6
FINAL DESIGN SUBMITTAL	a.	b.	c.	d.	e.	f.	g.	h.	Tot
Compact Disk (CD) containing the following:	1	1	1	1	1	1	1	1	7
Design Analysis & Appendices - PDF format (Note 1)									
Design Drawings - 1/2 Size PDF Format									

Specifications & Appendices - SGML and Word Files										
Independent Technical Review and Lessons Learned Certifications										
Energy Checklist/Scorecard - Excel Format										
Structural Interior Design - PDF Format										
Hardcopy Design Drawings (Half-Size) in addition to pdfs on CD	1	1	1	1	1	1	1	1		7
Hardcopy Design Analysis, Specs, & Cost Estimate in addition to pdfs on CD	1	1	1	1	1	1	1	1		7
Structural Interior Design Binder	1	1		1				1		4
Permit Applications and Documentation - PDF Format (Note 4)				1				1		3
CONSTRUCTION PHASE SUBMITTAL	a.	b.	c.	d.	e.	f.	g.	h.		Tot
Construction Submittal	As Noted in UFGS Section 01 33 00									
Record CADD/BIM Files	As Noted in UFGS Section 01 78 00									
Operations and Maintenance Documents	As Noted in UFGS Section 01 78 23									

NOTES

Note 1 - Design Analysis shall include a narrative from each applicable design discipline describing the design, criteria requirements, catalog cutsheets, design calculations, relevant correspondence, and documentation of conversations with and direction given by Government entities. A list of proposed specifications by each discipline and identification of permit requirements shall be included in the Design Analysis. Annotated comments and updated PDRI Checklist from the previous submittal, and Energy & Sustainability Record Card in accordance with ECB 2013-25 shall be included as separate appendices. Electronic PDF copy of Design Analysis shall be consolidated into one file.

Note 2 - Not Applicable.

Note 3 - At the Interim Design Submittal, the edited Specsintact specifications shall be printed with the Revisions Print Option turned ON. With the Revision Print Option turned On, Deleted text prints red "struck thru" and Inserted text as green "underlined". In the event that an Interim Design submittal is not provided, the specifications shall be printed with the Revision Print Option turned ON at the Final Submittal. At the Final Submittal, the edited Specsintact specifications shall be printed with the Revision Print Option turned OFF which will print the text as well be shown in the Final Construction Documents. At the Final Submittal, the raw SGML (.sec) and Word files shall be provided.

Note 4 - At the Final Submittal, signed and sealed Permit Applications, accompanying documentation (plans, specs, calculations, etc.), and checks for application fees shall be provided in hardcopy.

10. SUBMITTAL REVIEWS

For each design review submittal, the Contractor will be furnished comments from personnel of the Mobile District and from other concerned agencies involved in the review process. The review will be for conformance with the technical requirements of the solicitation. The Government will take twenty-one (21) days to review and comment on each unreviewed design submittal including the 95% unreviewed submittal. The last two weeks of the calendar year shall not be considered when scheduling review times or meeting times. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, the Contractor shall clearly outline, with ample justification, the reasons for noncompliance within five (5) days after receipt of these comments in order that the comment can be resolved. The disposition of all comments shall be furnished in writing within 5 working days after the review meeting. The Contractor is cautioned in that if the Contractor believes the action required by any comment exceeds the requirements of this contract, that the Contractor should take no action and notify the Contracting Officer's Representative (COR) in writing immediately.

Review comments will be written using Design Review and Checking System (DrChecks). DrChecks is an Internet based computer program and is free of charge. Comments will be written in DrChecks. The Contractor shall annotate the comments using DrChecks and the Government will backcheck the comments. For more information on DrChecks, go to <http://www.projnet.org/projnet/binKormHome/index.cfm>.

Review conferences will be held for each design submittal at DHS FEMA Center for Domestic Preparedness. The Contractor shall bring the personnel that developed the design submittal to the review conference. These conferences will take place the week after the twenty-one (21) day review period. The Contractor shall be responsible for writing and distributing Minutes on each submittal review meeting within 7 calendar days of the meeting. Time for design submittal reviews and conferences will be included in the Contractor's schedule. Distribution shall be to the offices shown under paragraph 8, Mailing of Submittals.

If a design submittal is over one (1) day late in accordance with the latest design schedule and the Contractor has not given the COR a one (1) week written notice that the submittal will be late, the Government review period will be extended 7 days. The review conference will be held the week after the extended review period.

During the design review process, comments will be made on the design submittals that will change the drawings and specifications. The Government will make no additional payments to the Contractor for the incorporation of comments. Review comments are considered part of the design/build process.

If the COR requests a design change after the Design Complete Submittal drawings and specifications have been submitted, then this shall be considered a change and proper payment will be made by the COR.

If a design submittal is not of the quality level required for the stage of design submitted, the Government has the right to return the submittal to the Contractor so the design quality can be increased and request a resubmittal. The review time will begin when the submittal received is of the quality level required for the stage of design submitted by the Government. Returned

incomplete submittals will not be the basis of a claim by the Contractor for additional time or money.

11. DESIGN ANALYSIS

11.1. MEDIA AND FORMAT.

The design analysis shall be presented on 8-1/2 by 11-inch paper except that larger sheets may be used when required for graphs or other special calculation forms. All sheets (including oversized sheets, and hand calculations) shall be submitted in Adobe PDF format. The original material may be computer generated, typewritten, hand lettered, handwritten, or a combination thereof, provided it is legible. Side margins shall be 1-inch minimum to permit side binding and head to head printing. Bottom margins shall be 1-1/4 inches, with page numbers centered 1-inch from the bottom.

11.2. ORGANIZATION.

The several parts and sheets of the design analysis shall be given a sequential binding number and bound under a cover indicating the name of the facility and project number, if applicable. The title page shall carry the designation of the submittal being made. The complete design analysis presented for final review with the final drawings and specifications shall carry the designation "FINAL DESIGN ANALYSIS" on the title page.

11.3. DESIGN CALCULATIONS.

Design calculations are a part of the design analysis. When they are voluminous, they shall be bound separately from the narrative part of the design analysis. The design calculations shall be presented in a clean and legible form incorporating a title page and index for each volume. A table of contents, which shall be an index of the indices, shall be furnished when there is more than one volume. The source of loading conditions, supplementary sketches, graphs, formulae, and references shall be identified. Assumptions and conclusions shall be explained. Calculation sheets shall carry the names or initials of the computer and the checker and the dates of calculations and checking. No portion of the calculations shall be computed and checked by the same person.

11.4. AUTOMATIC DATA PROCESSING SYSTEMS (ADPS):

When ADPS are used to perform design calculations, the design analysis shall include descriptions of the computer programs used and copies of the ADPS input data and output summaries. When the computer output is large. It may be divided into volumes at logical division points. Each set of computer printouts shall be preceded by an index and by a description of the computation performed. If several sets of computations are submitted, they shall be accompanied by a general table of contents in addition to the individual indices. Preparation of the descriptions which must accompany each set of ADPS printouts shall include the following:

- a. Explain the design method, including assumptions, theories, and formulae.
- b. Include applicable diagrams, adequately identified.
- c. State exactly the computation performed by the computer.
- d. Provide all necessary explanations of the computer printout format, symbols, and abbreviations.
- e. Use adequate and consistent notation.

f. Provide sufficient information to permit manual checks of the results.

12. DRAWINGS

12.1. GENERAL:

All drawings shall be Computer-Aided Design and Drafting (CADD) in AutoCad Version 2015 format and shall be complete. The Contractor shall prepare the drawings in such a manner that the Mobile District could construct the facility without any additional assistance from the Contractor. Unnecessary work such as duplicate views, notes and lettering, and repetition of details shall not be permitted. Standard details not applicable to the project shall not be shown. Details of standard products or items which are adequately covered by specifications shall not be included on the drawings. Drawings shall be detailed such that conformance with the RFP can be checked and to the extent that shop drawings can be checked. Shop drawings shall not be used as design drawings. The Contractor shall use standard Corps of Engineers title blocks and borders on all drawings at all submittal stages. Standard drawing sheet formats and title blocks, and file and drawing CADD file names will be furnished to the Contractor by the Government. The Contractor shall incorporate the drawing, file, and contract numbers on individual drawing sheets at the earliest submittal.

12.2. 65%, 95%, AND FINAL SUBMITTALS:

Drawing submittals shall be half size on 11 by 17-inch pages. Scales and text sizes refer to full-size drawings on 22 by 34-inch pages.

The building drawings shall consist of 1/8-inch scale minimum floor plans. Elevations shall be drawn to a 1/8-inch scale minimum. The scale of other visual information shall be as required to make the drawings readable. Building wall sections shall be drawn at a minimum of 1/4-inch scale. The site and exterior utility drawings shall use a minimum scale of 1"=30'-0" unless otherwise indicated. Additionally, the overall site plan for this project shall be on one drawing sheet. Minimum text size is 1/8-inch.

13. SPECIFICATIONS

The Contractor shall submit marked-up specifications at the 65% submittal, and final specifications at the 95% unreviewed and final submittals. The specifications shall be Unified Guide Specifications (UGS). These specifications are available on the Internet at:

<http://www.wbdg.org/dod/ugs>

The specifications shall be detailed enough such that another product meeting the specification could be substituted and it would not adversely impact the project. All marked-out or redlined text shall be deleted and all inserted text shall be typed at the 95% unreviewed and final submittals.

14. SUBMITTAL REGISTER

The Contractor shall develop submittal requirements required during construction as part of the design phase of the contract. This shall be done by the Contractor's Designer of Record by producing a Contractor Submittal Register at each submittal during design. A submittal register shall be prepared for each section of the specifications for the submittal requirements of that section. The Contractor's Designer of Record shall be

responsible for listing all required submittals necessary to insure the project requirements are complied with. The Register shall identify submittal items such as shop drawings, manufacturer's literature, certificates of compliance, material samples, guarantees, test results, etc. that the Contractor shall submit for review and/or approval action during the life of the construction contract. See specifications Section 01 33 00 SUBMITTAL PROCEDURES for submittal and submittal register definitions and procedures.

15. DESIGNER OF RECORD

The Contractor shall identify and have on his staff a Designer of Record to develop submittal requirements during design and be responsible for each submittal identified in the Contractor Submittal Register. A Designer of Record may be responsible for more than one submittal. All areas of work shall be accounted for by a listed Designer of Record. Designer of Record shall approve all submittals they are responsible for prior to submittal to the Government.

END OF SECTION 01 10 12

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

11/20, CHG 5: 02/25

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 within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2024) Safety -- Safety and Occupational Health (SOH) Requirements

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

View Location Map; G, RO

Progress and Completion Pictures; G, RO

1.3 VIEW LOCATION MAP

Submit, prior to or with the first digital photograph submittals, a sketch or drawing indicating the required photographic locations. Update as required if the locations are moved.

1.4 PROGRESS AND COMPLETION PICTURES

Prior to project documentation by photographs the contractor shall obtain permission for use of photographs from DHS Security. Photographically document site conditions prior to start of construction operations. Provide monthly, and within one month of the completion of work, digital photographs, 1600x1200x24 bit true color minimum resolution in JPEG file format showing the sequence and progress of work. Take a minimum of 10 digital photographs each week throughout the entire project from a minimum of ten different viewpoints selected by the Contractor unless otherwise directed by the Contracting Officer. Submit with the monthly invoice one set of digital photographs and view location map in RMS along with the requirements per specification Section 01 32 01.00 10 PROJECT SCHEDULE (monthly schedule update). Indicate photographs demonstrating environmental procedures. Provide photographs for each month in a separate monthly directory and name each file to indicate its location on the view location sketch. Include a date designator in file names. Photographs provided are for unrestricted use by the Government.

1.5 MINIMUM INSURANCE REQUIREMENTS

Provide the minimum insurance coverage required by FAR 28.307-2 Liability, during the entire period of performance under this contract. Provide other insurance coverage as required by State law.

1.6 SUPERVISION

AMENDMENT 0003

1.6.1 Superintendent Qualifications

Provide project superintendent with a minimum of 10 years experience in construction with at least 5 of those years as a superintendent on projects similar in size and complexity. The individual must be familiar with the requirements of EM 385-1-1 and have experience in the areas of hazard identification and safety compliance. The individual must be capable of interpreting a critical path schedule and construction drawings. The qualification requirements for the alternate superintendent are the same as for the project superintendent. The Contracting Officer may request proof of the superintendent's qualifications at any point in the project if the performance of the superintendent is in question.

~~For projects where the superintendent is permitted to also serve as the Quality Control (QC) Manager as established in Section 01 45 00 QUALITY CONTROL, the superintendent must have qualifications in accordance with that section.~~ **The superintendent will be permitted to serve as SSHO (Site Safety & Health Officer) if qualified as established in Specification Section 01 35 26.**

AMENDMENT 0003

1.6.2 Minimum Communication Requirements

Have at least one qualified superintendent, or competent alternate, capable of reading, writing, and conversing fluently in the English language, on the job-site at all times during the performance of Contract work. In addition, if a Quality Control (QC) representative is required on the Contract, then that individual must also have fluent English communication skills.

1.6.3 Duties

The project superintendent is primarily responsible for managing subcontractors and coordinating day-to-day production and schedule adherence on the project. The superintendent is required to attend Red Zone meetings, partnering meetings, and quality control meetings. The superintendent or qualified alternative must be on-site at all times during the performance of this contract until the work is completed and accepted.

1.6.4 Non-Compliance Actions

The Project Superintendent is subject to removal by the Contracting Officer for non-compliance with requirements specified in the contract and for failure to manage the project to ensure timely completion. Furthermore, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders is acceptable as the subject

of claim for extension of time or excess costs or damages by the Contractor.

1.7 PRECONSTRUCTION CONFERENCE

Upon completion of design and design acceptance by the government, prior to commencing any work at the site, coordinate with the Contracting Officer a time and place to meet for the Preconstruction Conference. The purpose of this conference is to discuss and develop a mutual understanding of the administrative requirements of the Contract including but not limited to: daily reporting, invoicing, value engineering, safety, base-access, outage requests, hot work permits, schedule requirements, quality control, schedule of prices or earned value report, shop drawings, submittals, cybersecurity, prosecution of the work, government acceptance, final inspections and contract close-out. Contractor must present and discuss their basic approach to scheduling the construction work and any required phasing.

