

2. AMENDMENT/MODIFICATION NO. 0008	3. EFFECTIVE DATE 02/14/01	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. <i>(If applicable)</i>
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6. ISSUED BY U.S. ARMY ENGINEER DISTRICT, HONOLULU CORPS OF ENGINEERS, BUILDING S-200 FORT SHAFTER, HAWAII 96858-5440 CONTRACT SPECIALIST: JODY MURAOKA	7. ADMINISTERED BY <i>(If other than Item 6)</i>
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8. NAME AND ADDRESS OF CONTRACTOR <i>(No., street, county, State and ZIP Code)</i>	(✓)	9A. AMENDMENT OF SOLICITATION NO. DACA83-00-B-0008
	(X)	9B. DATED <i>(SEE ITEM 11)</i> 10/19/00
		10A. MODIFICATION OF CONTRACTS/ORDER NO.
		10B. DATED <i>(SEE ITEM 13)</i>

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

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

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.)*
FY00 BUP, Renovate Building 502, Fort Shafter, Oahu, Hawaii

See Page 2 of 2 Pages

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

15A. NAME AND TITLE OF SIGNER <i>(Type or print)</i>	16A. NAME AND TITLE OF CONTRACTING OFFICER <i>(Type or print)</i>
15B. CONTRACTOR/OFFEROR _____ <i>(Signature of person authorized to sign)</i>	15C. DATE SIGNED
16B. UNITED STATES OF AMERICA BY _____ <i>(Signature of Contracting Officer)</i>	16C. DATE SIGNED

1. **CHANGES TO THE SOLICITATION.** Attached hereto are revised pages to the solicitation. The revision mark “(Am-0008)” is shown on each revised page.

a. **REVISED PROVISIONS/CLAUSES/PAGES.** Following are revised pages to the solicitation. Changes are indicated in **bold** print. Although the entire sections are being re-issued under Am-0008, only the following pages/provisions/clauses changed in these sections.

Section 00010

Page 00010-1

Section 00600

Clause 52.209-5, Certification Regarding Debarment, Suspension, Proposed Debarment & Other Responsibility Matters (Jan 2001)

Section 00800

Paragraph S-36.9, As-built Drawings (Jan 2001)

Section 01000

Section 04200, Paragraphs 1.2, 1.3.1 and 2.3
Section 05500, Paragraph 2.3

b. **NEW PAGES.** Although the entire section is being re-issued under Am-0008, only the following paragraph is added to this section.

Section 00800

Paragraph S-23.2, Asbestos Prohibition & Certification (Sep 2000)

2. **CHANGES TO DRAWINGS.**

REVISED DRAWINGS (ISSUED). The following revised drawings replace the like-numbered drawings and are issued herewith:

<u>REV</u>	<u>RING NO.</u>	<u>DRAWING NO.</u>	<u>SHEET NO.</u>	<u>LTR</u>	<u>REVISION DATE</u>
	2	721-11-18	T-2	c	12/19/00
	28	721-11-18	A-22	c	12/19/00
	31	721-11-18	A-25	c	12/19/00

3. The bid opening date is set for February 26, 2001, 2:00 P.M., Hawaiian Standard Time.

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NUMBER	2. TYPE OF SOLICITATION	3. DATE ISSUED	PAGE OF PAGES
	DACA83-00-B-0008	<input checked="" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED (RFP)	10/19/00	

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

4. CONTRACT NUMBER	5. REQUISITION/PURCHASE REQUEST NUMBER	6. PROJECT NUMBER
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7. ISSUED BY U.S. Army Engineer District, Honolulu ATTN: CEPOH-CT-C Building 230 Fort Shafter, Hawaii 96858-5440	CODE	8. ADDRESS OFFER TO U.S. Army Engineer District, Honolulu ATTN: CEPOH-CT-C Building 230 Fort Shafter, Oahu, Hawaii 96858-5440 (Deliver hand-carried bids to Room 115, Building 200, Fort Shafter, Hawaii 96858-5440)
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9. FOR INFORMATION CALL	A. NAME Jody Muraoka	B. TELEPHONE NUMBER (Include area code) (NO COLLECT CALLS) (808)438-8575
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SOLICITATION

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

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying number, date):

Invitation for Bids No. DACA83-00-B-0008, FY00 BUP , Renovate Building 502, Fort Shafter, Oahu, Hawaii

SEE MAIN TABLE OF CONTENTS

11. The Contractor shall begin performance within 7 calendar days and complete it 336 calendar days after award, notice to proceed. This performance period is mandatory, negotiable. (See FAR Clause 52.211-10.)

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	12B. CALENDAR DAYS 14
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13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original 0 copies to perform the work required are due at the place specified in Item 8 2:00 P.M. (hour) local time 02/26/01 (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee is, is not required.

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

D. Offers providing less than 120 calendar days for Government acceptance after the date offers are due will not be considered and be rejected.

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code) DUNS No. _____ CAGE Code _____ CODE _____ FACILITY CODE _____	15. TELEPHONE NUMBER (Include area code) 16. REMITTANCE ADDRESS (Include only if different than Item 14)
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17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this accepted by the Government in writing within _____ calendar days after the date offers are due. (Insert any number equal or greater than minimum requirement stated in 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)

AMOUNTS	(SEE "BIDDING SCHEDULE", Section 00010)
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18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGEMENT OF AMENDMENTS
 (The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)	20B. SIGNATURE	20C. OFFER DATE
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AWARD (To be completed by Government)

21. ITEMS ACCEPTED

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA
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24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)	ITEM	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 253(c) ()
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26. ADMINISTERED BY CODE	27. PAYMENT WILL BE MADE BY
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CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

<input type="checkbox"/> 28. NEGOTIATED AGREEMENT (Contractor is required to sign document and return _____ copies to the issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or	<input type="checkbox"/> 29. AWARD. (Contractor is not required to sign this document.) offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.
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30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)	31A. NAME OF CONTRACTING OFFICER (Type or print)
30B. SIGNATURE	31B. UNITED STATES OF AMERICA
30C. DATE	BY
	31C. AWARD DATE

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CLAUSES INCORPORATED BY FULL TEXT

52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods of factors used to calculate the prices offered:

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

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

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

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

(2) (i) Has been authorized, in writing, to act as an agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above

_____ (insert full name of person(s)
in the offeror's organization responsible for determining the prices offered in this bid or proposal,
and the title of his or her position in the offeror's organization);

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

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

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

(End of clause)

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

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby

incorporated by reference in paragraph (b) of this Certification.

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

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

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

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

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

(End of provision)

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

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

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

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

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

(d) Taxpayer Identification Number (TIN).

___ TIN:-----

___ TIN has been applied for.

___ TIN is not required because:

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

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049-4;

___ Other-----

(f) Common parent.

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

___ Name and TIN of common parent:

Name-----

TIN-----

(End of provision)

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

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

(b) Representation. [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small

Business Program Representations, of this solicitation.] The offeror represents that it () is a women-owned business concern.

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (JAN 2001)

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

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

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

(B) Have [] have not [], within the three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property;

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

(ii)(A) The offeror, aside from the offenses enumerated in paragraphs (a)(1)(i)(A), (B), and (C) of this provision, has [] has not [] within the past three years, relative to tax, labor and employment, environmental, antitrust, or consumer protection laws--

(1) Been convicted of a Federal or state felony (or has any Federal or state felony indictments currently pending against them); or

(2) Had a Federal court judgment in a civil case brought by the United States rendered against them; or

(3) Had an adverse decision by a Federal administrative law judge, board, or commission indicating a willful violation of law.

(B) If the offeror has responded affirmatively, the offeror shall provide additional information if requested by the Contracting Officer; and

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

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

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

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

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

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

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

(End of provision)

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real

estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclose such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each government.

(End of provision)

252.209-7003 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (MAR 1998)

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

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS. (OCT 2000)--ALTERNATE I (OCT 2000) ALTERNATE II (OCT 2000)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 233220.

(2) The small business size standard is \$27.5M.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

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

(2) *[Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.]* The offeror represents, for general statistical purposes, that it () is, () is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) *[Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.]* The offeror represents as part of its offer that it () is, () is not a women-owned small business concern.

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

(5) [Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.] The offeror represents as part of its offer that it () is, () is not a service-disabled veteran-owned small business concern.

(6) [Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that -

(i) It () is, () is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office of ownership, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It () is, () is not a joint venture that complies with the requirements of 13 CFR Part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) [Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.] The offeror shall check the category in which its ownership falls:

_____ Black American.

_____ Hispanic American.

_____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

_____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

_____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

_____ Individual/concern, other than one of the pre-ceding.

(c) *Definitions.* As used in this provision—

“Service-disabled veteran-owned small business concern”—

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

“Small business concern” means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (a) of this provision.

“Veteran-owned small business concern” means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 per-cent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans. “Women-owned small business concern” means a small business concern—

(1) Which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

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

(d) *Notice.* (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall—

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.219-2 EQUAL LOW BIDS. (OCT 1995)

(a) This provision applies to small business concerns only.

(b) The bidder's status as a labor surplus area (LSA) concern may affect entitlement to award in case of tie bids. If the bidder wishes to be considered for this priority, the bidder must identify, in the following space, the LSA in which the costs to be incurred on account of manufacturing or production (by the bidder or the first-tier subcontractors) amount to more than 50 percent of the contract price.

(c) Failure to identify the labor surplus area as specified in paragraph (b) of this provision will preclude the bidder from receiving priority consideration. If the bidder is awarded a contract as a result of receiving priority consideration under this provision and would not have otherwise received award, the bidder shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.

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

(a) Definition.

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

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

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

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

No. of Employees Avg. Annual Gross Revenues

- 50 or fewer \$1 million or less
- 51 - 100 \$1,000,001 - \$2 million
- 101 - 250 \$2,000,001 - \$3.5 million
- 251 - 500 \$3,500,001 - \$5 million
- 501 - 750 \$5,000,001 - \$10 million
- 751 - 1,000 \$10,000,001 - \$17 million
- Over 1,000 Over \$17 million

(End of provision)

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) [] It has, [] has not participated in a previous contract or subcontract subject to the Equal

Opportunity clause of this solicitation;

(b) It has, has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

(i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

(iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

S-7 IDENTIFICATION OF PARTNERS

(Applicable where the offeror has identified itself as a partnership or joint venture.)

The full names of all partners are listed below:

[End of Statement]

S-28.5 IDENTIFICATION OF BID GUARANTEE

(Applicable if bid/offer exceeds \$100,000)

A bid guarantee, consisting of _____, in the amount of _____ is enclosed with this offer.

(SPECIFY THE TYPE AND THE AMOUNT OF THE BID GUARANTEE SUBMITTED.)