1.7.1 Attendees

Contractor attendees must include the Project Manager, Superintendent, Site Safety and Health Officer (SSHO), Quality Control Manager and major subcontractors.

1.8 REQUIRED ELECTRONIC PAYROLLS

CONTRACTOR SUPPLY AND USE OF ELECTRONIC SOFTWARE FOR PROCESSING DAVIS-BACON ACT CERTIFIED PAYROLLS:

- a. The Contractor will use a commercially available electronic system to process and submit certified payrolls electronically to the Government. The Davis-Bacon Act establishes the requirements for preparing, processing, and providing certified labor payrolls.
- b. The Contractor shall be responsible for obtaining and providing access for all licenses and other services required to provide for receipt, processing, certifying, electronically transmitting to Government, and storing weekly payrolls and other data required for the contractor to comply with the Davis-Bacon Act and related statutes. When the contractor uses an electronic Davis-Bacon Act payroll service, it shall be used to prepare, process, and maintain the relevant payrolls and basic records for all work under the construction contract. The electronic payroll service shall be capable of preserving the payroll and related basic records for the required three years after contract completion. The contractor shall obtain and provide electronic system access including electronic review to the Government, as required to comply with the Davis-Bacon Act and related statutes through the duration of the construction contract.
- c. The contractor's provision and use of an electronic payroll processing system shall meet the following basic functional criteria:
 - 1). commercially available;
 - 2). Compliant with appropriate Davis-Bacon Act payroll provisions in the FAR;
 - 3). able to accommodate the required number of employees and subcontractors that will be employed under the contact;

- 4). capable of producing an Excel spreadsheet - compatible electronic output of weekly payroll records for export into Excel spreadsheet to be imported into the contractor's mode of Resident Management System 3.0 or as applicable;
 - 5). demonstrated security of data and data entry rights;
 - 6). able to produce contractor-certified electronic versions of weekly payroll data;
 - 7). able to identify erroneous entries and track the date/time of all versions of the certified Davis-Bacon Act payrolls submitted to the Government over the life of the contract; and
 - 8). able to grant read only rights for Government personnel to view, check and print as needed;
 - 9). capable of generating a durable record copy in a Compact Disc (CD) or Digital Versatile Disc (DVD) and Portable Document Format (PDF) file record of data from the system database at the end of the contract closeout. This durable record copy of data from the electronic payroll processing system shall be provided to the Government during contract closeout.
- d. All contractor-incurred costs related to the contractor's provision and use of an electronic payroll processing service shall be included in the contractor's price for the overall work under the contract. The costs for Davis-Bacon Act compliance using electronic payroll processing services shall not be a separately bid or reimbursed item under this contract.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 26 31 00

FACILITY-SCALE SOLAR PHOTOVOLTAIC (PV) SYSTEMS

11/21

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 within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI C12.1 (2014; Errata 2016) Electric Meters - Code for Electricity Metering

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 7-16 (2017; Errata 2018; Supp 1 2018) Minimum Design Loads and Associated Criteria for Buildings and Other Structures

ASTM INTERNATIONAL (ASTM)

ASTM D149 (2020) Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies

ASTM D257 (2014) Standard Test Methods for D-C Resistance or Conductance of Insulating Materials

ASTM D709 (2017) Standard Specification for Laminated Thermosetting Materials

ASTM D882 (2012) Tensile Properties of Thin Plastic Sheeting

ASTM D903 (1998; R 2017) Standard Test Method for Peel or Stripping Strength of Adhesive Bonds

ASTM D1876 (2008; R 2015; E 2015) Standard Test Method for Peel Resistance of Adhesives (T-Peel Test)

ASTM D2244 (2021) Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

ASTM D2765 (2016) Standard Test Methods for Determination of Gel Content and Swell Ratio of Crosslinked Ethylene Plastics

ASTM D5870	(2016) Standard Practice for Calculating Property Retention Index of Plastics
ASTM D7567	(2009) Standard Test Method for Determining Gel Content in Crosslinked Ethylene Plastics Using Pressurized Liquid Extraction
ASTM E308	(2022) Standard Practice for Computing the Colors of Objects by Using the CIE System
ASTM E424	(1971; R 2023) Standard Test Methods for Solar Energy Transmittance and Reflectance (Terrestrial) of Sheet Materials
ASTM E772	(2015; R 2021) Standard Terminology of Solar Energy Conversion
ASTM E1171	(2015) Standard Test Methods for Photovoltaic Modules in Cyclic Temperature and Humidity Environments
ASTM F1249	(2020) Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor
ASTM G155	(2021) Standard Practice for Operating Xenon Arc Lamp Apparatus for Exposure of Materials

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 1547	(2018) Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces
IEEE C2	(2023) National Electrical Safety Code
IEEE Stds Dictionary	(2009) IEEE Standards Dictionary: Glossary of Terms & Definitions

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC	(2021) International Building Code
ICC IgCC	(2018) International Green Construction Code

INTERNATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)

NETA ATS	(2021) Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems
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INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

ANSI IEC 60529	(2020) Degrees of Protection Provided by
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Enclosures

IEC 61215 (2005; ED 2.0) Crystalline Silicon
Terrestrial Photovoltaic (PV) Modules -
Design Qualification and Type Approval

IEC 61853-1 (2011; ED 1.0) Photovoltaic (Pv) Module
Performance Testing and Energy Rating -
Part 1: Irradiance and Temperature
Performance Measurements and Power Rating

IEC 62446 (2018) Photovoltaic (PV) Systems -
Requirements for Testing, Documentation,
and Maintenance - Part 1: Grid Connected
Systems - Documentation, Commissioning
Tests and Inspection

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 9001 (2015) Quality Management Systems-
Requirements

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA 250 (2020) Enclosures for Electrical Equipment
(1000 Volts Maximum)

NEMA IEC 60529 (2004) Degrees of Protection Provided by
Enclosures (IP Code)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 1 (2021) Fire Code

NFPA 70 (2023) National Electrical Code

NFPA 70E (2024) Standard for Electrical Safety in
the Workplace

NFPA 780 (2023) Standard for the Installation of
Lightning Protection Systems

NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)

NRCA 3767 (2012) NRCA Guidelines for Roof Systems
With Rooftop Photovoltaic Components

SANDIA NATIONAL LABORATORIES (SAND)

SAND2007-5036 (2007) Performance Model for
Grid-Connected. Photovoltaic Inverters

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910 Occupational Safety and Health Standards

UNDERWRITERS LABORATORIES (UL)

UL 969 (2017; Reprint May 2023) UL Standard for

Safety Marking and Labeling Systems

UL 1449	(2021; Reprint Dec 2022) UL Standard for Safety Surge Protective Devices
UL 1703	(2002; Reprint Jun 2016) UL Standard for Safety Flat-Plate Photovoltaic Modules and Panels
UL 1741	(2010; Reprint Jan 2015) UL Standard for Safety Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources
UL 2703	(2015; Reprint Mar 2021) UL Standard for Safety Mounting Systems, Mounting Devices, Clamping/Retention Devices, And Ground Lugs For Use With Flat-Plate Photovoltaic Modules And Panels
UL 6703	(2014, ANSI Approved December 22, 2017) Standard for Connectors for Use in Photovoltaic Systems
UL Electrical Construction	(2012) Electrical Construction Equipment Directory

1.2 RELATED REQUIREMENTS

Sections 26 20 00 INTERIOR DISTRIBUTION SYSTEM, 26 08 00 APPARATUS INSPECTION AND TESTING and 33 71 02 UNDERGROUND ELECTRICAL DISTRIBUTION apply to this section with additions and modifications specified herein.

The Design Build Contractor's Designer of Record (DBC/DOR) shall develop fully edited UFGS specifications tailored to this project as described in the RFP Specification Section 01 10 12. The DBC/DOR shall incorporate this Section 26 31 00 FACILITY-SCALE SOLAR PHOTOVOLTAIC (PV) SYSTEMS into the Design Specifications, including additional edits reflecting the DOR's design approach. These edits shall not reduce the functionality of the system. Edits to this specification section are subject to government approval.

Where other technical specification sections are referenced in this RFP package, the DBC/DOR shall edit those sections in coordination with Section 26 31 00 and as required for the project scope.

1.3 DEFINITIONS

- a. Unless otherwise specified or indicated, electrical and electronics terms used in these specifications, and on the drawings, are as defined in the IEEE Stds Dictionary.
- b. Unless otherwise specified or indicated, solar energy conversion terms used in these specifications, and on the drawings, are as defined in ASTM E772.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" or "S"

classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Commissioning Plan; G

Commissioning Schedule; G

SD-02 Shop Drawings

Schematic Diagrams; G

Interconnection Diagrams; G

Installation Drawings; G

Site Plan Drawings; G

Riser Diagram and General Notes; G

Installation and Assembly Details; G

Shop Drawings; G

Complete Solar PV System Components and Interconnection Wiring
Diagrams; G

SD-03 Product Data

Combiner Boxes; G

Disconnects; G

Inverters; G; S

String Inverter Efficiency; G; S

Microinverter CEC Efficiency; G; S

Roof Mounting Structure for Modules (Racking); G

Photovoltaic Module Backsheet; G

Photovoltaic Module Encapsulant; G

Photovoltaic Modules; G; S

Photovoltaic Wire; G

System Monitoring; G

System Wiring; G

SD-05 Design Data

System Operation; G

Calculations; G; S

System Performance Calculations; G; S

SD-06 Test Reports

NABCEP Acceptance Checks and Tests; G

NETA Acceptance Checks and Tests; G

Inverter Startup Tests; G

Functional Performance Testing; G

SD-07 Certificates

Installer; G

Materials; G

Warranty; G

Commissioning Agent Qualification; G

Seismic Certification; G

Wind Certification; G

SD-08 Manufacturer's Instructions

Manufacturer's Installation Instructions; G

SD-10 Operation and Maintenance Data

Electrical Systems, Data Package 5; G

Training Course; G

SD-11 Closeout Submittals

Solar Posted Operating Instructions; G

Solar Training Documentation; G

Final Commissioning Report; G

Warranty; G

As-Built Drawings; G

1.5 MAINTENANCE MATERIAL SUBMITTALS

Comply with requirements specified in Section 01 78 00 CLOSEOUT SUBMITTALS.

1.6 QUALITY ASSURANCE

1.6.1 Regulatory Requirements

Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Contracting Officers. Provide equipment, materials, installation, and workmanship in accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.

1.6.2 Installation Drawings

Submit a minimum of three hard copies of drawings for government approval prior to manufacturing and equipment construction or integration. Submit site plan drawings and riser diagram and general notes at a minimum of 24 by 36 inches. Submit installation and assembly details at a minimum of 24 by 36 inches. Submit at minimum scale of 1/2 inch per foot for overview and 2 inches per foot for detail.

In addition to requirements in Section 01 33 00 SUBMITTAL PROCEDURES, include the following:

- a. All details legible and all text no smaller than 0.1 inches in height on any drawing. As needed, provide enlargements to ensure clarity of intent.
- b. Submit shop drawings at a minimum of 11 by 17 inches in size using a minimum scale of 1/4 inch per foot, for the exception of drawings not required scale. Shop drawings must include three-wire diagrams and installation details of photovoltaic (PV) system equipment indicating location as proposed in design drawings, layout and arrangement of PV modules, support and mounting mechanism, inverters, combiner boxes, AC and DC disconnects, equipment enclosures, conduits, monitors, meters, security systems, and all other accessories associated with the installation of the PV system. Wiring diagrams must identify circuit terminals and indicate the internal wiring for each item of equipment and the interconnection between each equipment item.
- c. Shop drawings may include legible copies of manufacturer's product literature, with selected items and specifications highlighted thereon.
- d. Modifications to original drawings made during installation must be immediately recorded for inclusion into the as-built drawings. When items have changed relative to the approved design, the designer must provide certification indicating that the changes will not negatively affect the system's operation or the structure supporting the system.

1.6.2.1 Installation and Assembly Drawings and Details

Submit site plan drawings, components and interconnection wiring and general notes, and installation and assembly details drawings prior to start of construction. Drawings must include sufficient detail for all parts of the work to enable the Government to check conformity with the requirements of the contract documents. Include in the site plan drawings: topographic and utility survey; bore logs; soils report; site plan(s); site construction details; structural drawings; structural construction details; site electrical plan; and site electrical construction details. Include in the installation and assembly drawings and details: parts lists; assembly drawings; interconnection wiring

diagrams; wire and cable schedules; wire and cable termination schedules; instrument plan; instrument and control wire, conduit and cable schedules; instrument wire and cable termination schedule; control diagrams; control sequence of operation; seismic restraint details; and wind restraint details.

1.6.2.2 "As-Built" and Record Drawings

After completion of construction, submit As-built drawings prepared and certified by the construction contractor, showing in red ink, on-site changes to the original construction details and all underground utilities measured from field benchmarks, accurate to within 1" of centerline of the utility. Immediately record for inclusion into the as-built drawings all modifications to original drawings made during installation. Indicate adequate clearance for operation, maintenance, and replacement of operating equipment devices.

After submittal and approval of "As-built" drawings, submit Record Drawings, prepared and by the project engineer(s) and architect(s), of the original design drawings reflecting all design changes and contractor noted changes in the "As-built" drawings.

1.6.3 System Operation

Provide a complete description of the function of each component including PV modules, DC wiring, combiner boxes, inverters, AC wiring, AC and DC disconnect switches, and monitoring system. Provide a discussion of the overall system operation.

1.6.4 Installer

Submit NABCEP (North American Board of Certified Energy Practitioners) PV Installation Professional certification, and a resume with references that details least four successful projects that, in aggregate, equal or exceed the size of the proposed project. Provide references for each of these referenced projects.

1.6.5 Standard Materials and Products

Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Provide products with satisfactory commercial or industrial use for 2 years prior to bid opening, and past performance documentation with consistent design and bill of materials. Include applications of equipment and materials under similar circumstances and of similar size. Where two or more items of the same class of equipment are required, products will be from a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in the technical section. Submit proof of compliance with requirements of UL, where material or equipment is specified to comply. The label of or listing in UL Electrical Construction Directory will be acceptable evidence. In lieu of the label or listing, a written certificate from an approved nationally recognized testing laboratory (NRTL) equipped to perform such services, stating that the items have been tested and conform to the requirements and testing methods of Underwriters Laboratories may be submitted.