[End of Statement]

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SECTION 00800 Special Contract Requirements

CLAUSES INCORPORATED BY FULL TEXT

S-8 UTILITY OUTAGES

Utility outages shall be as hereinafter specified, unless otherwise indicated or specified. Interruptions to existing utilities shall be held to a minimum. Outages to facilitate connections to existing systems shall be scheduled to take place during periods of minimum demand. The Contractor shall submit a planned schedule of outages to the Contracting Officer for proper coordination with existing facilities, and shall notify the Contracting Officer in writing not less than 45 days in advance of the intended interruptions. Planned schedule of outages shall include specific dates, times, and anticipated duration of proposed outages. In the event the proposed outages interfere with station operations, the Contracting Officer will consider or offer alternate dates and/or times. Outages may be permitted during off-peak hours, hours of darkness, weekends, and holidays, at no additional cost to the Government. Work shall be planned to minimize outages. No utility outage will be permitted until the Contractor receives written approval from the Contracting Officer.

[End of Statement]

S-36.9 AS-BUILT DRAWINGS (JAN 2001)

The Contractor shall keep on the job site two complete sets of drawings. These drawings will be identified as working 'As-Built' drawings and shall be used to record all changes from the original drawings and specifications, the exact 'As-Built' locations, sizes and types of equipment, etc. These working 'As-Built' drawings shall be corrected daily and the quality of draftsmanship shall be compatible with the draftsmanship of the original drawings.

The working As-Built drawings will be reviewed monthly by the Contracting Officer's Representative (COR) to assure satisfactory performance in maintaining an accurate and current recording of as-built conditions. Failure to maintain an accurate and current recording of as-built conditions, as determined by the COR, shall be cause for appropriate action by the Contracting Officer, including withholding a part of contract payment until such time as the deficiencies have been corrected.

At the final inspection or upon beneficial occupancy of the facility by the user, whichever comes first, the Contractor shall provide one of the two sets of working As-Built drawings to the COR for turnover with the facility. The Contractor shall continue to maintain the remaining set of working As-Built drawings until such time the COR expects no more additional changes and or modifications to the project. Contractor shall obtain a copy of the CADD files from the COR. Within 20 calendar days of receipt of a request by the COR, the Contractor shall submit to the Contracting Officer one (1) full set of CADD files in Microstation 95 or later version (.dgn) format on CD-ROM. The contractor modifications to the CADD files shall be completed with native Microstation 95 or later version (.dgn) vector graphic Commands. 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 contract 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. **All contract drawings shall be marked either 'As-Built No Change' and dated, denoting no revisions on the sheet, or 'As-Built' and dated, denoting one or more revisions. If Contractor's shop drawings are used as as-built conditions, they**

should be added to the contract drawings and listed on the Schedule of Drawings as new sheets - Contractor's Shop Drawings. The contract drawing that is being replaced by the shop drawing should have a note "FOR AS-BUILT CONDITIONS, SEE CONTRACTOR'S SHOP DRAWING, SHT.___, RING ___."

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 submission.

[End of Statement]

S-36.8 GROUND-FAULT CIRCUIT INTERRUPTERS

Ground-fault circuit interrupters for all 125-volt single phase 15- and 20-ampere receptacle outlets which are not part of the permanent wiring of the building or structure shall be provided by the Contractor in accordance with Section 305-6 of the 1999 National Electrical Code.

[End of Statement]

S-36.7 IDENTIFICATION OF EMPLOYEES

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display such identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon the release of any employee. When required by the Contracting Officer, the Contractor shall obtain and submit fingerprints of all persons employed or to be employed on the project.

[End of Statement]

S-36.6 CERTIFICATES OF COMPLIANCE

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in five (5) copies. Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if after tests are performed on selected samples, the material is found not to meet the specific requirements.

[End of Statement]

S-36.5 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

1. 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:

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

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

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

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

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
3	3	2	1	1	0	1	1	1	2	2	3

3. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph 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). [ER 415-1-15, 31 Oct 89]

S-36.26 YEAR 2000 COMPLIANCE - CONSTRUCTION CONTRACTS (AUG 1998)

1. Definitions:

(a) "Information technology" means any equipment, or interconnected system(s) or subsystem(s) of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the agency. The term "information technology" includes hardware (e.g., computers, microprocessors, ancillary equipment), software, firmware, and related resources.

(b) "Embedded system" means any device, equipment or system that includes information technology (i.e., microprocessor chip) as an integral part of the operation of the equipment. "Embedded system" is also referred to as "microprocessor-based equipment". Examples of "embedded system" include, but are not limited to, HVAC system, energy control system, fire detection and control system, utility monitoring and control systems, intrusion detection system,

emergency generators, uninterruptable power supplies, telecommunications switches, leak detection systems, automated sprinkler system, etc. Refer to Appendix, entitled "Examples of Embedded Systems" at the back of Section 00800, Special Contract Requirements, for additional examples.

(c) "Year 2000 compliant" means information technology accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations. Furthermore, Year 2000 compliant information technology when used in combination with other information technology shall accurately process date/time data if the other information technology properly exchanges date/time data with it.

2. In accordance with FAR 39.106, the contractor shall ensure that with respect to any design, construction, supplies, or services, as well as any subsequent task/delivery orders issued under this contract (if applicable), all information technology contained therein, including information technology in embedded systems, shall be Year 2000 compliant. Specifically, the contractor shall:

a. Perform, maintain, and provide an inventory of all major components to include structures, equipment, items, parts, and furnishing under this contract and each task/delivery order which may be affected by the Year 2000 compliance requirement.

b. Indicate whether each component is currently Year 2000 compliant or requires an upgrade for compliance prior to government acceptance.

c. Additional content of the inventory and submittal information is provided in Section 01600, YEAR 2000 COMPLIANCE.

[End of Statement]

S-36.21 AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)

(a) The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

(b) The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

(c) Schedule of utilities available from the Government without charge: water/electricity

[End of Statement]

S-36.19 PROGRESS CHARTS

If the Government revises the work to be accomplished by issuing a Notice to Proceed with a change to the contract which would affect the order of work or duration of time for completing the work, the progress chart prepared by the Contractor pursuant to the Contract Clause entitled 'SCHEDULE FOR CONSTRUCTION CONTRACTS' shall be revised promptly by the Contractor by adding to, deleting, or rescheduling the affected features to indicate the Contractor's current plans for completing the work as revised. The cost for this revision of the schedule is a part of the cost of the change. Revisions to the progress charts shall be made no later than the next regular progress updating following notice to proceed with the change, whether or not the formal modification to the contract has been issued. If the Contractor fails or refuses to incorporate the changed work in the progress chart, the Contracting Officer may furnish revisions which the Contractor shall include and use in the progress chart until the modification is settled or until actual dates supersede the estimated data. If the Contractor objects to the changes furnished by the Contracting Officer, it shall submit such objections in writing along with a counterplan within 20 days after the date suggested revisions were furnished by the Contracting Officer. Failure to submit objections and counterplan within the 20 days will be deemed to indicate the Contractor's concurrence in the Contracting Officer's suggested revisions. The schedule into which these revisions have been incorporated shall become the current schedule for continued evaluation of progress and the document which will be used to evaluate impact on the Contractor's work for time extensions.

[End of Statement]

S-36.18 ACCIDENT PREVENTION PLAN (DEC 1998)

Within 15 days after receipt of Notice of Award of the contract, and at least 7 days prior to the preconstruction conference, four copies of the Accident Prevention Program shall be submitted to the Contracting Officer for review and acceptance. The program shall consist of the following forms and documents:

(a) An executed POD Form 248-R Rev (1 Jun 98), Accident Prevention Program, Administrative Plan.

(b) An executed POD Form 184-R Rev (16 Oct 98), Activity Hazard Analysis. (At the Contracting Officer's discretion, the Contractor may submit its Activity Hazard Analysis only for the first phase of construction provided that it is accompanied by an outline of the remaining phases of construction. All remaining phases shall be submitted and accepted prior to the beginning of work in each phase.)

(c) A copy of company policy statement of accident prevention and any other guidance statements normally provided new employees.

Contractor shall not commence physical work at the site until the program has been accepted by the Contracting Officer, or his authorized representative. In developing and implementing its Accident Prevention Program, the Contractor is also responsible for reviewing Section 1 of the most current edition (Sep 1996) of US Army Corps of Engineers Safety and Health Requirements Manual, Engineer Manual 385-1-1. [See paragraph entitled, SAFETY STANDARDS, in Section 00800]

[End of Statement]

S-36.17 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (AUG 1999)

Whenever a contract or modification of contract price is negotiated, the Contractor's cost proposals for equipment ownership and operating expenses shall be determined in accordance

with the requirements of Special Contract Requirements statement, entitled "EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE," of this solicitation. EP 1110-1-8 "Construction Equipment Ownership and Operating Expense Schedule" is available at [http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep1110-1-8\(vol10\)/toc.htm](http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep1110-1-8(vol10)/toc.htm) for State of Hawaii (Region 10) and at [http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep1110-1-8\(vol12\)/toc.htm](http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep1110-1-8(vol12)/toc.htm) for Kwajalein Island, Roi-Namur Island, and Meck Island (Area 12), including Guam, American Samoa, and Johnston Island). [FAR 31.105(d)(2)(i) and EFARS 31.105(d)(2)(i)(b)].

[End of Statement]

S-36.12 PROJECT SIGN

A project sign shall be fabricated and erected at a location designated by the Contracting Officer. The sign shall be constructed as shown on Drawing Nos 40-21-01 and 40-21-06 copies of which are provided at the end of this section. The sign shall be erected as soon as possible and within 15 days after the date of notice to proceed. Upon completion of the project, the sign shall be removed and disposed of.

[End of Statement]

S-36.11 POSTERS AND NOTICES

Wage Rate, Equal Employment Opportunity, and Nondiscrimination in Employment Posters and Notices will be provided to the Contractor by the Contracting Officer. The Contractor shall mount these posters and notices, together with the wage determination decision, under weatherproof, transparent, protective covering, in one or more conspicuous places, as approved, and readily available to employees.

[End of Statement]

S-36.10 WARRANTY IMPLEMENTATION (MARCH 2000)

(a) The Contractor shall designate a representative within the State of Hawaii to implement the Warranty of Construction clause. The Contractor may designate himself provided he has a permanent office in the State of Hawaii. The Contractor may designate different representatives for separate specialties of work.

(b) The name, address, telephone number of each representative, and nomenclature of warranty item shall be submitted to the Contracting Officer's representative at least 30 days prior to the contract completion date or beneficial occupancy of the work or part thereof. For the purposes of paragraph f of the warranty clause, a reasonable time shall be considered to be as follows:

(1) 21 calendar days from the receipt of a written notification of any failure, defect, or damage of such nature that the work remains functional or habitable or both, as applicable.

(2) 24 hours for failures, defects or damages which render the work nonfunctional or uninhabitable or both, as applicable. Response in this instance starts from receipt of verbal

notification from an authorized Government representative. Written confirmation will follow the initial verbal request.

[End of Statement]

S-28.8 PERFORMANCE AND PAYMENT BONDS (OCT 1995)

(Applicable to contracts exceeding \$100,000)

Within fourteen (14) calendar days after the date of contract award, the bidder to whom award is made shall furnish the Government with two bonds, each with good and sufficient surety or sureties acceptable to the Government; namely, a Performance Bond (Standard Form 25) and a Payment Bond (Standard Form 25-A).