1.6.5.1 Alternative Qualifications

Products having less than a 2-year field service record will be acceptable if the manufacturer has been regularly engaged in the design and production of solar photovoltaic products for a minimum of 5-years. Similar photovoltaic products must have been in satisfactory commercial or industrial use for 5-years prior to bid opening and must have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 5-year period.

1.6.5.2 Material and Equipment Manufacturing Date

Products manufactured more than 3 years prior to date of delivery to site must not be used, unless specified otherwise.

1.6.6 Operation and Maintenance Data

Submit Solar Photovoltaic Systems data package for the following items in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

- a. Troubleshooting guide with as-built plans displaying modules identified according groups or zones, coordinated with activity to organize as required.
- b. Warranty.
- c. Operation instructions.
- d. Preventive maintenance and inspection data, including a schedule for system operators.

1.6.6.1 Electrical Systems

Submit operation and maintenance data in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA. In addition to requirements of Data Package 5, include the following for the actual solar photovoltaic (PV) system provided:

- a. Service and maintenance information including preventive maintenance, assembly, and disassembly procedures.
- b. Complete operation, repair, and maintenance information, detailed to the smallest replaceable unit.
- c. Adjustment, trouble-shooting, configuration, tuning, and system calibration instructions.
- d. Programming information for the communications and monitoring interface.
- e. An instruction manual with pertinent items and information highlighted.
- f. A layout drawing showing locations as well as views of equipment; front, top, and side views.
- g. A one-line drawing showing all components and interfaces to the electrical system.
- h. Prices for spare parts and supply list including spare modules and

inverters.

- i. Inverter efficiency report and field acceptance test reports.
- j. Actual nameplate diagram.
- k. Date of purchase.

1.6.6.2 Training Course

Provide training by a factory trained instructor to provide full instructions to designated Government personnel in the operation, maintenance and programming of the specified systems and equipment. Include safety training for first responders including fire department representatives. The proposed Training Course Curriculum (including topics and dates of discussion) indicating that all of the items contained in the operating and maintenance instructions, as well as demonstrations of safety and routine maintenance operations, including testing procedures included in the maintenance instructions, are to be covered. The proposed Training Course must be video-recorded and provided with any PowerPoint slides as part of the final documentation for those that cannot attend. Submit training documentation along with the proposed training dates, at least 14 days prior to dates of proposed training course. Provide training session for six personnel specifically oriented to installed equipment, system layout, and user operations.

1.6.7 Bill of Materials

Submit a Bill of Materials listing each product being incorporated into the system. Bill of Materials includes a general description of the product, quantity, and exact manufacturer's model number. Where the manufacturer's model number does not fully identify the product, list options, accessories, or custom features by additional descriptions.

1.6.8 Qualified Testing Organization

Comply with requirements specified in Section 26 08 00 APPARATUS INSPECTION AND TESTING. Engage the services of a qualified testing organization, NABCEP-certified professional, or licensed electrician to provide inspection, testing, calibration, and adjustment of the solar photovoltaic electrical distribution system and equipment listed herein. Organization must be independent of the supplier, manufacturer, and installer of the equipment. The organization must be a first tier contractor.

Submit name and qualifications of organization. Organization must have been regularly engaged in the testing of electrical materials, devices, installations, and regularly engaged in solar PV systems for a minimum of five years.

Organization calibration program requirements:

- a. Provide a calibration program which assures that all applicable test instruments are maintained within rated accuracy.
- b. Accuracy: Traceable to the National Institute of Standards and Technology.
- c. Instrument calibration frequency schedule: Less than or equal to 12

months for both test floor instruments and leased specialty equipment.

- d. Dated calibration tables: Visible on all test equipment.
- e. Calibrating standard: Higher accuracy than that of the instrument tested.
- f. Keep up-to-date records that indicate dates and test results of instruments calibrated or tested. For instruments calibrated by the manufacturer on a routine basis, in lieu of third party calibration, include the following:
 - (1) Maintain up-to-date instrument calibration instructions and procedures for each test instrument.
 - (2) Identify the third party laboratory calibrated instrument to verify that calibrating standard is met.

1.6.9 Commissioning Agents

Commissioning Agents Qualifications: Engage commissioning service personnel, that specialize in the types of inspections and tests to be performed.

1.6.10 System Performance Calculations

Submit system performance calculations to show that the components provided will produce the minimum required production of power in accordance with PERFORMANCE REQUIREMENTS paragraph.

1.7 DELIVERY, STORAGE, AND HANDLING

- a. Store solar PV modules in their original packaging according to the manufacturer's guidance, and do not remove from packaging until day of installation.
- b. If a solar PV module is removed from its packaging, store it according to the manufacturer's guidance.
- c. Do not store solar PV modules on-site for more than 12 months.

1.8 WARRANTY

Provide a list of all applicable warranties for all equipment and components. Include warranty information, names, addresses, telephone numbers, and procedures for filing a claim and obtaining warranty services. The equipment items must be supported by service organizations which are reasonably 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.

Warrant the overall system for both parts and labor for a minimum period of 5 years. Provide specific warranties for solar photovoltaic modules, inverters, combiner boxes, and mounting system.

1.8.1 Solar Photovoltaic Modules

Furnish the solar photovoltaic module manufacturer's written warranty. The warranty must be a 25-year linear 80 percent (minimum) power warranty

(at the end of the 25th year after purchase an actual minimum power output of 80 percent based on the nameplate rating must be achieved) and not less than 10-years for workmanship material and manufacturing defects from the date of manufacture.

The warranty must state that the malfunctioning solar photovoltaic module must be exchanged by the manufacturer and promptly shipped to the using Government facility. The replacement solar module must be identical to, or an improvement upon, the original design of the malfunctioning solar module. Provide an extra 10 percent of spare modules in the event of necessary replacement of malfunctioning installed module.

1.8.2 Inverters

Furnish the inverter manufacturer's warranty. Inverter to be free from defects in material and workmanship for a minimum of 20 years from the date of manufacture. Inverter device installation, transportation, and on-site storage must not exceed 12 months, thereby permitting 19 years of the 20 year warranty to be in service and energized.

The warranty must state that the malfunctioning inverter must be exchanged by the manufacturer and promptly shipped to the using Government facility, and arrive in no more than ten days. The replacement inverter must be identical to, or an improvement upon, the original design of the malfunctioning inverter.

1.8.2.1 Inverter Software Updates Title

Provide, at no cost or charge, any inverter software upgrades that become available during the warranty period.

1.8.3 Combiner Boxes

Combiner boxes to be free from defects in material and workmanship for a period of 5 years.

1.8.4 Mounting System

Provide PV mounting system warranty of minimum 15 years.

1.8.5 Warranty Exclusion

The warranty must cover all system malfunctions and failures except those resulting from misuse, abuse, neglect, fire, vandalism, acts of nature, or other causes beyond the control of the Contractor or manufacturer.

1.9 CALCULATIONS

If construction deviates from design, provide relevant calculations to demonstrate that new design is satisfactory and approved by a licensed professional engineer.

1.10 CERTIFICATIONS

Provide seismic certification and wind certification, prepared by a licensed professional engineer or National Recognized Testing Laboratory, (NRTL) for all components and assembled systems in accordance with ICC IBC, ASCE 7-16 state and local building codes. Seismic and wind certifications must demonstrate system must withstand wind and seismic requirements as

installed and remain online and functional after a seismic or wind event.

1.11 HEALTH AND SAFETY RECOMMENDATIONS

Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS, applies to this section with additions and modifications specified herein.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

- a. The PV system described in this document is a facility-scale less than 1 megawatt with system voltage not exceeding 1,000 VDC, multiple PV systems with a single service, and is of the grid-connected type which provides a direct interconnection of PV system and grid power service supplying building . The PV system does include battery/backup storage
- b. PV system must comply with these specifications, all applicable construction document drawings, all applicable codes, and all local authorities having jurisdiction. System must comply with all policies and standards required by the electrical utility having jurisdiction and all applicable incentive program guidelines. PV system equipment includes, but is not limited to, PV modules and electrical insulating components such as encapsulants and backsheets, raceways, inverters, combiner boxes, disconnect switches, wire, conduit, junction boxes, mounting hardware, mounting structure for modules (racking), monitoring and communication equipment.
- c. Coordinate with roofing to provide certificate of roof warranty not invalidated by solar PV installation. For rigid solar cell PV systems on metal roofing panels, integrate with the roofing system, Section 07 60 00 FLASHING AND SHEET METAL.
- d. Provide surge protective device (SPD) complying with NFPA 780 requirements and listed to UL 1449.

2.1.1 System Requirements

Conform electrical installations to IEEE C2, NFPA 70, and requirements specified herein.

- a. Solar photovoltaic system characteristics provided includes:
 - (1) 434 minimum rated kW DC output
 - (2) 66 minimum rated kW AC output
 - (3) 574420 minimum kWh AC per year for year one
 - (4) 480 system voltage
 - (5) Roof mounted.
- b. All equipment must be listed and labeled in accordance with NFPA 70 and OSHA-listed nationally recognized testing laboratories (NRTL) and installed in accordance with the listing requirements and the manufacturer's instructions.
- c. Provide all accessories needed for a complete, secure, operational grid-tied PV system.

- d. Wiring and connections of inverters, PV source circuits, AC branch circuits, and all interconnections must be rated at a minimum for IP65 in accordance with NEMA IEC 60529.

2.1.1.1 System Wiring

System wiring must conform to Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM and must be in accordance with Section 690 of NFPA 70. Cabling exposed to sunlight must be UV resistant. All wiring must be copper conductor.

Provide conduits in accordance with Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM. Use galvanized rigid steel conduit above grade and mount on UV resistant high-density polyethylene (HDPE) supports. Conduit below grade must be as required by Section 33 71 02 UNDERGROUND ELECTRICAL DISTRIBUTION.

2.1.2 Performance Requirements

System components provided must be selected to achieve a minimum calculated energy production of 574420 kWh per year as required by ICC IgCC.

2.2 PHOTOVOLTAIC MODULES

- a. PV modules must be IEC 61215 compliant and listed to UL 1703, and manufactured in an ISO 9001 certified facility.
- b. PV modules must be of monocrystalline technology and
 - (1) for rack-mounting.
- d. PV module efficiency must be greater than 15 percent for crystalline technology.
- e. PV modules must be of the same manufacturer and model number and consistent sub-components.
- f. Submit on cutsheets PV module performance data from the manufacturer that must include a flash test data in accordance with IEC 61853-1, and temperature coefficients at: STC, nominal operating cell temperature (NOCT), low irradiance conditions (LIC), high temperature conditions (HTC), and low temperature conditions (LTC).
- g. PV module bypass diodes must be inside the solar PV module's single conductor cable junction box.
- h. Photovoltaic wire, wiring methods, and utilization of locking-type connectors must comply with the requirements of NFPA 70 and UL 6703. Provide USE-2 or RHH or RHW-2 wire, and sunlight-resistant wire when exposed to sunlight.

2.2.1 Crystalline Photovoltaic Module Backsheet

- a. Backsheet component must consist of a tri-layer construction (minimum thickness of 9.8 mils) with outer layers of polyvinyl fluoride (PVF) and an inner layer of polyester for crystalline-silicon modules with a maximum system voltage of 1000 VDC.
- b. Alternate polymeric backsheets consisting of different chemical

composition, thickness, or construction must fulfill the safety and performance specifications and acceptance criteria in Table 1. The required component properties in Table 1 must be verified by a test report provided by an OSHA-listed nationally recognized testing laboratory (NRTL) and a cutsheet submitted.

TABLE 1 - PV MODULE BACKSHEET COMPONENT SAFETY AND PERFORMANCE		
Items	Test Methods	Specification
Tensile Strength (MPa)	ASTM D882	>=100 (TD) >=100 (MD)
Elongation at Break (percent)	ASTM D882	>=80 (TD) >=100 (MD)
Dimensional Stability (percent, 150 degrees C, 0.5 h)	ASTM D882	<=1.0 (TD) <=1.0 (MD)
Breakdown Voltage (kV)	ASTM D149	>=18
WVTR (g/m ² day, 37.8 degrees C, 100 percent RH)	ASTM F1249	<=2.5
Interlayer Peeling Strength (N/cm)	ASTM D1876	>=4
Peeling Strength with EVA (N/cm)	ASTM D903	>=40
Damp Heat (85 degrees C, 85 percent RH, 1000 hrs) -Color Change delta b -Elongation Retention (percent) -Appearance	ASTM E1171 ASTM E308/ASTM D2244 ASTM D882/ASTM D5870	<=2.5 >=70 No cracking or delamination.
UV Exposure Irradiance of 0.55 W/m ² at 340 nm (61 W/m ²) using a xenon lamp with a daylight filter (outer layer). Exposure is 4200 hours (260 kWh/m ² total UV (300-400 nm)) -Color Change delta b -Elongation Retention (percent) -Tensile Retention (percent) -Appearance	ASTM G155 ASTM E308/ASTM D2244 ASTM D882/ASTM D5870 ASTM D882/ASTM D5870	<=2.0 >=70 >=70 No cracking or delamination.

2.2.2 Crystalline Photovoltaic Module Encapsulant

- a. Encapsulant component must consist of ethyl vinyl acetate (EVA) with a total nominal (prelamination) thickness of 35 mils or greater in the completed module. The EVA must have a minimum of 28 percent VA content. Through statistical process control, the module manufacturer must ensure that the cured EVA has a minimum of 70 percent gel content per ASTM D7567 or ASTM D2765. The EVA must have a UV cutoff wavelength of 360 nm as measured according to ASTM E424. The EVA must have a minimum volume resistivity of 1x10¹⁵ ohm-cm per ASTM D257.
- b. Thermoplastic encapsulants consisting of different chemical

composition, thickness, or construction must fulfill the safety and performance specifications and acceptance criteria described in Table 2. The required component properties described in Table 2 must be verified by a test report provided by an OSHA-listed nationally recognized testing laboratory (NRTL) and a cutsheet submitted.

TABLE 2 - PV MODULE ENCAPSULANT COMPONENT PROPERTIES		
Items	Test Methods	Specification
Appearance	Visual Examination	No bubble, crack, or delamination.
Gel Content (percent)	ASTM D7567/ASTM D2765	>=70
UV Cutoff Wavelength (nm)	ASTM E424	>=360
Volume Resistivity (ohm-cm)	ASTM D257	>=1X10 ¹⁵

2.2.3 Electrical Characteristics

Provide high-power type PV module(s), with typical peak power of not less than 500 watts, plus or minus 3 percent power tolerance, under Standard Test Conditions (STC). The AC output must not be less than 80 percent of the DC kWp rating. The individual current harmonics and TRD shall not exceed the limits specified in IEEE 1547.

The operating voltage corresponding to the power output mentioned above must be at least 54 volts. The open circuit voltage of the PV modules under STC should be at least 64 volts. Operate PV module at an ambient temperature range of minus 40 degrees F to plus 185 degrees F with 100 percent relative humidity.

2.2.4 Terminal Box

Include a terminal box on the module having a provision for opening for replacing the cable, if required.

2.2.5 Nameplate

Include the following on the module nameplate so as to be clearly visible:

- a. Name of the Manufacturer or distinctive logo;
- b. Model or Type Number;
- c. Serial Number;
- d. Year of make;
- e. Peak wattage rating;
- f. Peak voltage; and
- g. Peak current.

2.3 INVERTERS

- a. Array-to-inverter kW ratio must not exceed manufacturer recommendations. Inverter must be IEEE 1547 compliant, listed to UL 1741, comply with the latest applicable ANSI and FCC standards and addenda, and inspected before commissioning, testing, and operation of the system. Submit documentation validating system performance requirements.
- b. Inverter must be approved by FCC Part 15, Class A as an unintentional radiator.
- c. All same-sized inverters supplied must be of the same manufacturer and model number.
- d. Provide inverter utilizing a floor-mount system.
- e. Provide inverter utilizing a NEMA 3R outdoor enclosure in accordance with NEMA 250. Provide enclosure made of stainless steel.
- f. Provide inverter with anti-islanding protection to prevent back-feeding inverter generated power to the grid in the event of a utility outage. Anti-islanding protection must be listed to UL 1741 and IEEE 1547.
- g. Overcurrent protection, ground fault protection, arc fault circuit interrupter (AFCI), and rapid shutdown must comply with the requirements of NFPA 70.
- h. Provide inverter with self-diagnostics routines, and remote and local display of operating status and remote monitoring capabilities. Provide inverter compatible with monitoring system and metering system. If capability for remote monitoring and control does not exist, then it must be added.
- i. Provide inverter with integrated monitoring system. Data monitoring equipment must be able to sustain an overload across its output terminals up to the 150 percent load, while supplying any load within its rating and without reducing its output voltage. Fuse power semiconductors in the inverter with fast acting fuses to prevent cascading failures. Provide each fuse with a blown fuse excluding String and Micro inverters and alarm indicating diodes on the control panel.
- j. Rate inverters output as 125, 60, and 45 AC kW at unity (1), 3 phase, 480 volts. The peak inverters power conversion efficiency must be 96 percent or greater.
- k. Match inverter DC input to the design of the PV module array outputs and account for the following:
 - (1) The inverter low voltage is 50 percent of the maximum system voltage, to account for 25 year degradation.
 - (2) Voltage decrease due to high temperatures at project site. Operate inverter at an ambient temperature range of minus 4 degrees F to plus 122 degrees F with 95 percent humidity (non-condensing).

- l. Provide isolation transformer via system central transformer for multiple inverters to provide safe galvanic separation between the AC side of the inverter and the grid.
- m. Inverter must include AC and DC disconnecting means. DC and AC disconnecting means must be listed with ratings suitable for the intended use and purpose. System disconnecting means must meet the requirements of NFPA 70.

2.3.1 String Inverters

- a. Submit String Inverter Efficiency of having a weighted average inverter power conversion efficiency of 98 percent or greater.
- b. Allow the use of DC optimizers provided that a design which coordinates the DC optimizers and the inverter(s) is approved by the Contracting Officer.

2.3.2 Micro Inverters

- a. Provide microinverters mounted on racking or mounting system by the installer, and comply with applicable requirements in article INVERTERS.
- b. Submit Microinverter CEC Efficiency as verified by CEC SAND2007-5036 of having a weighted average inverter power conversion efficiency of 96 percent or greater.
- c. Inverter must feature maximum power point tracking (MPPT).

2.4 COMBINER BOXES

- a. All combiner boxes must be listed to UL 1741, and inspected before commissioning, testing, and operation of the system.
- b. Provide combiner boxes support structure mount, NEMA 3R outdoor stainless steel enclosures in accordance with NEMA 250.
- c. Supply combiner boxes designed for use with the inverter provided, and coordinated to the specific PV source circuit design.
- d. Include in the combiner boxes fuses and a bus to combine the outputs of the strings. Each combiner box must be UL 1741 listed and operate at an ambient temperature range of minus 13 degrees F to plus 135 degrees F. Provide combiner box capable of at least 12 inputs and an input fuse rating of 15 amps.
- e. Provide combiner box output terminals for paralleling two conductors for the PV positive and negative, as well as the equipment ground conductors. Run set of wires from the combiner box to the inverter. Provide overcurrent protection and output disconnecting means listed for intended use and purpose that comply with the requirements of NFPA 70.

2.5 ROOF MOUNTING STRUCTURE FOR MODULES (RACKING)

- a. Provide racking for array as indicated on the drawings, including the module azimuth and tilt for each inverter's separate array. Provide racking compliant with UL 2703.

- b. Racking and PV array, including modules, hardware, and attachments, must withstand seismic loads, snow loads, and wind loads as required by ASCE 7-16 and ICC IBC. Coordinate with structural engineer to insure roof will withstand the racking and PV array loads.
- c. Racking must be suitable for Seismic Design Category as defined by ASCE 7-16 and ICC IBC.
- d. Submit seismic and wind and snow load design calculations for the array mounting system and its attachment to the structure showing compliance with seismic and wind and snow requirements while supporting the PV modules.
- e. Provide the mechanical hardware for mounting the PV arrays and all other hardware required for assembling the PV modules, and the attachments to the building structure.
- f. Use array mounting hardware compatible with the site considerations and environment. Use a stainless steel, galvanized steel, or aluminum support structure. Do not use wood or plastic components for support.
- g. Use cathodic protection compatible with the site considerations and environment. Utilize galvanized anchor encased in concrete driven into ground.

2.5.1 Mounting System Base Supports

Fabricate with fastening points integral to the mounting structure. Mounting system supports must be permanently affixed stanchions that are anchored to the building structure. Coordinate height with thickness of roof insulation.

2.5.2 Flashing Boot

Fabricate for precision fit over base support. Coordinate height with base supports.

2.5.3 Base Cap

Fabricate to overlap base support and flashing boot a minimum of 2 inches.

2.5.4 Base Cap Gasket

EPDM with self-adhesive closed cell foam or other gasketing material compatible with the roofing material.

2.5.5 Framing

Provide with wall thickness as determined by structural calculations.

2.5.6 Hardware

Bolts, nuts, washers, and screws must be 18-8 stainless steel.

2.6 CAST-IN-PLACE CONCRETE

Provide concrete associated with electrical work for other than encasement of underground ducts rated for 4000 psi minimum 28-day compressive

strength unless specified otherwise. Conform to the requirements of Section 03 30 00 CAST-IN-PLACE CONCRETE.

2.6.1 Foundation Anchorage

Anchor mounting structure to concrete pad in accordance with Sections 03 30 00 CAST-IN-PLACE CONCRETE, 05 12 00 STRUCTURAL STEEL, and 05 05 20 POST-INSTALLED CONCRETE AND MASONRY ANCHORS, as required.

2.7 PV SYSTEM MONITORING

- a. Provide a PV system monitoring panel mounted as indicated.
- b. The following quantities must be viewable from a remote and local touch screen display mounted at location as indicated:
 - (1) DC Input Voltage from PV array
 - (2) DC Input Power from PV system
 - (3) DC Input Current from PV system
 - (4) AC Phase Current from inverter (average)
 - (5) AC Voltage from inverter (average)
 - (6) AC Real Power from inverter
 - (7) Daily, Weekly, Monthly, Yearly, and Cumulative Energy Production
 - (8) Fault Status Report
 - (9) DC Ground Current Report
 - (10) AC Neutral Current from inverter
 - (11) AC Reactive Power from inverter
 - (12) AC Apparent Power from inverter
 - (13) AC Power Factor
 - (14) AC Phase Current from inverter (A, B, C)
 - (15) AC Voltage from inverter (A, B, C)
 - (16) AC Voltage and Current Balance.
- c. Provide additional data acquisition sensors to measure irradiance wind speed, ambient temperature, PV module temperature. Any additional data acquisition sensors require a conduit separate from the current conductor conduit.

2.8 PV SYSTEM METERING

- a. Comply with metering requirements in Section 26 12 21 SINGLE-PHASE PAD-MOUNTED TRANSFORMERS.
- b. Provide a non-revenue-grade Interval Data Recording (IDR) meter

complete with industry standard telemetry for communications with Ethernet, cellular, or other common output capabilities. Conform to CSI requirements and electrical utility requirements.

- c. Connect to a monitoring/data collection recording solar production through time increments applicable to installation and utility standards, with a minimum of 15-minute intervals and 30-day memory.
- d. UL listed and conform to ANSI C12.1.
- e. Measure kWh, demand, instantaneous power, volts, amps, and watts.
- f. Provide UL listed communication and annunciator panel.

2.9 POSTED OPERATING INSTRUCTIONS

Provide for each system and principal item of equipment as specified in the technical sections for use by the operation and maintenance personnel. The operating instructions include the following:

- a. Wiring diagrams, schematic diagrams, interconnection diagrams, control diagrams, and control sequence for each principal system and item of equipment.
- b. Array layout showing the locations of all DC and AC disconnects.
- c. Start up, proper adjustment, operating, and shutdown procedures.
- d. Safety precautions.
- e. The procedure in the event of equipment failure.
- f. Other items of instruction as recommended by the manufacturer of each system or item of equipment.

Print operating instructions and frame under glass or in approved laminated plastic. Post instructions where directed. For operating instructions exposed to the weather, provide weather-resistant materials or weatherproof enclosures. Operating instructions do not fade when exposed to sunlight and secure to prevent easy removal or peeling.

2.10 MANUFACTURER'S NAMEPLATE

Each item of equipment must 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. For PV modules, a label on the back of the module is acceptable.

2.11 FIELD FABRICATED NAMEPLATES

ASTM D709. Provide laminated plastic nameplates for each equipment enclosure, relay, switch, and device; as specified. Each nameplate inscription identifies the function and, when applicable, the position. Nameplates are of melamine plastic, 0.125 inch thick, white with black center core. Surface is of matte finish. Square corners. Accurately align lettering and engrave into the core. Minimum size of nameplates is 1 inch by 2.5 inches. Lettering is a minimum of 0.25 inch high normal block style.

2.12 PV EQUIPMENT MARKING AND WARNING LABELS

Provide PV equipment listed or be evaluated for the application and have a field label applied in compliance with NFPA 70.

Provide warning signs for the enclosures of electrical equipment having a nominal rating exceeding 600 volts.

- a. Provide PV equipment with UL 969 weather-resistant marking and warning labels in compliance with NFPA 1 and NFPA 70.
- c. Provide warning signs for arc flash protection in accordance with NFPA 70E for all electrical equipment and components that are requiring examination, adjustment, servicing, or maintenance while energized. Provide field installed signs to warn qualified persons of potential electrical arc flash hazards when warning signs are not provided by the manufacturer. Provide marking that is clearly visible and readable from each accessible side to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

2.13 CABLE TAGS IN MANHOLES, HANDHOLES, AND VAULTS

Provide tags for each power cable or wire located in manholes, handholes, and vaults. The tags must be polyethylene. Do not provide handwritten letters. The first position on the power cable tag denotes the voltage. The second through sixth positions on the tag identify the circuit. The next to last position denotes the phase of the circuit and must include the Greek "phi" symbol. The last position denotes the cable size.

2.14 GROUNDING AND BONDING

- a. Provide properly sized equipment grounding conductors. Equipment grounding conductors must be insulated stranded copper, except that sizes 10 AWG and smaller must be solid copper. Insulation color must be continuous green for all equipment grounding conductors, except that wire sizes 4 AWG and larger shall be identified per NFPA 70.
- b. Provide grounding lugs for aluminum PV solar module frames of either stainless steel or tin-coated copper.
- c. Bonding conductors must be bare stranded copper, except that sizes 10 AWG and smaller must be bare solid copper. Bonding conductors must be stranded for final connection to motors, transformers, and vibrating equipment.
- d. Provide bonding fittings on concentric/eccentric knockouts with metal conduits for circuits over 250 volts in accordance with NFPA 70.
- e. Provide bonding fittings for ferrous metal conduits enclosing grounding electrode conductors in accordance with NFPA 70.

2.15 PV LIGHTNING PROTECTION SYSTEM

Provide PV Lightning Protection for electrical and mechanical systems in accordance with Section 26 41 00 LIGHTNING PROTECTION SYSTEM and NFPA 780.

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTALLATION INSTRUCTIONS AND INSTALLATION DRAWINGS

- a. Complete all electrical work in accordance with NFPA 70.
- b. Provide all permanent and temporary shoring, anchoring, and bracing required by the nature of this work in order to make all parts absolutely stable and rigid, even when such shoring, anchoring, and bracing are not explicitly called for.
- c. Install the solar PV system in accordance with this section, installation drawings, and the printed installation instructions of the manufacturer.
- d. Follow the manufacturer's installation recommendations to ensure no electricity is being fed to the grid and that all available disconnects are in the open position and fuses are not installed during wiring operations. Utilize on-site measurements in conjunction with engineering designs to accurately cut wires and layout before making permanent connections. Locate wires out of the way of windows, doors, openings, and other hazards. Ensure wires are free of snags and sharp edges that have the potential to compromise the wire insulation. If the system is roof-mounted, it must have direct current ground fault protection in accordance with NFPA 70. Ensure breakers in combiner box are in the off position (or fuses removed) during combiner box wiring. Ensure wires and conduit are not installed as a trip hazard.
- e. Attach solar PV modules to the mounting structure according to the manufacturer's instructions and approved plans.
- f. Install instrumentation according to the manufacturer's instructions, with control panels located as indicated.