Any bonds furnished will be furnished by the Contractor to the Government prior to issuance of a Notice to Proceed by the Government. [FAR 28.102-3]

[End of Statement]

S-28.7 REQUIRED INSURANCE (Dec 1993)

(The following is applicable when work is performed on a government installation.)

The minimum insurance requirements, pursuant to Section 00700, Contract Clause, "INSURANCE - - WORK ON A GOVERNMENT INSTALLATION" of this contract, are:

Workers' Compensation and Employer's Liability Insurance - Minimum coverage of \$100,000.

Comprehensive General Liability Insurance - Minimum coverage of \$500,000 per occurrence.

Automobile Liability Insurance

(1) Bodily Injury: Minimum coverage of \$200,000 per person and \$500,000 per occurrence.

(2) Property Damage: Minimum coverage of \$20,000 per occurrence.

The Contractor shall insert the substance of this clause in subcontracts under this contract that require work on a Government installation. The Certificate Holder for Subcontractors' Certificates of Insurance shall be the U.S. Army Engineer District, Honolulu, Fort Shafter, Hawaii 96858-5440. [FAR 28.306 and 28.307-2]

[End of Statement]

S-23.1 Emergency Planning Community Right to Know Act (EPCRA) Extremely Hazardous Substances (EHS), CERCLA Hazardous Substances, and other OSHA Hazardous Chemicals (May 2000)

This applies to any contractor utilizing EPCRA EHS, CERCLA hazardous substances, and other OSHA hazardous chemicals in performance of any work while on any US Army Garrison, Hawaii (USAG-HI) installations. The EPCRA EHS are defined in EPA document EPA 550-B-98-017, Title III List of List, Consolidated List of Chemicals Subject to the Emergency Planning and Community Right to Know Act and Section 112(r) of the Clean Air Act Amended. Contractors are responsible for knowing which chemicals they may use or transport are contained on the list. For

convenience, contractors may review a copy of the EPA document at the Directorate of Public Works (DPW) Environmental Department. To obtain a copy of the list, the document is also available at the U.S. Environmental Protection Agency (EPA) Web address <http://www.epa.gov/ceppo/p-gen.htm>. For contractors' information, the locations of these chemicals stored on USAG-HI installations are available upon request. To obtain the list of locations, forward request to the following E-mail address: takenakc@schofield-emh1.army.mil. Indicate name, company, contract awarded and description of contract. A data base of locations of chemicals will then be forwarded upon review and approval of request. Contractors working on USAG-HI installations are encouraged to review this database which will provide information where potentially hazardous chemicals are stored.

(1) Reporting. All spills of substances containing EPCRA EHS and CERCLA hazardous substances, and OSHA hazardous chemicals will be immediately reported to the Directorate of Public Works (DPW) Spill Response line at 656-1111 during normal working hours. After normal working hours or weekends/holidays, all spills will be reported to the DPW Work Order Desk at 656-1275. The Contracting Officer must be notified during the first business hour immediately after. All waste developed resulting from EPCRA EHS, CERCLA hazardous substances, and other OSHA hazardous chemicals being utilized will be immediately reported to the DPW Environmental Office, phone: 656-2878 x 1022 (Mr. Akasaki).

(2) All Contractors Utilizing Substances Containing EPCRA EHS, CERCLA hazardous substances, and other OSHA hazardous chemicals will perform the following prior to contract start.

(a) Review the Installation Spill Contingency Plan, the Installation Hazardous Waste Management Plan and the 40-hour Environmental Compliance Officer Course manual available at the DPW Environmental Department or at the Directorate of Contracting. Upon review, the contractor or designated responsible employee shall sign a certification statement that they have reviewed and understand the contents of these documents.

(b) Provide a list of all EPCRA EHS, CERCLA hazardous substances, and other OSHA hazardous chemicals projected to be utilized, the estimated quantities of each and the Material Safety Data Sheets to the DPW Environmental Department and also to building 6040 East Range for material bar-codes.

(c) Provide the name, phone number, and pager number of a company spill response point of contact. The point of contact must be trained in spill response.

(d) Provide a copy of an agreement with a hazardous materials spill response company in the event of a spill.

(e) Provide copies of training certificates on environmental training and spill response training.

(f) Appoint a primary and alternate Environmental Compliance Officer in writing.

(g) Develop a notification procedure in the event of a spill to include phone numbers of response personnel, support agencies, National Response Center, State Hazard Evaluation Emergency Response Office and Civil Defense.

(3) Annual Update. On an annual basis, but not later than 1 February of each year, provide DPW Environmental Department an updated list as referenced in (2)(b) above.

(4) Contractor Caused Spills or Waste Generated of Substances Containing EPCRA EHS, CERCLA Hazardous Substances, and OSHA Hazardous Chemicals.

(a) All spills caused by the contractor will be cleaned up under supervision of the contractor and a qualified hazardous materials spill response company, at no cost to the government, in accordance with all applicable laws and regulations and to the satisfaction of the DPW Environmental Department.

(b) Accomplish all spill notifications as required by the U.S. Environmental Protection Agency and State of Hawaii to the Hazard Evaluation Emergency Response Office, Local Emergency Response Commission and National Response Center.

(c) Pay for disposal cost of all contaminated materials to include but not limited to soil, sorbent materials, disposable equipment and other materials contaminated by the spill. Ensure all disposal is in accordance with all applicable laws and regulations at authorized disposal sites.

S-23.2 ASBESTOS PROHIBITION & CERTIFICATION (SEP 2000)

a. Materials or products containing more than one percent asbestos shall not be used in this project. The Contracting Officer, at any time prior to acceptance of the work, or during the period designated for warranty of the work, if any, may reject materials and products that contain asbestos in excess of one percent, and direct the removal of such materials and products from the jobsite, at the sole expense of the contractor, and without additional time granted for performance of the work. After completion of this contract, if asbestos (exceeding 1%) is discovered in the products or materials (excluding items permitted by the exception) installed by the contractor, the Government reserves the right to direct the Contractor to perform asbestos abatement and restoration work, as required, at the Contractors' sole cost. Asbestos abatement work (removal and disposal of asbestos-containing materials and products) shall be accomplished in accordance with currently applicable United States Government and State of Hawaii standards for such work.

"Exception: Where suitable asbestos-free (equal to or less than 1% asbestos) substitutes do not exist for a material or product, the contractor may use a material or product containing asbestos in excess of 1%, with the prior written approval of the Contracting Officer. The Contractor shall submit a written request for such substitution, accompanied by a certification from the manufacturer of the material or product that shall set forth, in specific detail, the amount of asbestos present in the material or product. When available, laboratory analysis of the material or product for asbestos content shall be included with the submittal."

b. The Government may conduct asbestos testing on suspected asbestos-containing materials and products excluding items permitted by the "Exception", and such testing will be conducted at the expense of the Government. However, wherever destructive testing is required, or a material or product must be utilized by the Government for testing, the Contractor, shall, at its own expense, repair or replace the material or product, or the item of work that has been disturbed by testing, if the test results confirm presence of asbestos exceeding 1%. In the event test results indicate 1% or less asbestos content or complete absence of asbestos, the Contractor shall restore the test site to its original condition and the cost of restoration work, as approved by the Contracting Officer, shall be borne by the Government.

c. As a minimum, the Contractor shall furnish manufacturer's certification for the items listed below, excluding items permitted by the "Exception", certifying that they are asbestos free or do not contain asbestos in excess of 1%, as applicable. However, when presence of asbestos is suspected in other products and materials used in this project, the Contractor shall be required to provide such certification for those additional items

when so directed by the Contracting Officer. Asbestos certification shall be required for the items applicable to this project only.

1. Vinyl sheet/vinyl tile flooring, including accessories and adhesives
2. Insulation materials including facing
3. Gaskets for piping and duct work
4. Acoustical Tiles
5. Firestopping materials
6. Fireproofing materials
7. Special Coating, including factory applied coatings, on sheetmetal roofing and siding
8. Wallboard for all interior and exterior applications including joint compounds
9. Adhesives (other than Item 1) used in the project
10. Tape materials used in the project
11. Roofing and Siding, nonmetallic
12. Felt materials and cushion materials
13. Pre-mixed mortars, grouts, leveling compounds, fillers, and other cementitious materials
14. Caulking and sealing materials

d. All submittals shall be accompanied by a certification from the manufacturer of the material or product that the material or product is asbestos-free; or shall set forth, in specific detail, the amount of asbestos present in the material or product. Documentary evidence of laboratory analysis of the material or product for asbestos content, conducted by an independent testing laboratory accredited for asbestos analysis by either the American Industrial Hygiene Association (AIHA) or the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST).

e. The Contractor shall implement asbestos awareness and require all subcontractors, vendors, and suppliers to furnish materials and products free of asbestos except where and exception is warranted. The Contractor shall require all subcontractors, vendors, and suppliers to provide manufacturers certifications and data to support the exception. The request for exception shall be provided in writing to the Contracting Officer 30 days prior to commencement of any field work related to that product for which the exception is sought for the project.

f. The Contractor shall monitor all subcontractors, vendors, and suppliers to ensure asbestos containing building materials are not used in the project except those permitted by the Exception.

g. Recording

(1) The Contractor shall annotate on the as-built drawings the location where asbestos containing building materials and products have been used. The annotation shall contain the material and quantity.

(2) Where projects are completed using no asbestos, the Contractor shall prepare and sign a Certification of Asbestos Free Facility. The certification shall contain the project name, contract number, date of certification, and Contractor's name. The certificate shall state that, to the best of Contractor's knowledge, the facility has been completed without the use of asbestos containing building materials and products. The certification shall be signed by the company president or principal or by an individual authorized to sign for the president or principal.

S-19.4 ADDITIONAL 8(a) CONTRACT CONDITIONS (SEP 99)

a. That the 8(a) contractor will not subcontract the performance of any of the requirements of the contract without the prior written approval of the SBA and the designated Contracting Officer of the U.S. Army Engineer District, Honolulu.

b. That the 8(a) contractor awarded a contract hereunder shall have the right of appeal from decisions of the Contracting Officer cognizable under the DISPUTES clause of said contract.

c. A copy of the acceptance document and a copy of the final payment document will be provided to SBA.

[End of Contract Conditions]

S-19 SAFETY STANDARDS

The successful offeror will be required to comply with Chapter 396 of the Hawaii Occupational Safety and Health Act (OSHA) standards and Title 12 Department of Labor and Industrial Relations, Subtitle 8 Division of Occupational Safety and Health, Part 2 General Industry Standards as well as with the Corps of Engineers Manual 385-1-1, Safety and Health Requirements Manual. [Title 29, CFR, Chap 18, Part 1910 (OSHA)]

[End of Statement]

S-17.1 OPTION FOR INCREASED SCOPE -- SEPARATELY PRICED LINE ITEM (APR 1996)

The Government may require the construction of the numbered line item(s), identified in the bidding schedule as (an) option item(s), in the quantity and at the price stated. The Contracting Officer may exercise the option(s) at time of award or by written notice to the Contractor within one hundred twenty (120) days from time of award. Performance period(s) for the option(s) will be identified in the FAR clause entitled COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK, in Section 00800.