3.1.1 Wiring Methods

Furnish and install conductors required to connect incoming and outgoing circuits. Install conductors with conduits, boxes, and terminal cabinets in a totally enclosed installation. Install wiring in accordance with NFPA 70 and Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM.

3.1.2 Electrical Connections

- a. Use twist on wire connectors listed for the environment (i.e. wet, damp, direct burial) and installed per manufacturer's instructions.
- b. Use listed power distribution blocks.
- c. Use terminals containing more than one conductor listed for multiple conductors.
- d. Use connectors and terminals used for fine strand conductors that are listed for use with such conductors.
- e. Utilize appropriate tools for connector type as recommended by the manufacturer.
- f. Tighten and secure module connectors.

- g. Provide corrosion protection in accordance with Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM, and by adding a stainless steel isolating washer between components of incompatible metals on the racking structure.
- h. Rate all enclosures for electrical connections and interconnections for NEMA 6 in accordance with NEMA 250 or IP67 in accordance with ANSI IEC 60529.

3.1.3 Disconnects

Provide disconnecting means in accordance with NFPA 70 requirements.

- a. Install disconnects for all current carrying conductors of the PV source.
- b. Install disconnects for the PV equipment. For inverters and other equipment that are energized from more than one source, group and identify the disconnecting means. Equipment disconnecting means or its remote operating device or the enclosure providing access to the disconnecting means must be capable of being locked in the open position when not within sight or not within 10 ft of the equipment.
- c. Install disconnects and overcurrent protection for all ungrounded conductors in ungrounded (transformerless) PV power systems.
- d. Install disconnecting means with a rapid shutdown function using the rapid shutdown initiation devices as specified in NFPA 70. Each device's "off" position must indicate that the rapid shutdown function has been initiated for all PV systems connected to that rapid shutdown initiation device.
- e. Disconnecting means equipment that performs the rapid shutdown function, other than initiating devices, must be listed for providing rapid shutdown protection.
- f. Buildings with rapid shutdown disconnecting means must have a permanent label as specified in NFPA 70.

3.1.4 Overcurrent and Overvoltage Protection

- a. Install the PV interconnect overcurrent protective device as indicated in accordance with NFPA 70. Overcurrent devices used in PV system dc circuits must be listed for use in PV systems.
- b. Install overvoltage surge protective device (SPD) as indicated and in accordance with NFPA 780 and NFPA 70. PV surge protective devices must be listed for use in PV system and marked "DC" or "PV SPD." If the system inverter is more than 100 ft from the closest combiner or recombiner box, provide additional PV SPDs at the PV output circuit adjacent to the inverter.

3.1.5 Fire Safety

Firestop conduit that penetrates fire-rated walls, fire-rated partitions, or fire-rated floors in accordance with Section 07 84 00 FIRESTOPPING. For all buildings other than one and two-family dwellings and townhouses provide access to roof mounted PV systems by providing a minimum 6 ft wide

clear perimeter around the edges of the roof. Follow OSA safety requirements for roof mounted PV system equipment that requires access for periodic maintenance.

3.2 GROUNDING

3.2.1 PV System Grounding

NFPA 70 and IEEE C2, except provide grounding systems with a resistance to solid earth ground not exceeding 5 ohms. Ground according to racking manufacturer's recommendations.

Install grounding lugs in locations on the solar PV module as designated by the module manufacturer, using stainless steel machine screws of the thread size provided in the pre-tapped holes, along with a stainless steel star washer placed between the grounding lug and the solar module frame.

3.2.2 Grounding Electrodes

Provide driven ground rods as specified in Section 33 71 02 UNDERGROUND ELECTRICAL DISTRIBUTION. Connect ground conductors to the upper end of ground rods by exothermic weld or compression connector. Provide compression connectors at equipment end of ground conductors.

Provide ground ring electrode in accordance with NFPA 780 encompassing the perimeter of each ground-mounted PV array. Interconnect all building grounding electrode systems, including lighting protection.

3.3 INSTALLATION OF EQUIPMENT AND ASSEMBLIES AMENDMENT 0003

3.3.1 Roof Mounted Structures

- a. Ensure roof access points, paths, and clearances are as indicated.
- b. The solar photovoltaic system details must be accepted by warranty roofing system manufacturer prior to installation. Upon completion of a rooftop system installation, obtain written certification that the rooftop warranty is still valid.
 - (1) For installation on a new roof, coordinate with roof manufacturer of new roof and obtain certificate.
 - (2) For installation on existing roof, ~~coordinate with activity to provide certificate of continued validity of warranty from manufacturer.~~ **certification of continuity of roof warranty is not required, as existing roofs are not under warranty.**
- c. Flash and counter-flash all roof penetrations in accordance with ICC IBC.
- d. Provide a minimum 4.5 inches air gap between the solar PV module frame and the roof surface.
- e. Comply with requirements in NRCA 3767 for working with different roof types.

AMENDMENT 0003

3.4 FIELD APPLIED PAINTING

Paint electrical equipment as required to match finish of adjacent surfaces or to meet the indicated or specified safety criteria. Painting must be as specified in Section 09 90 00 PAINTS AND COATINGS.

3.5 FIELD FABRICATED NAMEPLATE MOUNTING

Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of two sheet-metal screws or two rivets.

3.6 WARNING SIGN MOUNTING

- a. Display calculated maximum and minimum voltages and their respective amperages on engraved warning labels.
- b. Display information on the arc flash warning labels in accordance with NFPA 70E.
- c. Provide the number of signs required to be clearly visible and readable from each accessible side. Space the signs in accordance with NFPA 70E.

3.7 CABLE TAG INSTALLATION

Install cable tags in each manhole, handhole, and vault as specified, including each splice. Install cable tags over the fireproofing, if any, and locate the tags so that they are clearly visible without disturbing any cabling or wiring in the manholes, handholes, and vaults.

3.8 FIELD QUALITY CONTROL

Perform in accordance with Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM and 33 71 02 UNDERGROUND ELECTRICAL DISTRIBUTION.

3.8.1 Performance of NABCEP Acceptance Checks and Tests

Perform all inspections using a NABCEP-certified professional and in accordance with NABCEP inspection procedures, and in accordance with the manufacturer's recommendations, and include the following visual and mechanical inspections and electrical tests.

3.8.1.1 PV Modules

- a. Visual and Mechanical Inspection
 - (1) Solar PV module manufacturer, model, and number of modules must match the approved plans.
 - (2) Solar PV modules must be in good conditions (including but not limited to no broken glass or cells, no discoloration, frames not damaged).
- b. Electrical Tests
 - (1) Verify output of PV modules according to manufacturer's recommendations and NABCEP practices.

3.8.1.2 Inverters

a. Visual and Mechanical Inspection

- (1) Inverter manufacturer, model, and number of inverters must match the approved plans.
- (2) Inverters must be in good condition.

b. Electrical Tests

- (1) Verify output of inverters according to manufacturer's recommendations and NABCEP practices.

3.8.2 Performance of NETA Acceptance Checks and Tests

Perform in accordance with the manufacturer's recommendations, and include the following visual and mechanical inspections and electrical tests, performed in accordance with NETA ATS.

3.8.2.1 Grounding System

a. Visual and Mechanical Inspection

- (1) Inspect ground system for compliance with contract plans and specifications.

b. Electrical Tests

- (1) Perform ground-impedance measurements utilizing the fall-of-potential method. On systems consisting of interconnected ground rods, perform tests after interconnections are complete. On systems consisting of a single ground rod, perform tests before any wire is connected. Take measurements in normally dry weather, not less than 48 hours after rainfall. Use a portable ground resistance tester in accordance with manufacturer's instructions to test each ground or group of grounds. Use an instrument equipped with a meter reading directly in ohms or fractions thereof to indicate the ground value of the ground rod or grounding systems under test.
- (2) Submit the measured ground resistance of each ground rod and grounding system, indicating the location of the rod and grounding system. Include the test method and test setup (i.e. pin location) used to determine ground resistance and soil conditions at the time the measurements were made.

3.8.3 Functional Acceptance Tests

- a. Provide final and complete commissioning of the solar PV system in accordance with IEEE 1547.
- b. Verify that all electrical components are installed and connected according to the requirements of the PV electrical drawings, specifications, and manufacturer's written instructions.
- c. Before starting or operating the system, check continuity of all conductors and grounding conductors to verify that there are no faults and that all equipment has been properly installed according to the

manufacturer's recommendations. Check factory instructions to see that installations have been made accordingly. Check equipment for any damage that may have occurred during shipment, after delivery, or during installation. Replace damaged equipment.

- d. Before starting or operating the system, obtain a final inspection approval and final inspection from the Contracting Officer. Be present on site for both of these inspections.
- e. Make final adjustments to all inverters and monitoring equipment so that they will be placed in an acceptable operating condition. Adjustable parameters must be set so that the PV system will produce the maximum possible amount of energy on an annual basis.

AMENDMENT 0003

3.9 COMMISSIONING

Conduct Commissioning, after the system is installed and is ready for operation, in accordance with Section 01 91 00.15 BUILDING COMMISSIONING, item (6) renewable energy generation, to verify that the completed and installed system meets the requirements of IEEE 1547. Commissioning will only be for the PV array system. The Contractor's DOR is responsible for editing Section 01 91 00.15 BUILDING COMMISSIONING with requirements for PV array system commissioning. Tailor for non-building systems. The PV array system to be commissioned will include the PV solar arrays, mounting systems, inverters, micro-grid control panels, battery storage system (ESS), charge controllers, and all required electrical safety equipment per NFPA 70.

AMENDMENT 0003

3.9.1 Commissioning Agent Qualification

Individual qualified in testing protective equipment (e.g., professional engineer, factory-certified technician, licensed electrician with experience in testing protective equipment) must perform or directly supervise commissioning tests.

3.9.2 Commissioning Plan and Schedule

Develop and implement a commissioning plan and commissioning schedule in accordance with Section 01 91 00.15 BUILDING COMMISSIONING.

3.9.3 Start-up Pre-functional Checklists

Carry out a checklist of startup requirements and conduct a series of safety tests to ensure proper installation, safe operation, and performance conforming to specification.

3.9.4 Functional Performance Testing

Prepare test procedures and conduct functional performance testing of the installed system. Include the following test requirements:

- a. All inverter startup tests as specified by the inverter manufacturer in the inverter operation manual;
- b. Actual power;

- c. Loss of grid;
- d. Grid resume;
- e. Data monitoring check out;
- f. V_{oc} measurement of every source circuit and log it;
- g. Verify tightness of all wiring terminations;
- h. Verify proper markings and labeling of all wire terminations and enclosures;
- i. Verify startup/shut down procedures;
- j. Verify system 5 minutes delay upon restart;
- k. Verify PV array quick connectors are fully mated and wires are neatly secured;
- l. Verify no debris on the modules, no damaged or broken modules;
- m. Verification and inspections (see IEEE 1547.1 7.2)
- n. Field-conducted type and production tests (see IEEE 1547 7.3)
- o. Unintentional islanding functionality test (see IEEE 1547.1)
- p. Cease-to-energize functionality test (see IEEE 1547.1)
- q. Unintentional islanding functionality test (see IEEE 1547.1)
- r. Cease-to-energize functionality test (see IEEE 1547.1 7.5)
- s. Revised settings (see IEEE 1547.1 7.6)

3.9.5 Functional Performance Testing Results

Coordinate, observe and record the results of the functional performance testing. Coordinate retesting as necessary until satisfactory performance is verified. Verify the intended operation of individual components and system interactions under various conditions and modes of operation.

Document items of non-compliance in materials, installation or operation. Immediately address observed non-conformance and deficiencies in terms of notification to responsible parties, and provide recommended actions to correct deficiencies.

3.9.6 Final Commissioning Report

Prepare and submit final commissioning report. Summarize all tasks, findings, conclusions, and recommendations of the commissioning process in accordance with IEC 62446. Include the results of all tests and a listing of the final settings.

3.10 FINAL ACCEPTANCE

The acceptance of the solar PV system occurs only after all deficiencies

identified by the functional acceptance tests and commissioning report are corrected, and the system operates successfully during a 30 day initial testing period.

The Contracting Officer must sign appropriate certificates, if equipment and systems are operating satisfactorily in accordance with the specifications, stating the system's operation has been tested and accepted at the end of the final start-up and testing.

3.11 CLOSEOUT ACTIVITIES

3.11.1 Demonstration

Upon completion of the work and at a time approved by the Contracting Officer, provide instructions by a qualified instructor to the Government personnel in the proper adjustment, system operation, and maintenance of the specified systems and equipment, including pertinent safety requirements as required. Government personnel must receive training comparable to the equipment manufacturer's factory training. Instructor must provide a separate training course for the monitoring system.

3.11.2 Instructor's Qualification Resume

Instructor(s) must be employee(s) of manufacturer. Instructors must be thoroughly familiar with all parts of the installation and trained in operating theory as well as practical operation and maintenance work. Submit the name(s) and qualification resume(s) of instructor(s) to the Contracting Officer for approval.

3.11.3 Training

Furnish training service by a factory-trained representative. Document that each qualified employee has received the required training in accordance with 29 CFR 1910. Maintain all training documentation in a central location for the entire employee's employment duration. Minimum documentation data includes employee's name, training name, and date(s) of training.

The training period must consist of a total of 4 hours of normal working time and begin after the system is functionally completed but prior to final acceptance tests. Submit the training course curriculum for approval, along with the proposed training date, at least 14 days prior to the date of proposed conduction of the training course. Instruction must be video-recorded and given during the first regular work week after the equipment or system has been accepted and turned over to the Government for regular operation. Provide video recording and any PowerPoint slides as part of the final documentation for those that cannot attend. Extend safety training to fire department representatives. Coordinate with Contracting Officer for Fire Department first responder training.