[End of Statement]

The Government is uncertain on the presence of asbestos at the time of award. The following paragraphs only apply if asbestos is discovered during the performance of the work. Refer to paragraph entitled PRICE ADJUSTMENT FOR CONTINGENT SCOPE OF WORK in Section 00800 for procedural information upon discovery of asbestos.

(a) THE CONTRACTOR IS WARNED THAT EXPOSURE TO AIRBORNE ASBESTOS HAS BEEN ASSOCIATED WITH FOUR DISEASES: LUNG CANCER, CERTAIN GASTROINTESTINAL CANCERS, PLEURAL OR PERITONEAL MESOTHELIOMA AND ASBESTOSIS. Studies indicate there are significantly increased health dangers to persons exposed to asbestos who smoke and further, to family members and other persons who become indirectly exposed as a result of the exposed worker bringing asbestos-laden work clothing home to be laundered.

(b) The Contractor is advised that friable and/or nonfriable asbestos containing material has been identified in area(s) where contract work is to be performed. Friable asbestos containing material means any material that contains more than 1 percent asbestos by weight that hand pressure can crumble, pulverize or reduce to powder when dry. Nonfriable asbestos containing materials do not release asbestos fiber during routine handling and end-use. However, excessive fiber concentrations may be produced during uncontrolled abrading, sanding, drilling, cutting, machining, removal, demolition or other similar activities.

(c) Care must be taken to avoid releasing, or causing to be released, asbestos fibers into the atmosphere where they may be inhaled or ingested. The Occupational Safety and Health Administration (OSHA) has set standards at 29 CFR 1910.1001, for exposure to airborne concentrations of asbestos, fibers, methods of compliance, medical surveillance, housekeeping procedures and other measures that must be taken when working with or around asbestos containing materials which release airborne asbestos fibers at concentrations in excess of those established 29 CFR 1910.1001. 29 CFR 1910.1001 has been identified as applicable to construction (29 CFR 1926.55 gases, vapors, fumes, dusts and mists). The Environmental Protection Agency (EPA) has established standards at 40 CFR 61.140-156 for the control of asbestos emissions to the environment and the handling and disposal of asbestos wastes.

(d) When contract work activities are carried out in locations where the potential exists for exposure to airborne asbestos fibers as described in paragraph (b), or where asbestos waste will be generated, the Contractor shall assure that all measures necessary to provide effective protection to persons from exposure to asbestos fibers (and prevention of contamination to property, materials, supplies, equipment and the internal and external environment) are effectively instituted.

(e) As a minimum, the Contractor shall comply with the provisions of 29 CFR 1910.1001 and 1926.55; 49 CFR 72.101, 172.200-204, 172.316, 173.1090; 40 CFR 61.140-156; and any state implementing hazardous waste under the Resources Conservation and Recovery Act (RCRA) requirements and any other applicable federal, state or local requirements.

(f) In addition to the information required in Contract Clause, ACCIDENT PREVENTION, of this contract, the Contractor's Accident Prevention Plan must also fully address the following topics, and at the Contractor's option may include additional information as applicable.

(1) Medical Surveillance: (29 CFR 1910.1001(J)).

(2) Employee training: Prior to beginning work in asbestos containing material area(s) (29 CFR 1910.1001 and 29 CFR 1910.134).

- (3) Respiratory protection: (29 CFR 1910.1001 and 29 CFR 1910.134)
- (4) Personal protective clothing and equipment: (29 CFR 1910.1001(d)). The use of compressed air to remove asbestos from workers' clothing is prohibited. The Contractor shall specify the type of change room, wash facilities and laundering facilities as applicable.
- (5) Airborne asbestos monitoring: 29 CFR 1910.1001(f)). Specify the monitoring and analytical procedures to be used before, during, and after completion of contract work in areas where asbestos containing materials are located. All asbestos monitoring shall be conducted under the guidance of an industrial hygienist certified by the American Board of Industrial Hygiene. Samples shall be analyzed by an American Industrial Hygiene Association (AIHA) accredited laboratory proficient in the analysis of asbestos and asbestos containing materials. Turn around time from end of sampling period to review of results of analyses by Contractor shall be no longer than 72 hours.
- (6) Housekeeping: (29 CFR 1910.1001(h)). Dry sweeping of contract work areas contaminated with asbestos containing material is prohibited. The Contractor shall specify methods and materials used to package asbestos containing waste and plan to control any incidental airborne release or spill of asbestos containing material.
- (7) Methods of compliance: (29 CFR 1910.1001(c)). Contractor shall include procedures relating to engineering controls, local exhaust ventilation, particular tools to be used and work practices (1910.1001(c)). Specify methods, materials and equipment to be used to prevent asbestos contamination to property, materials, supplies, equipment and the internal and external environment during maintenance, renovation or other contract activities. Local Exhaust ventilation equipment including power operated tools equipped with local exhaust ventilation shall conform with the Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems ANSI Z9.2 latest revised edition. Describe the type of high-efficiency filtered (HEPA) vacuum cleaners that shall be used to vacuum asbestos containing materials. Describe methods and materials to be used to assure all asbestos containing material will be thoroughly wetted by use of a wetting agent and water before removal and that airborne asbestos dust will be kept to a minimum.
- (8) Methods and materials to be used to decontaminate any property, materials, supplies, equipment and the environment if asbestos contamination results. (29 CFR 1910.1001(c)).
- (9) Recordkeeping procedures. (29 CFR 1910.1001(i) and 1910.20).
- (10) Specific description of packaging, marking and shipping conveyances to be used to transport asbestos containing waste from the generation point to a storage or disposal facility in compliance with Department of Transportation requirements. (49 CFR 172.101, 172.200-204, 176,316, 173.1090).
- (11) Emergency procedures that would be taken if an accident of spill of asbestos containing material occurs during the transport of asbestos containing waste. (40 CFR 61.20-25).
- (12) Methods and equipment used to off load and bury asbestos containing waste control airborne emissions at the burial site. (40 CFR 61.20-25).
- (g) The Contractor shall complete and return to the Contracting Officer within 15 working days after the completion of all airborne asbestos monitoring conducted under this contract, a 'Summarization of Airborne Asbestos Sampling Results' form (ENG Form 4921-R, Jan 86) provided by the Government. NOTE: This completed summarization form is to be used by the US Army Corps of Engineers for statistical information purposes and does not relieve the

Contractor from his recordkeeping requirements as described in 29 CFR 1910.1001(i) and 1910.20.

[End of Statement]

S-14 PRICE ADJUSTMENT FOR CONTINGENT SCOPE OF WORK

As of the time this contract is awarded, the Government is uncertain as to presence of asbestos in the buildings or any other structures to be worked on by the Contractor. Upon discovering presence of asbestos in any part of the structures, the Contractor shall notify the Government thereof as soon as practicable. Upon becoming aware of presence of asbestos in any part of the structures through the contractor's notice or otherwise, the Government shall modify the contract for asbestos abatement and make an equitable adjustment to the contract price as called under the contract clause entitled Changes.

[End of Statement]

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAR 1995) — EFARS

(a) This clause does not apply to terminations. See 52.249-5000, Basis for settlement of proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region X. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

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

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

(End of clause)

52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS.

BASIS FOR SETTLEMENT OF PROPOSALS

DACA83-00-B-0008

00800-16 (Am-0008)

"Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a terminations settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

(1) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.

(2) If equipment costs have been allocated to a contract using predetermined rates , those charges will be adjusted to actual costs.

(3) Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.

(4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).

(5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate."

(End of Statement)

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SECTION 04200

MASONRY

PART 1 GENERAL

1.1 REFERENCES

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

ACI INTERNATIONAL (ACI)

ACI SP-66 (1994) ACI Detailing Manual

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 82 (1995a) Steel Wire, Plain, for Concrete Reinforcement

ASTM A 153 (1996) Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM A 615/A 615M (1996a) Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

ASTM C 67 (1996) Sampling and Testing Brick and Structural Clay Tile

ASTM C 90 (1996a) Loadbearing Concrete Masonry Units

ASTM C 270 (1997) Mortar for Unit Masonry

ASTM C 476 (1995) Grout for Masonry

ASTM C 494 (1992) Chemical Admixtures for Concrete

ASTM C 641 (1982; R 1991) Staining Materials in Lightweight Concrete Aggregates

ASTM C 780 (1996) Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry

ASTM C 1019 (1989a; R 1993) Sampling and Testing Grout

ASTM D 2000 (1996) Rubber Products in Automotive Applications

ASTM D 2240 (1997) Rubber Property - Durometer Hardness

ASTM D 2287 (1996) Nonrigid Vinyl Chloride Polymer and Copolymer Molding and Extrusion Compounds

ASTM E 447

(1992b) Compressive Strength of Masonry
Prisms

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Data

Clay or Shale Brick; GA. Concrete Brick; GA. **Prefaced Concrete Masonry Units; GA. Insulation; GA.**
Ceramic Glazed Structural Clay Facing Units; GA.

Manufacturer's descriptive data.

SD-04 Drawings

Masonry Work; GA.

Drawings including plans, elevations, and details of wall reinforcement; details of reinforcing bars at corners and wall intersections; offsets; tops, bottoms, and ends of walls; control and expansion joints; and wall openings. **Bar splice locations shall be shown.**

Bent bars shall be identified on a bending diagram and shall be referenced and located on the drawings. Wall dimensions, bar clearances, and wall openings greater than one masonry unit in area shall be shown. No approval will be given to the shop drawings until the Contractor certifies that all openings, including those for mechanical and electrical service, are shown. If, during construction, additional masonry openings are required, the approved shop drawings shall be resubmitted with the additional openings shown along with the proposed changes. Location of these additional openings shall be clearly highlighted. The minimum scale for wall elevations shall be 1/4 inch per foot. Reinforcement bending details shall conform to the requirements of ACI SP-66.

SD-09 Reports

Efflorescence Test; GA. Field Testing of Mortar; GA. Field Testing of Grout; GA. Prism tests; GA. Masonry Cement; GA. Fire-rated CMU; GA.

Test reports from an approved independent laboratory. Test reports on a previously tested material shall be certified as the same as that proposed for use in this project.

Special Inspection; GA.

Copies of masonry inspector reports.

SD-13 Certificates

Concrete Masonry Units (CMU); FIO. Prefaced Concrete Masonry Units; FIO. Control Joint Keys; FIO. Anchors, Ties, and Bar Positioners; FIO. Expansion-Joint Materials; FIO. Joint Reinforcement; FIO. Reinforcing Steel Bars and Rods; FIO. Masonry Cement; FIO. Mortar Coloring; FIO.

Insulation; FIO. Precast Concrete Items; FIO. Mortar Admixtures; FIO. Grout Admixtures; FIO.

Certificates of compliance stating that the materials meet the specified requirements.

SD-14 Samples

Concrete Masonry Units (CMU); GA. Prefaced Concrete Masonry Units; GA. Concrete Brick; GA. **Stone Items; GA. Clay or Shale Brick; GA.** Ceramic Glazed Structural Clay Facing Units; GA.