-- End of Section --

APPENDIX C

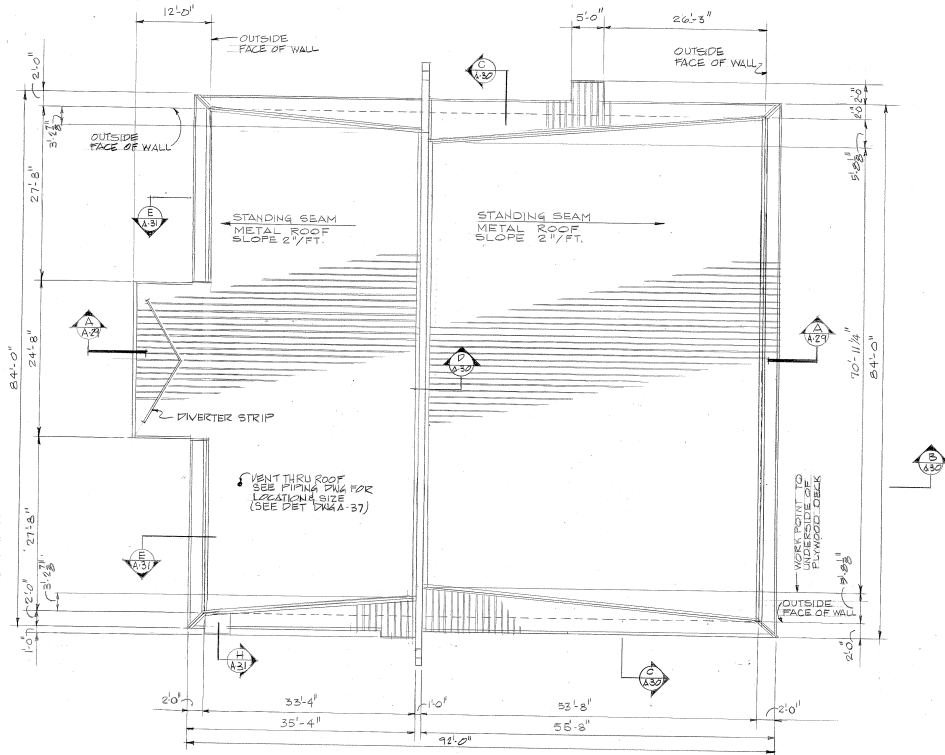
RFP DRAWINGS

(PROVIDED SEPARATELY)

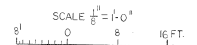
APPENDIX D

EXISTING CONDITIONS DRAWINGS

REVISIONS				
NO.	DATE	DESCRIPTION	DATE	APPROVED
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ROOF PLAN — WASTE TREATMENT BUILDING
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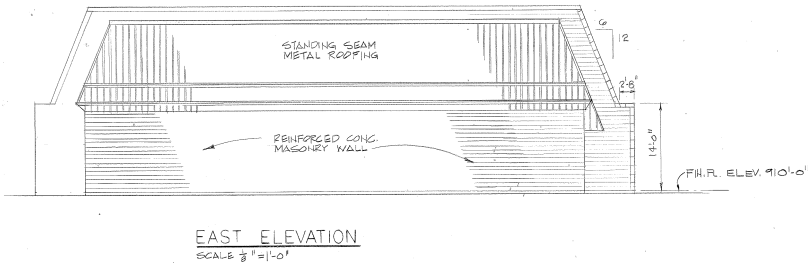
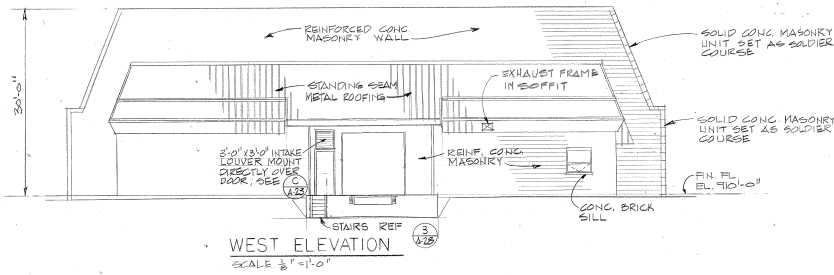
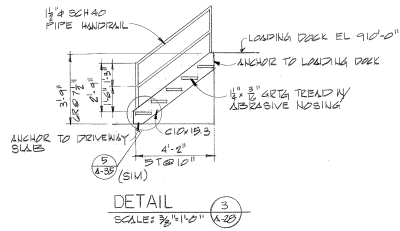


TO SAVE A LIFE
YOU CAN'T BEAT SAFETY

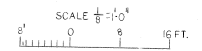
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FORT MC CLELLAN, ALABAMA PN 287 DECONTAMINATION TRAINING FACILITY SERVICE BUILDINGS # ROOF PLANS & DETAILS			
SH. REF. NO. A-27	SPEC. NO. DACAD-83- B-0058	FILE NO. F.M.C. 37-52 DRAWING NO. E-179-87-01	SHEET NO. 52 OF 155
DATE: JUNE, 1983		SCALE:	

REVISED BY CAD REQ G-63

REVISIONS				
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WASTE TREATMENT BUILDING

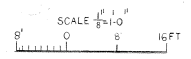
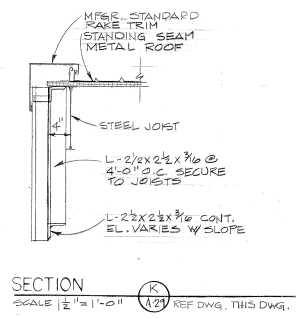
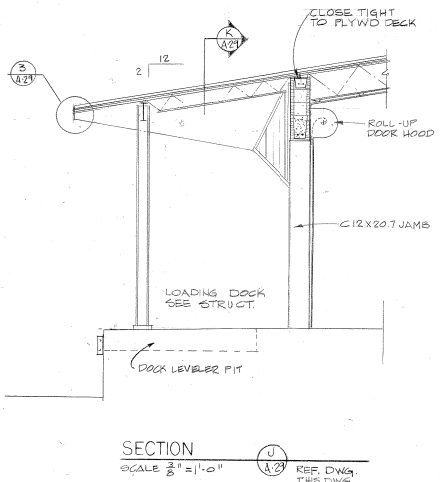
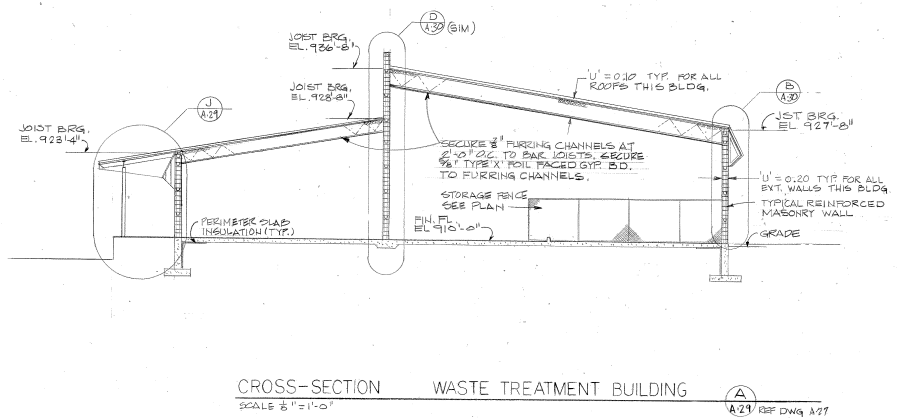
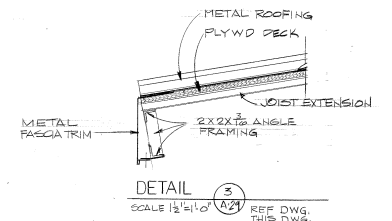
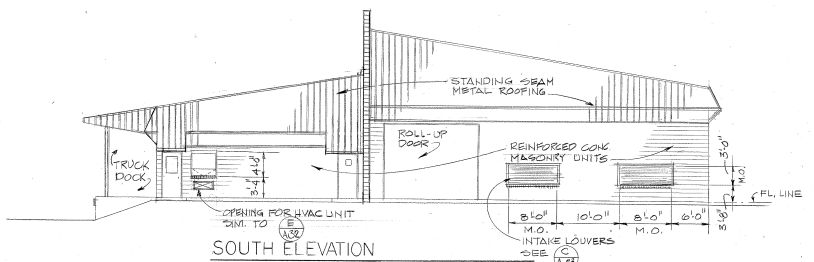
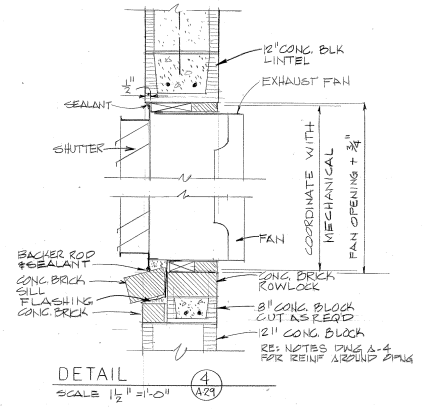
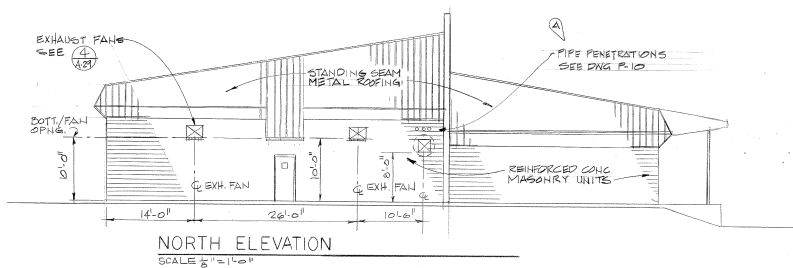


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FORT MC CLELLAN, ALABAMA P.N. 287 DECONTAMINATION TRAINING FACILITY SERVICE BUILDINGS - ELEVATIONS & SECTIONS			
SHEET NO. A-28	SPEC. NO. DACAD-83- B-0058	FILE NO. P.M.C. 37-53 DRAWING NO. F-179-87-01	DATE: JUNE, 1983 SHEET 53 OF 155

REVISED BY C/O REQ G-63

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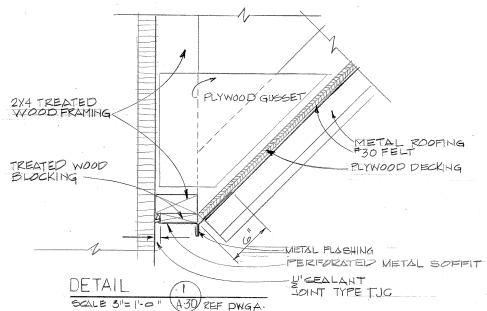


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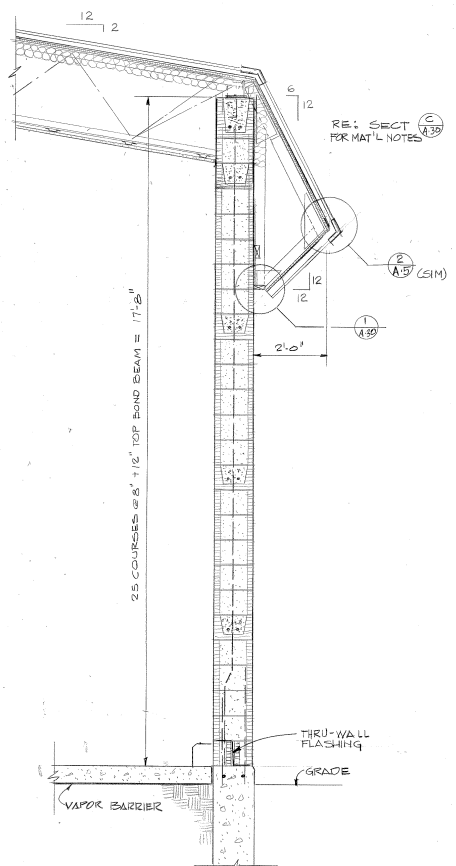
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 CORPS OF ENGINEERS
 MOBILE, ALA.
 FORT MCLELLAN, ALABAMA
 P.N. 287 DECONTAMINATION
 TRAINING FACILITY
 WASTE TREATMENT BUILDING - ELEVATIONS & SECTIONS

SH. REF. NO.	SPEC. NO.	SIT.	FILE NO.
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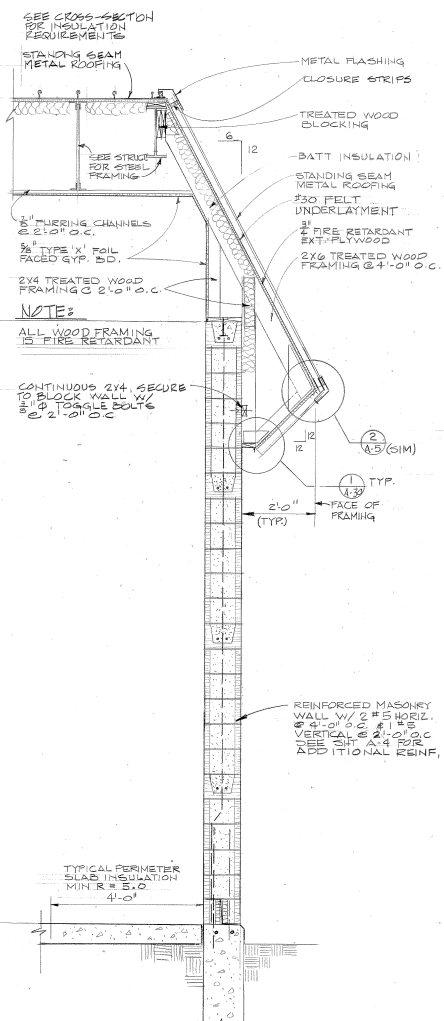
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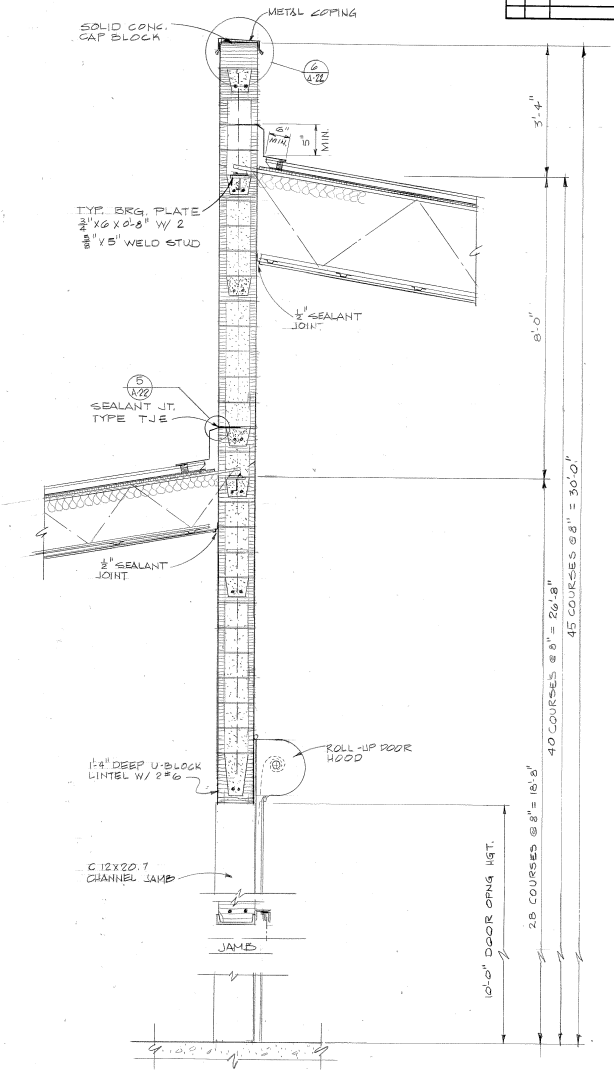
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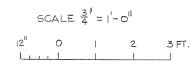
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A-27
A-29



SECTION (C)
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A-30 REF DWG. A-26
A-27
A-29



SECTION (D)
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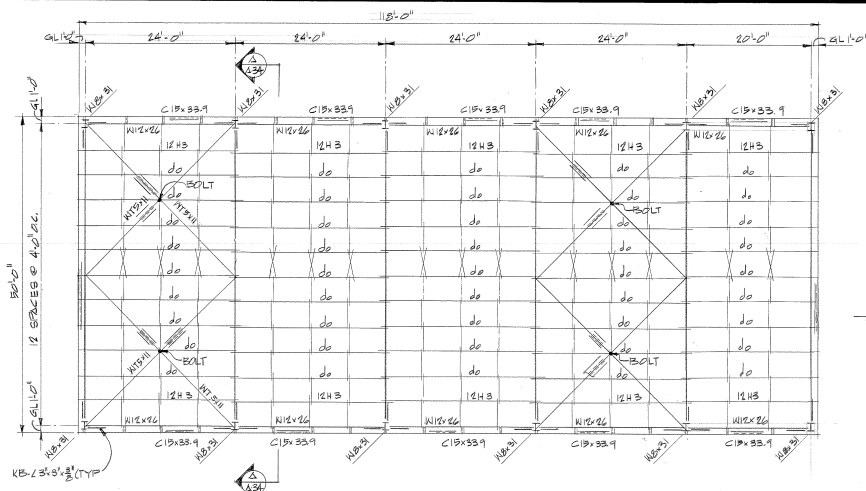
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2124028 ALABAMA

U.S. ARMY ENGINEER DISTRICT, MOBILE
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MOBILE, ALA.

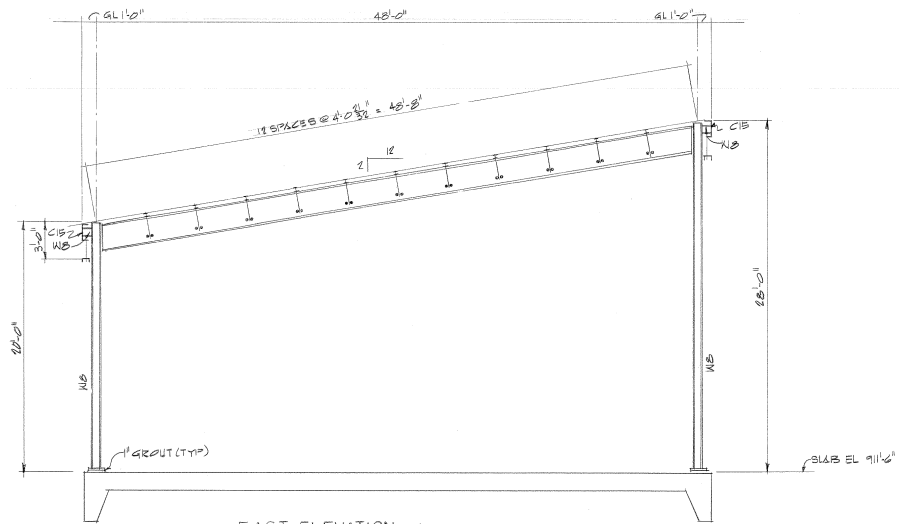
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PN 287 DECONTAMINATION
TRAINING FACILITY
WASTE TREATMENT BUILDING "WALL SECTIONS"

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SHEET 55 OF 155

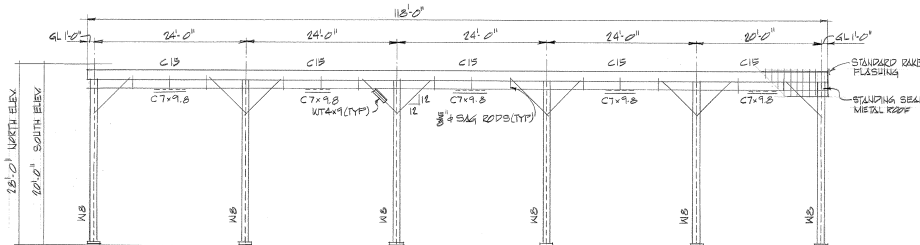
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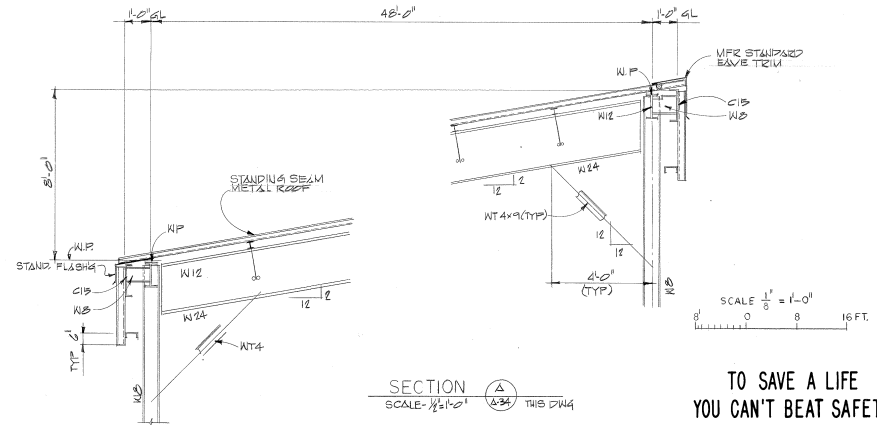
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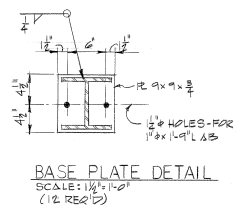
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WEST ELEVATION (OPPOSITE HAND)
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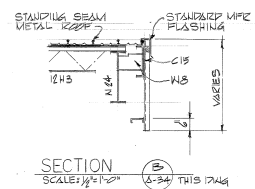
NORTH ELEVATION (AS NOTED)
SOUTH ELEVATION (AS NOTED)
SCALE: 1/8" = 1'-0"



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SCALE: 1/8" = 1'-0"



BASE PLATE DETAIL
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(12 REB'D)



SECTION B-B THIS DRAWING
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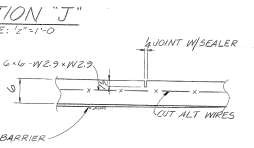
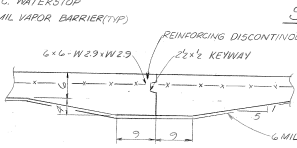
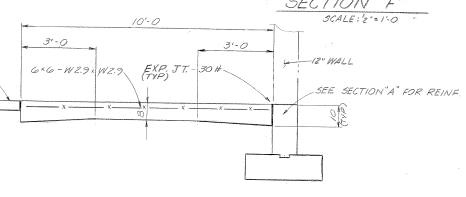
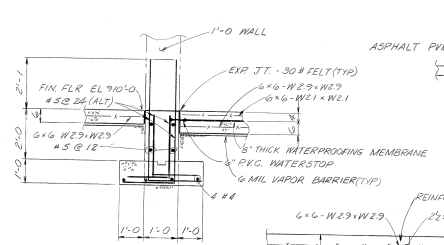
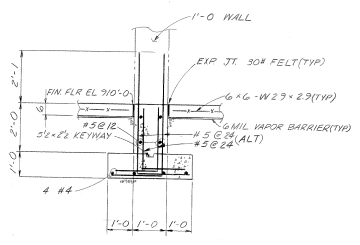
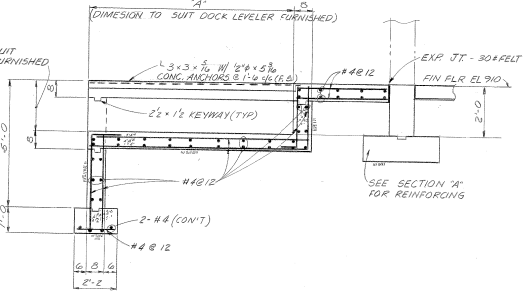
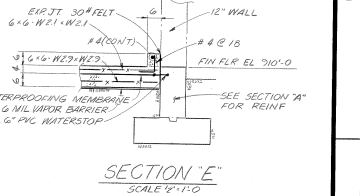
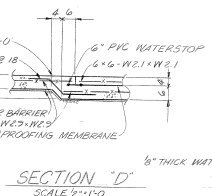
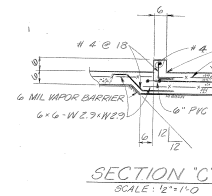
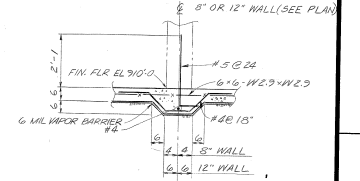
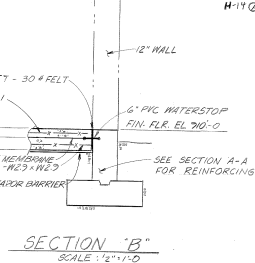
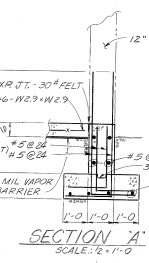
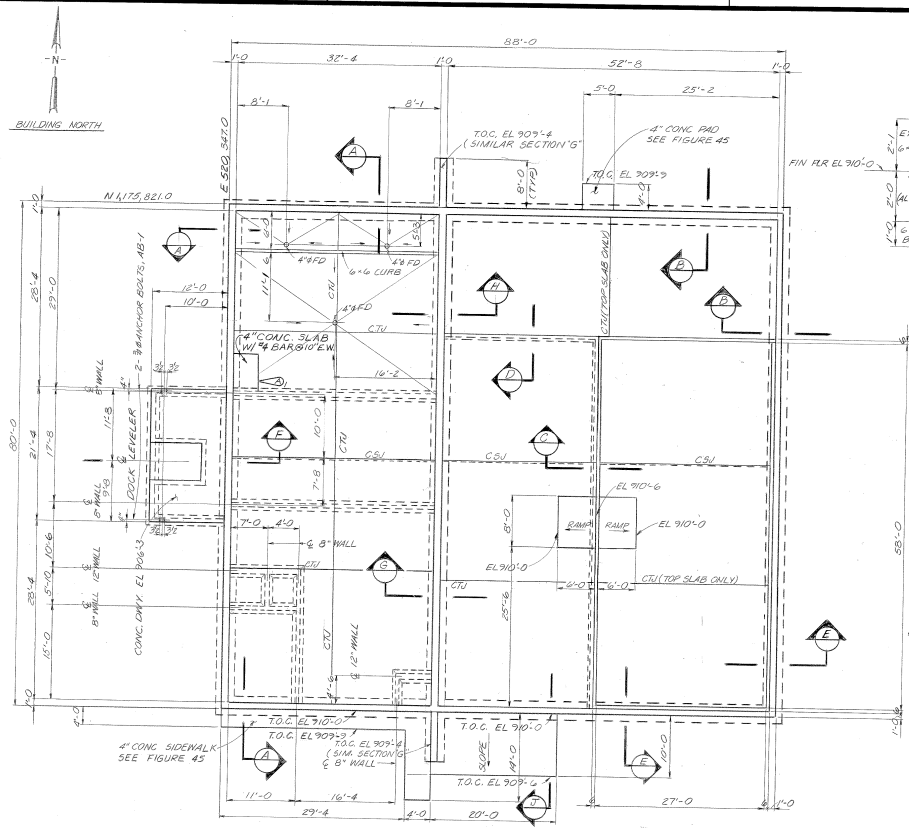
TO SAVE A LIFE
YOU CAN'T BEAT SAFETY

U.S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.

FORT MC CLELLAN, ALABAMA
PN 287 DECONTAMINATION
TRAINING FACILITY
INCINERATOR BLDG ROOF PLAN, ELEV'S, & DET'L'S

SH. REF. NO. A-34	SPEC. NO. DACKOH-83 B-0058	FILE NO. FMC 37-59
DATE JUNE 1983	DRAWING NO. F-179-87-01	SHEET NO. 59 OF 155

REVISIONS				
SYM	ZONE	DESCRIPTION	DATE	APPROVED
1	U-3	ADDED FUEL OIL PUMP FDTN.	3/11/53	[Signature]



- NOTE:
- CONSTRUCTION JOINT AND CONTROL JOINT MAY BE INTERCHANGED TO SUIT CONCRETE POUR SCHEDULE.
 - SLAB POURS SHALL NOT EXCEED 60 FEET IN ANY ONE DIRECTION BETWEEN FORMED CONSTRUCTION JOINTS (CSJ). EACH POUR SHALL BE SUBDIVIDED INTO SECTIONS, NOT EXCEEDING 30 FEET IN ANY ONE DIRECTION, BY CONTROL JOINTS CONSTRUCTED DURING THE SLAB FINISHING OPERATION.
 - EXACT LOCATION OF CONTROL JOINTS SHALL BE PLANNED PRIOR TO CUTTING REINFORCING AND PLACING OF CONCRETE. FIELD CONTROL JOINTS MADE BY SAWING SHALL BE MADE AS SOON AS THE CONCRETE SURFACE IS FIRM ENOUGH NOT TO BE TORN OR DAMAGED BY THE SAW AND BEFORE RANDOM SHRINKAGE CRACKS CAN FORM IN THE CONCRETE SLAB. AT WALLS, CURBS OR OTHER PLACES WHERE THE SAW CAN NOT GET INTO THE CORNER, TOLLER OR FORMED JOINTS SHALL BE PROVIDED TO JOIN THE SAW CUT JOINT AND COMPLETE THE CONTROL JOINT.