Color samples of three stretcher units and one unit for each type of special shape. Units shall show the full range of color and texture.

Anchors, Ties, and Bar Positioners; GA.

Two of each type used.

Expansion-Joint Material; GA.

One piece of each type used.

Joint Reinforcement; GA.

One piece of each type used, including corner and wall intersection pieces, showing at least two cross wires.

Portable Panel; GA.

One panel of clay or shale brick, 2 feet by 2 feet, containing approximately 24 brick facings to establish range of color and texture.

1.3 DELIVERY, HANDLING, AND STORAGE

Materials shall be delivered, handled, stored, and protected to avoid chipping, breakage, and contact with soil or contaminating material.

1.3.1 Masonry Units

Concrete masonry units shall be covered or protected from inclement weather and shall conform to the moisture content as specified in ASTM C 90 when delivered to the jobsite.

Prefabricated lintels shall be marked on top sides to show either the lintel schedule number or the number and size of top and bottom bars.

1.3.2 Reinforcement, Anchors, and Ties

Steel reinforcing bars, coated anchors, ties, and joint reinforcement shall be stored above the ground. Steel reinforcing bars and uncoated ties shall be free of loose mill scale and rust.

1.3.3 Cementitious Materials, Sand and Aggregates

Cementitious and other packaged materials shall be delivered in unopened containers, plainly marked and labeled with manufacturers' names and brands. Cementitious material shall be stored in dry, weathertight enclosures or be completely covered. Cement shall be handled in a manner

that will prevent the inclusion of foreign materials and damage by water or dampness. Sand and aggregates shall be stored in a manner to prevent contamination or segregation.

1.4 SPECIAL INSPECTION

A qualified masonry inspector approved by the Contracting Officer shall perform inspection of the masonry work. Minimum qualifications for the masonry inspector shall be 5 years of reinforced masonry inspection experience or acceptance by a State, municipality, or other governmental body having a program of examining and certifying inspectors for reinforced masonry construction. The masonry inspector shall be present during preparation of masonry prisms, sampling and placing of masonry units, placement of reinforcement (including placement of dowels in footings and foundation walls), inspection of grout space, immediately prior to closing of cleanouts, and during grouting operations. The masonry inspector shall assure Contractor compliance with the drawings and specifications. The masonry inspector shall keep a complete record of all inspections and shall submit daily written reports to the Quality Control Supervisory Representative reporting the quality of masonry construction.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

The source of materials which will affect the appearance of the finished work shall not be changed after the work has started except with Contracting Officer's approval.

2.2 CONCRETE MASONRY UNITS (CMU)

Hollow and solid concrete masonry units shall conform to ASTM C 90, Type II, except oven-dry weight shall be no less than 119 pounds per cubic foot. Cement shall have a low alkali content and be of one brand.

2.2.1 Aggregates

Lightweight aggregates and blends of lightweight and heavier aggregates in proportions used in producing the units, shall comply with the following requirements when tested for stain-producing iron compounds in accordance with ASTM C 641: by visual classification method, the iron stain deposited on the filter paper shall not exceed the "light stain" classification.

2.2.2 Kinds and Shapes

Units shall be modular in size and shall include closer, jamb, header, lintel, and bond beam units and special shapes and sizes to complete the work as indicated. In exposed interior masonry surfaces, units having a bullnose shall be used for vertical external corners except at door, window, and louver jambs. Radius of the bullnose shall be 1 inch. Units used in exposed masonry surfaces in any one building shall have a uniform fine to medium texture and a uniform color.

2.3 (DELETED)

2.4 PRECAST CONCRETE ITEMS

Trim, lintels, copings, splashblocks and door sills shall be factory-made units from a plant regularly engaged in producing precast concrete units.

Unless otherwise indicated, concrete shall be 4,000 psi minimum conforming to Section 03300 CAST-IN-PLACE STRUCTURAL CONCRETE using 1/2 inch to No. 4 nominal-size coarse aggregate, and minimum reinforcement shall be the reinforcement required for handling of the units. Clearance of 3/4 inch shall be maintained between reinforcement and faces of units. Unless precast-concrete items have been subjected during manufacture to saturated-steam pressure of at least 120 pounds per square inch for at least 5 hours, the items, after casting, shall be either damp-cured for 24 hours or steam-cured and shall then be aged under cover for 28 days or longer. Cast-concrete members weighing over 80 pounds shall have built-in loops of galvanized wire or other approved provisions for lifting and anchoring. Units shall have beds and joints at right angles to the face, with sharp true arises and shall be cast with drip grooves on the underside where units overhang walls. Exposed-to-view surfaces shall be free of surface voids, spalls, cracks, and chipped or broken edges. Precast units exposed-to-view shall be of uniform appearance and color. Unless otherwise specified, units shall have a smooth dense finish. Prior to use, each item shall be wetted and inspected for crazing. Items showing evidence of dusting, spalling, crazing, or having surfaces treated with a protective coating will be rejected.

2.4.1 Lintels

Precast lintels, unless otherwise shown, shall be of a thickness equal to the wall and reinforced with two No. 4 bars for the full length. Top of lintels shall be labeled "TOP" or otherwise identified and each lintel shall be clearly marked to show location in the structure.

2.4.2 Sills and Copings

Sills and copings shall be cast with washes. Sills for windows having mullions shall be cast in sections with head joints at mullions and a 1/4 inch allowance for mortar joints. The ends of sills, except a 3/4 inch wide margin at exposed surfaces, shall be roughened for bond. Treads of door sills shall have rounded nosings.

2.4.3 Splash Blocks

Splash blocks shall be as detailed. Reinforcement shall be the manufacturer's standard.

2.5 MORTAR

Mortar shall be Type S in accordance with the proportion specification of ASTM C 270 except Type S cement-lime mortar proportions shall be 1 part cement, 1/2 part lime and 4-1/2 parts aggregate. Pointing mortar in showers and kitchens shall contain ammonium stearate, or aluminum tri-stearate, or calcium stearate in an amount equal to 3 percent by weight of cement used. Cement shall have a low alkali content and be of one brand. Aggregates shall be from one source.

2.5.1 Admixtures

In cold weather, a non-chloride based accelerating admixture may be used subject to approval. Accelerating admixture shall be non-corrosive, shall contain less than 0.2 percent chlorides, and shall conform to ASTM C 494, Type C.

2.6 GROUT

Grout shall conform to ASTM C 476. Cement used in grout shall have a low alkali content. Grout slump shall be between 8 and 10 inches. Grout shall be used subject to the limitations of Table III. Proportions shall not be changed and materials with different physical or chemical characteristics shall not be used in grout for the work unless additional evidence is furnished that the grout meets the specified requirements.

2.6.1 Admixtures

In cold weather, a non-chloride based accelerating admixture may be used subject to approval. Accelerating admixture shall be non-corrosive, shall contain less than 0.2 percent chlorides, and shall conform to ASTM C 494, Type C.

2.6.2 Grout Barriers

Grout barriers for vertical cores shall consist of fine mesh wire, fiberglass, or expanded metal.

2.7 ANCHORS, TIES, AND BAR POSITIONERS

Anchors and ties shall be fabricated without drips or crimps and shall be zinc-coated in accordance with ASTM A 153, Class B-2. Steel wire used for anchors and ties shall be fabricated from steel wire conforming to ASTM A 82. Anchors and ties shall be sized to provide a minimum of 5/8 inch mortar cover from either face.

2.7.1 Wire Mesh Ties

Wire mesh for tying 4 inch thick concrete masonry unit partitions to other intersecting masonry partitions shall be 1/2 inch mesh of minimum 16 gauge steel wire. Minimum lengths shall be not less than 12 inches.

2.7.2 Wall Ties

Wall ties shall be rectangular-shaped or Z-shaped fabricated of 3/16 inch diameter zinc-coated steel wire. Rectangular wall ties shall be no less than 4 inches wide. Wall ties may also be of a continuous type conforming to paragraph JOINT REINFORCEMENT. Adjustable type wall ties, if approved for use, shall consist of two essentially U-shaped elements fabricated of 3/16 inch diameter zinc-coated steel wire. Adjustable ties shall be of the double pintle to eye type and shall allow a maximum of 1/2 inch eccentricity between each element of the tie. Play between pintle and eye opening shall be not more than 1/16 inch. The pintle and eye elements shall be formed so that both can be in the same plane.

2.7.3 Adjustable Anchors

Adjustable anchors shall be 3/16 inch diameter steel wire, triangular-shaped. Anchors attached to steel shall be 5/16 inch diameter steel bars placed to provide 1/16 inch play between flexible anchors and structural steel members. Spacers shall be welded to rods and columns. Equivalent welded-on steel anchor rods or shapes standard with the flexible-anchor manufacturer may be furnished when approved. Welds shall be cleaned and given one coat of zinc-rich touch up paint.

2.7.4 Bar Positioners

Bar positioners, used to prevent displacement of reinforcing bars during the course of construction, shall be factory fabricated from 9 gauge steel wire or equivalent, and coated with a hot-dip galvanized finish. Not more than one wire shall cross the cell.

2.8 JOINT REINFORCEMENT

Joint reinforcement shall be factory fabricated from steel wire conforming to ASTM A 82, welded construction. Tack welding will not be acceptable in reinforcement used for wall ties. Wire shall have zinc coating conforming to ASTM A 153, Class B-2. All wires shall be a minimum of 9 gauge. Reinforcement shall be ladder type design, having one longitudinal wire in the mortar bed of each face shell for hollow units and one wire for solid units. Joint reinforcement shall be placed a minimum of 5/8 inch cover from either face. The distance between crosswires shall not exceed 16 inches. Joint reinforcement for straight runs shall be furnished in flat sections not less than 10 feet long. Joint reinforcement shall be provided with factory formed corners and intersections. If approved for use, joint reinforcement may be furnished with adjustable wall tie features.

2.9 REINFORCING STEEL BARS AND RODS

Reinforcing steel bars and rods shall conform to ASTM A 615/A 615M, Grade 60.

2.10 CONTROL JOINT KEYS

Control joint keys shall be a factory fabricated solid section of natural or synthetic rubber (or combination thereof) conforming to ASTM D 2000 or polyvinyl chloride conforming to ASTM D 2287. The material shall be resistant to oils and solvents. The control joint key shall be provided with a solid shear section not less than 5/8 inch thick and 3/8 inch thick flanges, with a tolerance of plus or minus 1/16 inch. The control joint key shall fit neatly, but without forcing, in masonry unit jamb sash grooves. The control joint key shall be flexible at a temperature of minus 30 degrees F after five hours exposure, and shall have a durometer hardness of not less than 70 when tested in accordance with ASTM D 2240.

2.11 EXPANSION-JOINT MATERIALS

Backer rod and sealant shall be adequate to accommodate joint compression equal to 50 percent of the width of the joint. The backer rod shall be compressible rod stock of polyethylene foam, polyurethane foam, butyl rubber foam, or other flexible, nonabsorptive material as recommended by the sealant manufacturer. Sealant shall conform to Section 07900 JOINT SEALING.