- NOTES:
- FOR GENERAL CONC NOTES SEE DWG 5-1.
 - TOP OF FLOOR DRAIN (FD) THIS DWG, EL 909'-11"
 - CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL FOUNDATION AND ANCHOR BOLT REQUIREMENTS AS REQUIRED TO FIT EQUIPMENT FURNISHED.

SCALE 1" = 8'-0"
TO SAVE A LIFE YOU CAN'T BEAT SAFETY

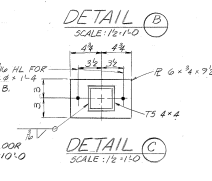
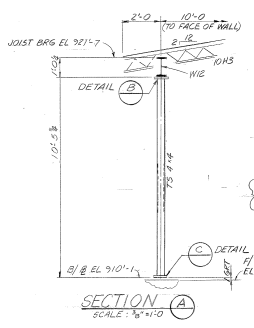
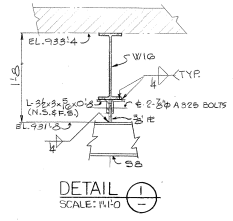
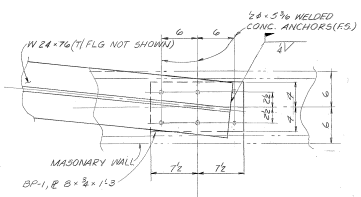
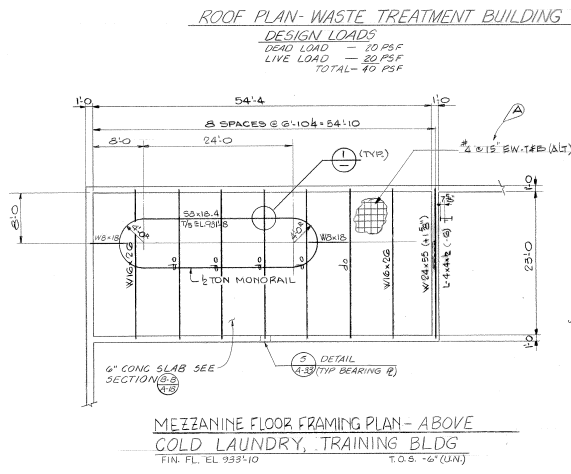
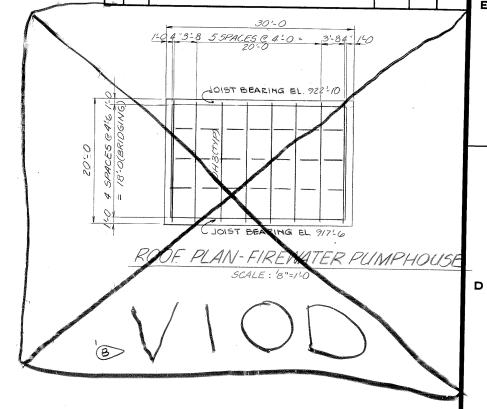
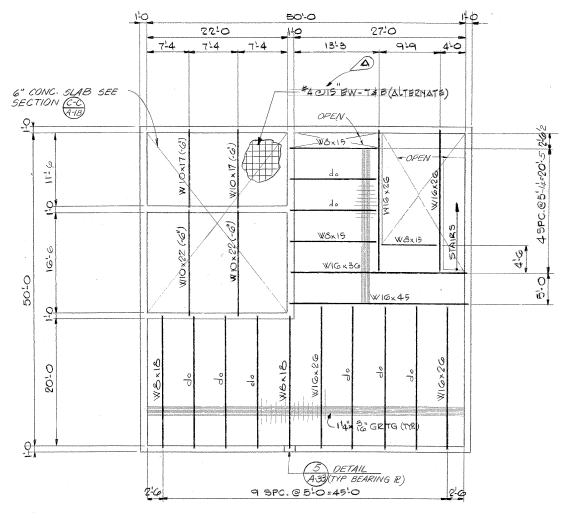
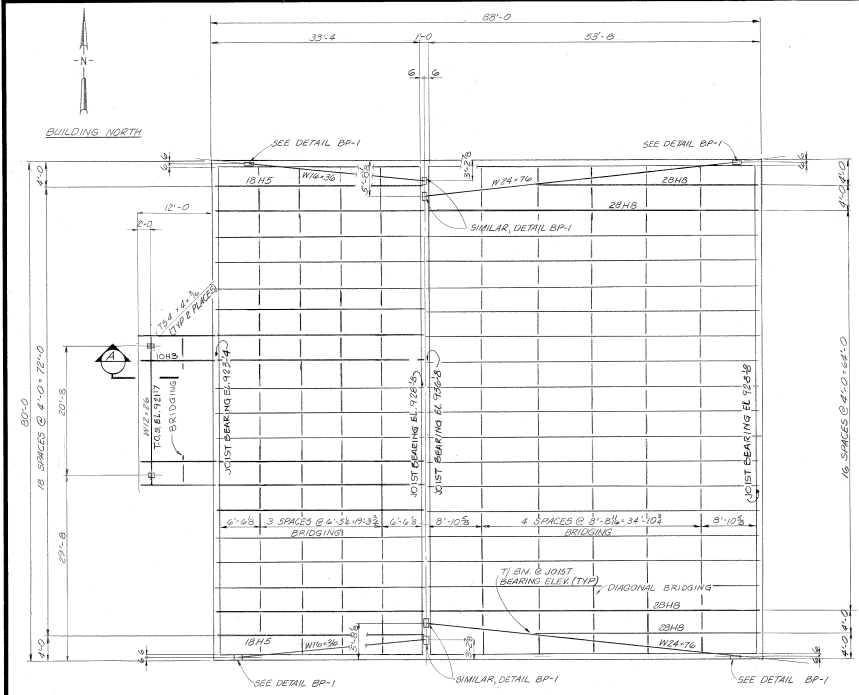
U.S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.

FORT MCLELLAN ALABAMA
PN 287 DECONTAMINATION
TRAINING FACILITY
WASTE TREATMENT BUILDING FOUNDATION PLAN

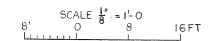
BR. SET NO. S-6
SPEC. NO. DACK 01-B3
-B-0058
DATE: JUNE, 1953
DRAWING NO. F-132-07-01
SHEET 68 OF 155

Revised By C/D RER H-14

REVISIONS				
SYL	ZONE	DESCRIPTION	DATE	APPROVED
1		GENERAL REVISION	7-7-83	K. J. [Signature]
		REMOVED FIREWATER PUMPHOUSE	6-24-83	[Signature]



NOTES:
 1. FOR GENERAL STEEL NOTES SEE DWG. S-2



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U.S. ARMY ENGINEER DISTRICT, MOBILE
 CORPS OF ENGINEERS
 MOBILE, ALA.

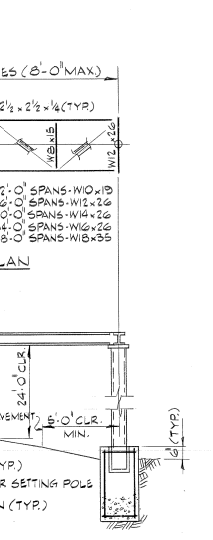
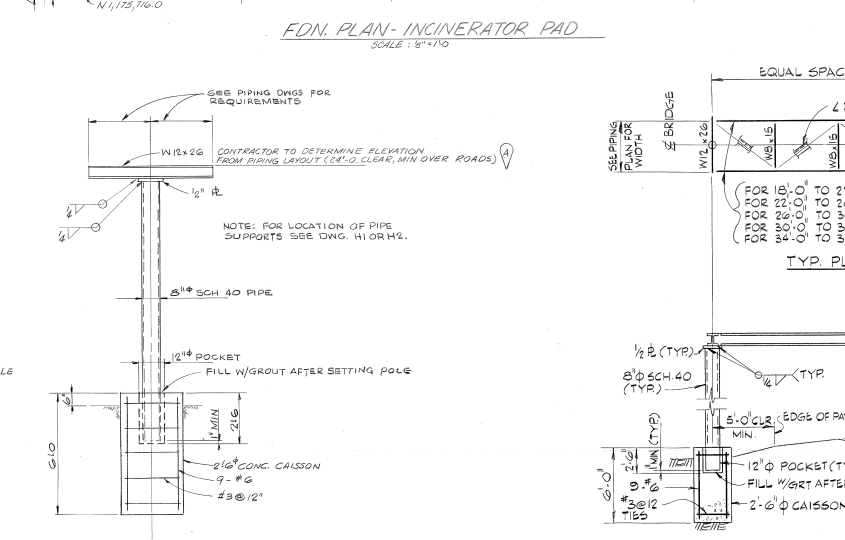
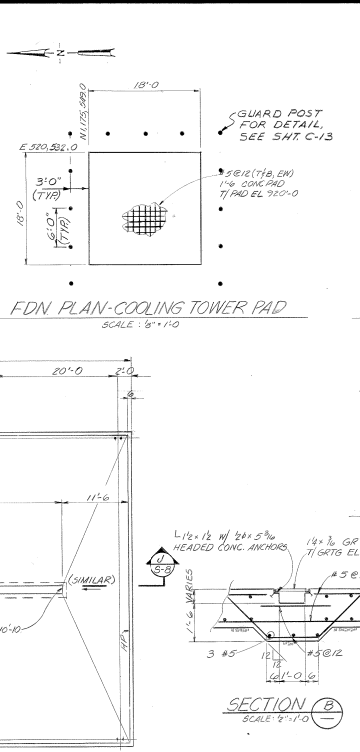
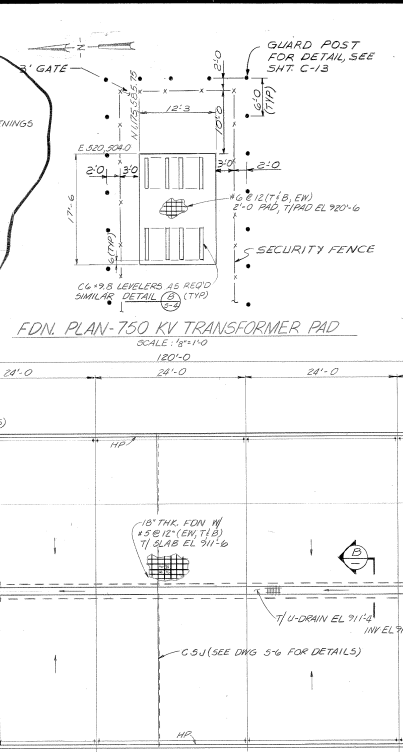
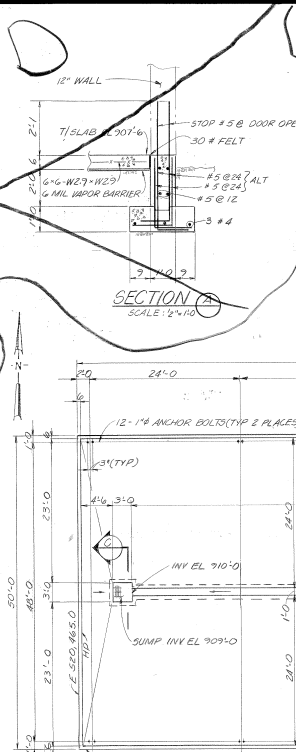
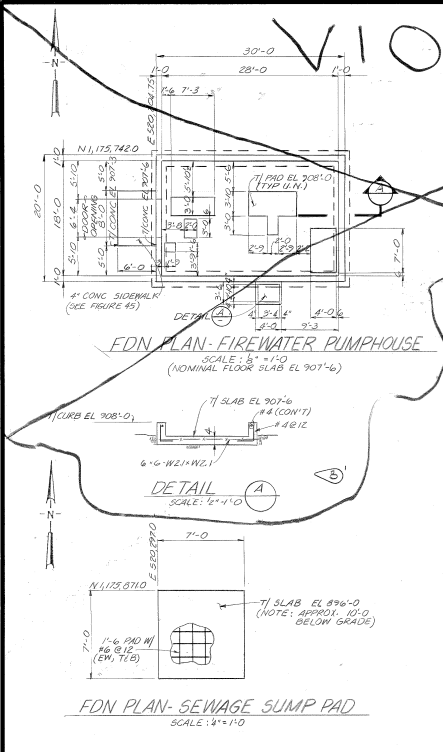
FORT MCLELLAN, ALABAMA
 PN 287 DECONTAMINATION
 TRAINING FACILITY
 W.T. BLDG & FIRE PUMP BLDG ROOF FRMG PLANS

SR. REF. NO. S-7
 SPEC. NO. DAKA01-83
 DATE: JUNE, 1983

FILE NO. FMC 37-69
 DRAWING NO. F-79-87-01
 SHEET 69 OF 155

REVISED BY C/O REQ G-63

REVISIONS				
NO.	ZONE	DESCRIPTION	DATE	APPROVED
1		GENERAL REVISION	11/83	R 147
2		REMOVED PUMPHOUSE DET./ADDED DET.	10/83	271



NOTES:
1. FOR GENERAL CONC. NOTES SEE DWG. 5-1.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL FOUNDATION & ANCHOR BOLT REQUIREMENTS AS REQUIRED TO FIT EQUIPMENT FURNISHED.

TO SAVE A LIFE
YOU CAN'T BEAT SAFETY

3.5 ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
MOBILE, ALA.

FORT MCCALLAN, ALABAMA
PN 287 DECONTAMINATION
TRAINING FACILITY
FIRE PUMP BUILDING FOUNDATION PLAN & MISC. DET.

SHEET NO. 5-9	DWG. NO. B-0058	FILE NO. FMC 37-71
DATE: JUNE, 1963	DRAWING NO. F-179-87-01	
SCALE:	DATE: JUNE, 1963	SHEET 71 OF 155