2.12 FLASHING

Flashing shall be as specified in Section 07600 SHEET METALWORK, GENERAL.

PART 3 EXECUTION

3.1 ENVIRONMENTAL REQUIREMENTS

3.1.1 Hot Weather Installation

The following precautions shall be taken if masonry is erected when the ambient air temperature is more than 99 degrees F in the shade and the

relative humidity is less than 50 percent. All masonry materials shall be shaded from direct sunlight; mortar beds shall be spread no more than 4 feet ahead of masonry; masonry units shall be set within one minute of spreading mortar; and after erection, masonry shall be protected from direct exposure to wind and sun for 48 hours.

3.2 LAYING MASONRY UNITS

Masonry units shall be laid in running bond pattern. Facing courses shall be level with back-up courses, unless the use of adjustable ties has been approved in which case the tolerances shall be plus or minus 1/2 inch. Each unit shall be adjusted to its final position while mortar is still soft and plastic. Units that have been disturbed after the mortar has stiffened shall be removed, cleaned, and relaid with fresh mortar. Air spaces, cavities, chases, expansion joints, and spaces to be grouted shall be kept free from mortar and other debris. Units used in exposed masonry surfaces shall be selected from those having the least amount of chipped edges or other imperfections detracting from the appearance of the finished work. Vertical joints shall be kept plumb. Units being laid and surfaces to receive units shall be free of water film and frost. Solid units shall be laid in a nonfurrowed full bed of mortar. Mortar for veneer wythes shall be beveled and sloped toward the center of the wythe from the cavity side. Units shall be shoved into place so that the vertical joints are tight. Vertical joints of brick and the vertical face shells of concrete masonry units, except where indicated at control, expansion, and isolation joints, shall be completely filled with mortar. Mortar will be permitted to protrude up to 1/2 inch into the space or cells to be grouted. Means shall be provided to prevent mortar from dropping into the space below. In double wythe construction, the inner wythe may be brought up not more than 16 inches ahead of the outer wythe. Collar joints shall be filled with mortar or grout during the laying of the facing wythe, and filling shall not lag the laying of the facing wythe by more than 8 inches.

3.2.1 Surface Preparation

Surfaces upon which masonry is placed shall be cleaned of laitance, dust, dirt, oil, organic matter, or other foreign materials and shall be slightly roughened to provide a surface texture with a depth of at least 1/8 inch. Sandblasting shall be used, if necessary, to remove laitance from pores and to expose the aggregate.

3.2.2 Forms and Shores

Forms and shores shall be sufficiently rigid to prevent deflections which may result in cracking or other damage to supported masonry and sufficiently tight to prevent leakage of mortar and grout. Supporting forms and shores shall not be removed in less than 10 days.

3.2.3 Concrete Masonry Units

Units in piers, pilasters, columns, starting courses on footings, solid foundation walls, lintels, and beams, and where cells are to be filled with grout shall be full bedded in mortar under both face shells and webs. Other units shall be full bedded under both face shells. Head joints shall be filled solidly with mortar for a distance in from the face of the unit not less than the thickness of the face shell. Foundation walls below grade shall be grouted solid. Jamb units shall be of the shapes and sizes to conform with wall units. Solid units may be incorporated in the masonry work where necessary to fill out at corners, gable slopes, and elsewhere as

approved. Double walls shall be stiffened at wall-mounted plumbing fixtures by use of strap anchors, two above each fixture and two below each fixture, located to avoid pipe runs, and extending from center to center of the double wall. Walls and partitions shall be adequately reinforced for support of wall-hung plumbing fixtures when chair carriers are not specified.

3.2.4 [Enter Appropriate Subpart Title Here] 3.2.4.1 Wetting of Units

Wetting of clay, shale brick, or hollow brick units having an initial rate of absorption of more than 1 gram per minute per square inch of bed surface shall be in conformance with ASTM C 67. The method of wetting shall ensure that each unit is nearly saturated but surface dry when laid.

3.2.4.2 Hollow Units

Hollow units shall be laid as specified for concrete masonry units.

3.2.5 Tolerances

Masonry shall be laid plumb, true to line, with courses level. Bond pattern shall be kept plumb throughout. Corners shall be square unless noted otherwise. Except for walls constructed of prefaced concrete masonry units, masonry shall be laid within the following tolerances (plus or minus unless otherwise noted):

TABLE II

TOLERANCES

Variation from the plumb in the lines and surfaces of columns, walls and arises

In adjacent masonry units	1/8 inch
In 10 feet	1/4 inch
In 20 feet	3/8 inch
In 40 feet or more	1/2 inch

Variations from the plumb for external corners, expansion joints, and other conspicuous lines

In 20 feet	1/4 inch
In 40 feet or more	1/2 inch

Variations from the level for exposed lintels, sills, parapets, horizontal grooves, and other conspicuous lines

In 20 feet	1/4 inch
In 40 feet or more	1/2 inch

Variation from level for bed joints and top surfaces of bearing walls

In 10 feet	1/4 inch
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TOLERANCES

In 40 feet or more 1/2 inch

Variations from horizontal lines

In 10 feet 1/4 inch

In 20 feet 3/8 inch

In 40 feet or more 1/2 inch

Variations in cross sectional dimensions of columns and in thickness of walls

Minus 1/4 inch

Plus 1/2 inch

3.2.6 Cutting and Fitting

Full units of the proper size shall be used wherever possible, in lieu of cut units. Cutting and fitting, including that required to accommodate the work of others, shall be done by masonry mechanics using power masonry saws. Concrete masonry units may be wet or dry cut. Wet cut units, before being placed in the work, shall be dried to the same surface-dry appearance as uncut units being laid in the wall. Cut edges shall be clean, true and sharp. Openings in the masonry shall be made carefully so that wall plates, cover plates or escutcheons required by the installation will completely conceal the openings and will have bottoms parallel with the masonry bed joints. Reinforced masonry lintels shall be provided above openings over 12 inches wide for pipes, ducts, cable trays, and other wall penetrations, unless steel sleeves are used.

3.2.7 Jointing

Joints shall be tooled when the mortar is thumbprint hard. Horizontal joints shall be tooled last. Joints shall be brushed to remove all loose and excess mortar. Mortar joints shall be finished as follows:

3.2.7.1 Flush Joints

Joints in concealed masonry surfaces and joints at electrical outlet boxes in wet areas shall be flush cut. Flush cut joints shall be made by cutting off the mortar flush with the face of the wall. Joints in unparged masonry walls below grade shall be pointed tight. Flush joints for architectural units, such as fluted units, shall completely fill both the head and bed joints.

3.2.7.2 Tooled Joints

Joints in exposed exterior and interior masonry surfaces shall be tooled slightly concave. Joints shall be tooled with a jointer slightly larger than the joint width so that complete contact is made along the edges of the unit. Tooling shall be performed so that the mortar is compressed and the joint surface is sealed. Jointer of sufficient length shall be used to obtain a straight and true mortar joint.

3.2.7.3 Door and Window Frame Joints

On the exposed interior side of exterior frames, joints between frames and abutting masonry walls shall be raked to a depth of 3/8 inch. On the exterior side of exterior frames, joints between frames and abutting masonry walls shall be raked to a depth of 3/8 inch.

3.2.8 Joint Widths

Joint widths shall be as follows:

3.2.8.1 Concrete Masonry Units

Concrete masonry units shall have 3/8 inch joints, except for prefaced concrete masonry units.

3.2.9 Embedded Items

Spaces around built-in items shall be filled with mortar. Openings around flush-mount electrical outlet boxes in wet locations shall be pointed with mortar. Anchors, ties, wall plugs, accessories, flashing, pipe sleeves and other items required to be built-in shall be embedded as the masonry work progresses. Anchors, ties and joint reinforcement shall be fully embedded in the mortar. Cells receiving anchor bolts and cells of the first course below bearing plates shall be filled with grout.

3.2.10 Unfinished Work

Unfinished work shall be stepped back for joining with new work. Tothing may be resorted to only when specifically approved. Loose mortar shall be removed and the exposed joints shall be thoroughly cleaned before laying new work.

3.2.11 Masonry Wall Intersections

Each course shall be masonry bonded at corners and elsewhere as shown. Masonry walls shall be anchored or tied together at corners and intersections with bond beam reinforcement and prefabricated corner or tee pieces of joint reinforcement as shown.

3.2.12 Partitions

Partitions shall be continuous from floor to underside of floor or roof deck where shown. Openings in firewalls around joists or other structural members shall be filled as indicated or approved. Where suspended ceilings on both sides of partitions are indicated, the partitions other than those shown to be continuous may be stopped approximately 4 inches above the ceiling level. An isolation joint shall be placed in the intersection between partitions and structural or exterior walls as shown. Interior partitions having 4 inch nominal thick units shall be tied to intersecting partitions of 4 inch units, 5 inches into partitions of 6 inch units, and 7 inches into partitions of 8 inch or thicker units. Cells within vertical plane of ties shall be filled solid with grout for full height of partition or solid masonry units may be used. Interior partitions having masonry walls over 4 inches thick shall be tied together with joint reinforcement. Partitions containing joint reinforcement shall be provided with prefabricated pieces at corners and intersections or partitions.

3.3 CERAMIC GLAZED STRUCTURAL CLAY FACING UNITS

Ceramic glazed structural clay facing units shall be at set level and true

so that bases and wall surfaces will present true planes with finished surfaces free of waviness, off-sets, or other distortions.

3.4 MORTAR

Mortar shall be mixed in a mechanically operated mortar mixer for at least 3 minutes, but not more than 5 minutes. Measurement of ingredients for mortar shall be by volume. Ingredients not in containers, such as sand, shall be accurately measured by the use of measuring boxes. Water shall be mixed with the dry ingredients in sufficient amount to provide a workable mixture which will adhere to the vertical surfaces of masonry units. Mortar that has stiffened because of loss of water through evaporation shall be retempered by adding water to restore the proper consistency and workability. Mortar that has reached its initial set or that has not been used within 2-1/2 hours after mixing shall be discarded.

3.5 REINFORCING STEEL

Reinforcement shall be cleaned of loose, flaky rust, scale, grease, mortar, grout, or other coating which might destroy or reduce its bond prior to placing grout. Bars with kinks or bends not shown on the drawings shall not be used. Reinforcement shall be placed prior to grouting. Unless otherwise indicated, vertical wall reinforcement shall extend to within 2 inches of tops of walls.

3.5.1 Positioning Bars

Vertical bars shall be accurately placed within the cells at the positions indicated on the drawings. A minimum clearance of 1/2 inch shall be maintained between the bars and masonry units. Minimum clearance between parallel bars shall be one diameter of the reinforcement. Vertical reinforcing may be held in place using bar positioners located near the ends of each bar and at intermediate intervals of not more than 192 diameters of the reinforcement. Column and pilaster ties shall be wired in position around the vertical steel. Ties shall be in contact with the vertical reinforcement and shall not be placed in horizontal bed joints.

3.5.2 Splices

Bars shall be lapped a minimum of 48 diameters of the reinforcement. Welded or mechanical connections shall develop at least 125 percent of the specified yield strength of the reinforcement.

3.6 JOINT REINFORCEMENT

Joint reinforcement shall be installed at 16 inches on center or as indicated. Reinforcement shall be lapped not less than 6 inches. Prefabricated sections shall be installed at corners and wall intersections. The longitudinal wires of joint reinforcement shall be placed to provide not less than 5/8 inch cover to either face of the unit.

3.7 PLACING GROUT

Cells containing reinforcing bars shall be filled with grout. Hollow masonry units in walls or partitions supporting plumbing, heating, or other mechanical fixtures, voids at door and window jambs, and other indicated spaces shall be filled solid with grout. Cells under lintel bearings on each side of openings shall be filled solid with grout for full height of openings. Walls below grade, lintels, and bond beams shall be filled solid

with grout. Units other than open end units may require grouting each course to preclude voids in the units. Grout not in place within 1-1/2 hours after water is first added to the batch shall be discarded. Sufficient time shall be allowed between grout lifts to preclude displacement or cracking of face shells of masonry units. If blowouts, flowouts, misalignment, or cracking of face shells should occur during construction, the wall shall be torn down and rebuilt.

3.7.1 Vertical Grout Barriers for Fully Grouted Walls

Grout barriers shall be provided not more than 30 feet apart, or as required, to limit the horizontal flow of grout for each pour.

3.7.2 Horizontal Grout Barriers

Grout barriers shall be embedded in mortar below cells of hollow units receiving grout.

3.7.3 Grout Holes and Cleanouts

3.7.3.1 Grout Holes

Grouting holes shall be provided in slabs, spandrel beams, and other in-place overhead construction. Holes shall be located over vertical reinforcing bars or as required to facilitate grout fill in bond beams. Additional openings spaced not more than 16 inches on centers shall be provided where grouting of all hollow unit masonry is indicated. Openings shall not be less than 4 inches in diameter or 3 by 4 inches in horizontal dimensions. Upon completion of grouting operations, grouting holes shall be plugged and finished to match surrounding surfaces.

3.7.3.2 Cleanouts for Hollow Unit Masonry Construction

Cleanout holes shall be provided at the bottom of every pour in cores containing vertical reinforcement when the height of the grout pour exceeds 5 feet. Where all cells are to be grouted, cleanout courses shall be constructed using bond beam units in an inverted position to permit cleaning of all cells. Cleanout holes shall be provided at a maximum spacing of 32 inches where all cells are to be filled with grout. A new series of cleanouts shall be established if grouting operations are stopped for more than 4 hours. Cleanouts shall not be less than 3 by 4 inch openings cut from one face shell. Manufacturer's standard cutout units may be used at the Contractor's option. Cleanout holes shall not be closed until masonry work, reinforcement, and final cleaning of the grout spaces have been completed and inspected. For walls which will be exposed to view, cleanout holes shall be closed in an approved manner to match surrounding masonry.

3.7.3.3 Cleanouts for Solid Unit Masonry Construction

Cleanouts for construction of walls consisting of a grout filled cavity between solid masonry wythes shall be provided at the bottom of every pour by omitting every other masonry unit from one wythe. A new series of cleanouts shall be established if grouting operations are stopped for more than 4 hours. Cleanout holes shall not be plugged until masonry work, reinforcement, and final cleaning of the grout spaces have been completed and inspected. For walls which will be exposed to view, cleanout holes shall be closed in an approved manner to match surrounding masonry.

3.7.4 Grouting Equipment

3.7.4.1 Grout Pumps

Pumping through aluminum tubes will not be permitted. Pumps shall be operated to produce a continuous stream of grout without air pockets, segregation, or contamination. Upon completion of each day's pumping, waste materials and debris shall be removed from the equipment, and disposed of outside the masonry.

3.7.4.2 Vibrators

Internal vibrators shall maintain a speed of not less than 5,000 impulses per minute when submerged in the grout. At least one spare vibrator shall be maintained at the site at all times. Vibrators shall be applied at uniformly spaced points not further apart than the visible effectiveness of the machine. Duration of vibration shall be limited to time necessary to produce satisfactory consolidation without causing segregation.

3.7.5 Grout Placement

Masonry shall be laid to the top of a pour before placing grout. Grout shall not be placed in two-wythe solid unit masonry cavity until mortar joints have set for at least 3 days during hot weather and 5 days during cold damp weather. Grout shall not be placed in hollow unit masonry until mortar joints have set for at least 24 hours. Grout shall be placed using a hand bucket, concrete hopper, or grout pump to completely fill the grout spaces without segregation of the aggregates. Vibrators shall not be inserted into lower pours that are in a semi-solidified state. The height of grout pours and type of grout used shall be limited by the dimensions of grout spaces as indicated in Table III. Low-lift grout methods may be used on pours up to and including 5 feet in height. High-lift grout methods shall be used on pours exceeding 5 feet in height.

3.7.5.1 Low-Lift Method

Grout shall be placed at a rate that will not cause displacement of the masonry due to hydrostatic pressure of the grout. Mortar protruding more than 1/2 inch into the grout space shall be removed before beginning the grouting operation. Grout pours 12 inches or less in height shall be consolidated by mechanical vibration or by puddling. Grout pours over 12 inches in height shall be consolidated by mechanical vibration and reconsolidated by mechanical vibration after initial water loss and settlement has occurred. Vibrators shall not be inserted into lower pours that are in a semi-solidified state. Low-lift grout shall be used subject to the limitations of Table III.

3.7.5.2 High-Lift Method

Mortar droppings shall be cleaned from the bottom of the grout space and from reinforcing steel. Mortar protruding more than 1/4 inch into the grout space shall be removed by dislodging the projections with a rod or stick as the work progresses. Reinforcing, bolts, and embedded connections shall be rigidly held in position before grouting is started. CMU units shall not be pre-wetted. Grout, from the mixer to the point of deposit in the grout space shall be placed as rapidly as practical by pumping and placing methods which will prevent segregation of the mix and cause a minimum of grout splatter on reinforcing and masonry surfaces not being immediately encased in the grout lift. The individual lifts of grout shall

be limited to 4 feet in height. The first lift of grout shall be placed to a uniform height within the pour section and vibrated thoroughly to fill all voids. This first vibration shall follow immediately behind the pouring of the grout using an approved mechanical vibrator. After a waiting period sufficient to permit the grout to become plastic, but before it has taken any set, the succeeding lift shall be poured and vibrated 12 to 18 inches into the preceding lift. If the placing of the succeeding lift is going to be delayed beyond the period of workability of the preceding, each lift shall be reconsolidated by reworking with a second vibrator as soon as the grout has taken its settlement shrinkage. The waiting, pouring, and reconsolidation steps shall be repeated until the top of the pour is reached. The top lift shall be reconsolidated after the required waiting period. The high-lift grouting of any section of wall between vertical grout barriers shall be completed to the top of a pour in one working day unless a new series of cleanout holes is established and the resulting horizontal construction joint cleaned. High-lift grout shall be used subject to the limitations in Table III.

TABLE III

POUR HEIGHT AND TYPE OF GROUT FOR VARIOUS GROUT SPACE DIMENSIONS

Maximum Grout Pour Height (feet) (4)	Grout Type	Grouting Procedure	Minimum Dimensions of the Total Clear Areas Within Grout Spaces and Cells (in.) (1,2)	
			Multiwythe Masonry (3)	Hollow-unit Masonry
1	Fine	Low Lift	3/4	1-1/2 x 2
5	Fine	Low Lift	2	2 x 3
8	Fine	High Lift	2	2 x 3
12	Fine	High Lift	2-1/2	2-1/2 x 3
24	Fine	High Lift	3	3 x 3
1	Coarse	Low Lift	1-1/2	1-1/2 x 3
5	Coarse	Low Lift	2	2-1/2 x 3
8	Coarse	High Lift	2	3 x 3
12	Coarse	High Lift	2-1/2	3 x 3
24	Coarse	High Lift	3	3 x 4

Notes:

- (1) The actual grout space or cell dimension must be larger than the sum of the following items:
 - a) The required minimum dimensions of total clear areas given in the table above;
 - b) The width of any mortar projections within the space;
 - c) The horizontal projections of the diameters of the horizontal reinforcing bars within a cross section of the grout space or cell.
- (2) The minimum dimensions of the total clear areas shall be made up of one or more open areas, with at least one area being 3/4 inch or greater in width.
- (3) For grouting spaces between masonry wythes.
- (4) Where only cells of hollow masonry units containing reinforcement are grouted, the maximum height of the pour shall not exceed the distance between horizontal bond beams.

3.8 BOND BEAMS

Bond beams shall be filled with grout and reinforced as indicated on the drawings. Grout barriers shall be installed under bond beam units to retain the grout as required. Reinforcement shall be continuous, including around corners, except through control joints or expansion joints, unless otherwise indicated on the drawings. Where splices are required for continuity, reinforcement shall be lapped 48 bar diameters. A minimum clearance of 1/2 inch shall be maintained between reinforcement and interior faces of units.

3.9 CONTROL JOINTS

Control joints shall be provided as indicated and shall be constructed in accordance with the details shown on the drawings. Sash jamb units shall have a 3/4 by 3/4 inch groove near the center at end of each unit. The vertical mortar joint at control joint locations shall be continuous, including through all bond beams. This shall be accomplished by utilizing half blocks in alternating courses on each side of the joint. The control joint key shall be interrupted in courses containing continuous bond beam steel. In single wythe exterior masonry walls, the exterior control joints shall be raked to a depth of 3/4 inch; backer rod and sealant shall be installed in accordance with Section 07900 JOINT SEALING. Exposed interior control joints shall be raked to a depth of 1/4 inch. Concealed control joints shall be flush cut.

3.10 LINTELS

3.10.1 Masonry Lintels

Masonry lintels shall be constructed with lintel units filled solid with grout in all courses and reinforced with a minimum of two No. 4 bars in the bottom course unless otherwise indicated on the drawings. Lintel reinforcement shall extend beyond each side of masonry opening 40 bar diameters or 24 inches, whichever is greater. Reinforcing bars shall be supported in place prior to grouting and shall be located 1/2 inch above the bottom inside surface of the lintel unit.

3.10.2 Precast Concrete and Steel Lintels

Precast concrete and steel lintels shall be as shown on the drawings. Lintels shall be set in a full bed of mortar with faces plumb and true. Steel and precast lintels shall have a minimum bearing length of 8 inches unless otherwise indicated on the drawings.

3.11 SILLS AND COPINGS

Sills and copings shall be set in a full bed of mortar with faces plumb and true.

3.12 ANCHORAGE TO CONCRETE AND STRUCTURAL STEEL

3.12.1 Anchorage to Concrete

Anchorage of masonry to the face of concrete columns, beams, or walls shall be with dovetail anchors spaced not over 16 inches on centers vertically and 24 inches on center horizontally.

3.12.2 Anchorage to Structural Steel

Masonry shall be anchored to vertical structural steel framing with adjustable steel wire anchors spaced not over 16 inches on centers vertically, and if applicable, not over 24 inches on centers horizontally.

3.13 SPLASH BLOCKS

Splash blocks shall be located as shown.

3.14 POINTING AND CLEANING

After mortar joints have attained their initial set, but prior to hardening, mortar and grout daubs or splashes shall be completely removed from masonry-unit surfaces that will be exposed or painted. Before completion of the work, defects in joints of masonry to be exposed or painted shall be raked out as necessary, filled with mortar, and tooled to match existing joints. Immediately after grout work is completed, scum and stains which have percolated through the masonry work shall be removed using a high pressure stream of water and a stiff bristled brush. Masonry surfaces shall not be cleaned, other than removing excess surface mortar, until mortar in joints has hardened. Masonry surfaces shall be left clean, free of mortar daubs, dirt, stain, and discoloration, including scum from cleaning operations, and with tight mortar joints throughout. Metal tools and metal brushes shall not be used for cleaning.

3.14.1 Concrete Masonry Unit and Concrete Brick Surfaces

Exposed concrete masonry unit and concrete brick surfaces shall be dry-brushed at the end of each day's work and after any required pointing, using stiff-fiber bristled brushes.

3.15 BEARING PLATES

Bearing plates for beams, joists, joist girders and similar structural members shall be set to the proper line and elevation with damp-pack bedding mortar, except where non-shrink grout is indicated. Bedding mortar and non-shrink grout shall be as specified in Section 03300CAST-IN-PLACE STRUCTURAL CONCRETE.

3.16 PROTECTION

Facing materials shall be protected against staining. Top of walls shall be covered with nonstaining waterproof covering or membrane when work is not in progress. Covering of the top of the unfinished walls shall continue until the wall is waterproofed with a complete roof or parapet system. Covering shall extend a minimum of 2 feet down on each side of the wall and shall be held securely in place. Before starting or resuming, top surface of masonry in place shall be cleaned of loose mortar and foreign material.

3.17 TEST REPORTS

3.17.1 Field Testing of Mortar

At least three specimens of mortar shall be taken each day. A layer of mortar 1/2 to 5/8 inch thick shall be spread on the masonry units and allowed to stand for one minute. The specimens shall then be prepared and tested for compressive strength in accordance with ASTM C 780.

3.17.2 Field Testing of Grout

Field sampling and testing of grout shall be in accordance with the applicable provisions of ASTM C 1019. A minimum of three specimens of grout per day shall be sampled and tested. Each specimen shall have a minimum ultimate compressive strength of 2000 psi at 28 days.

3.17.3 Efflorescence Test

Brick which will be exposed to weathering shall be tested for efflorescence. Tests shall be scheduled far enough in advance of starting masonry work to permit retesting if necessary. Sampling and testing shall conform to the applicable provisions of ASTM C 67. Units meeting the definition of "effloresced" will be subject to rejection.

3.17.4 Prism Tests

At least one prism test sample shall be made for each 5,000 square feet of wall but not less than three such samples shall be made for any building. Three prisms shall be used in each sample. Prisms shall be tested in accordance with ASTM E 447. Seven-day tests may be used provided the relationship between the 7- and 28-day strengths of the masonry is established by the tests of the materials used. Compressive strength shall not be less than 2000 psi at 28 days. If the compressive strength of any prism falls below the specified value by more than 500 psi, steps shall be taken to assure that the load-carrying capacity of the structure is not jeopardized. If the likelihood of low-strength masonry is confirmed and computations indicate that the load-carrying capacity may have been significantly reduced, tests of cores drilled, or prisms sawed, from the area in question may be required. In such case, three specimens shall be taken for each prism test more than 500 psi below the specified value. Masonry in the area in question shall be considered structurally adequate if the average compressive strength of three specimens is equal to at least 85 percent of the specified value, and if the compressive strength of no single specimen is less than 75 percent of the specified value. Additional testing of specimens extracted from locations represented by erratic core or prism strength test results shall be permitted.

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DIVISION 05 - METALS

SECTION 05500

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SECTION 05500

MISCELLANEOUS METAL

PART 1 GENERAL

1.1 REFERENCES

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

ALUMINUM ASSOCIATION (AA)

AA DAF-45 (1980; R 1993) Designation System for Aluminum Finishes

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 53 (1996) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

ASTM A 123 (1989a) Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM A 653 (1996) Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

ASTM A 924 (1996a) Steel Sheet, Metallic-Coated by the Hot-Dip Process

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 7 (1995) Minimum Design Loads for Buildings and Other Structures

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1 (1994) Structural Welding Code - Steel

COMMERCIAL ITEM DESCRIPTIONS (CID)

CID A-A-344 (Rev B) Lacquer, Clear Gloss, Exterior, Interior

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 54 (1992) National Fuel Gas Code

NFPA 211 (1992) Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Miscellaneous Metal Items; FIO.

Detail drawings indicating material thickness, type, grade, and class; dimensions; and construction details. Drawings shall include catalog cuts, erection details, manufacturer's descriptive data and installation instructions, and templates.

1.3 GENERAL REQUIREMENTS

The Contractor shall verify all measurements and shall take all field measurements necessary before fabrication. Welding to or on structural steel shall be in accordance with AWS D1.1. Items specified to be galvanized, when practicable and not indicated otherwise, shall be hot-dip galvanized after fabrication. Galvanizing shall be in accordance with ASTM A 123, ASTM A 653, or ASTM A 924, as applicable. Exposed fastenings shall be compatible materials, shall generally match in color and finish, and shall harmonize with the material to which fastenings are applied. Materials and parts necessary to complete each item, even though such work is not definitely shown or specified, shall be included. Poor matching of holes for fasteners shall be cause for rejection. Fastenings shall be concealed where practicable. Thickness of metal and details of assembly and supports shall provide strength and stiffness. Joints exposed to the weather shall be formed to exclude water.

1.4 DISSIMILAR MATERIALS

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.

1.5 WORKMANSHIP

Miscellaneous metalwork shall be well formed to shape and size, with sharp lines and angles and true curves. Drilling and punching shall produce clean true lines and surfaces. Welding shall be continuous along the entire area of contact except where tack welding is permitted. Exposed connections of work in place shall not be tack welded. Exposed welds shall be ground smooth. Exposed surfaces of work in place shall have a smooth finish, and unless otherwise approved, exposed riveting shall be flush. Where tight fits are required, joints shall be milled. Corner joints shall be coped or mitered, well formed, and in true alignment. Work shall be accurately set to established lines and elevations and securely fastened in place. Installation shall be in accordance with manufacturer's installation instructions and approved drawings, cuts, and details.

1.6 ANCHORAGE

Anchorage shall be provided where necessary for fastening miscellaneous metal items securely in place. Anchorage not otherwise specified or indicated shall include slotted inserts made to engage with the anchors,

expansion shields, and power-driven fasteners when approved for concrete; toggle bolts and through bolts for masonry; machine and carriage bolts for steel; and lag bolts and screws for wood.

1.7 ALUMINUM FINISHES

Unless otherwise specified, aluminum items shall have standard mill finish.

The thickness of the coating shall be not less than that specified for protective and decorative type finishes for items used in interior locations or architectural Class I type finish for items used in exterior locations in AA DAF-45. Items to be anodized shall receive a polished satin finish. Aluminum surfaces to be in contact with plaster or concrete during construction shall be protected with a field coat conforming to CID A-A-344.

1.8 SHOP PAINTING

Surfaces of ferrous metal except galvanized surfaces, shall be cleaned and shop coated with the manufacturer's standard protective coating unless otherwise specified. Surfaces of items to be embedded in concrete shall not be painted. Items to be finish painted shall be prepared according to manufacturer's recommendations or as specified.

PART 2 PRODUCTS

2.1 ACCESS DOORS AND PANELS

Doors and panels shall be flush type unless otherwise indicated. Frames for access doors shall be fabricated of not lighter than 16 gauge steel with welded joints and finished with anchorage for securing into construction. Access doors shall be a minimum of 14 by 20 inches and of not lighter than 14 gauge steel, with stiffened edges, complete with attachments. Access doors shall be hinged to frame and provided with a flush face, screw driver operated latch. Exposed metal surfaces shall have a baked enamel finish.

2.2 CHIMNEYS, VENTS, AND SMOKESTACKS

Chimneys and vents shall be designed and constructed in accordance with NFPA 211 and NFPA 54. Chimney connectors shall be formed of not lighter than 20 gauge galvanized steel. Stacks shall be designed and constructed to withstand a wind velocity of 105 mile/h in accordance with ASCE 7. Prefabricated lined vents shall be listed for the intended service.

2.3 (DELETED)

2.4 HANDRAILS

Handrails shall be designed to resist a concentrated load of 200 pounds in any direction at any point of the top of the rail or 20 pounds per foot applied horizontally to top of the rail, whichever is more severe.

2.4.1 Steel Handrails, Including Carbon Steel Inserts

Steel handrails, including inserts in concrete, shall be steel pipe conforming to ASTM A 53. Steel railings size shall be as indicated. Railings shall be hot-dip galvanized and shop painted.

- a. Joint posts, rail, and corners shall be fabricated by:

Flush type rail fittings of commercial standard, welded and ground smooth with railing splice locks secured with 3/8 inch hexagonal recessed-head setscrews.

2.5 MIRROR FRAMES

Frames for plate glass mirrors larger than 18 by 30 inches shall be fabricated from corrosion-resisting steel with satin finish. Frames shall be provided with concealed fittings and tamperproof mountings.

2.6 MISCELLANEOUS

Miscellaneous plates and shapes for items that do not form a part of the structural steel framework, such as lintels, sill angles, miscellaneous mountings, and frames, shall be provided to complete the work.

PART 3 EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS

All items shall be installed at the locations shown and according to the manufacturer's recommendations. Items listed below require additional procedures as specified.

3.2 REMOVABLE ACCESS PANELS

A removable access panel not less than 12 by 12 inches shall be installed directly below each valve, flow indicator, damper, or air splitter that is located above the ceiling, other than an acoustical ceiling, and that would otherwise not be accessible.

3.3 INSTALLATION OF CHIMNEYS, VENTS, AND SMOKESTACKS

Chimneys and vents shall be installed in accordance with NFPA 54 and NFPA 211. A cleanout opening with a tight-fitting, hinged, cast-iron door and frame shall be provided at the base of each smokestack. A top band shall be provided on stacks for attachment of painter's rigging. Roof housing, rain cap, downdraft diverter, fire damper, and other accessories required for a complete installation shall be provided. Sections of prefabricated lined stacks shall be joined with acid-resisting high-temperature cement and steel draw bands. Means to prevent accumulation of water in the smokestack shall be provided. Prefabricated lined vent systems shall be installed in accordance with the manufacturer's listed procedures.

3.4 ATTACHMENT OF HANDRAILS

Attachment of handrails shall be installed as indicated.

3.5 PARTITION POSTS AND OPENINGS

Posts shall be set in shoes bolted to the floor and in caps tap-screwed to clip angles in overhead construction, as indicated. Openings shall be formed using channels similar to the partition frames at ducts, pipes, and other obstructions.

-- End of Section --

