

**AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT**

1. CONTRACT ID CODE \_\_\_\_\_ PAGE \_\_\_\_\_ OF \_\_\_\_\_ PAGES

2. AMENDMENT/MODIFICATION NO. \_\_\_\_\_ 3. EFFECTIVE DATE \_\_\_\_\_ 4. REQUISITION/PURCHASE REQ. NO. \_\_\_\_\_ 5. PROJECT NO. *(If applicable)* \_\_\_\_\_

6. ISSUED BY \_\_\_\_\_ CODE \_\_\_\_\_ 7. ADMINISTERED BY *(If other than Item 6)* \_\_\_\_\_ CODE \_\_\_\_\_

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)* \_\_\_\_\_ (X) 9A. AMENDMENT OF SOLICITATION NO. \_\_\_\_\_  
 9B. DATED *(SEE ITEM 11)* \_\_\_\_\_  
 10A. MODIFICATION OF CONTRACT/ORDER NO. \_\_\_\_\_  
 10B. DATED *(SEE ITEM 11)* \_\_\_\_\_  
 CODE \_\_\_\_\_ FACILITY CODE \_\_\_\_\_

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended,  is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:  
 (a) By completing items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR 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 your 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 ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	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.)*

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	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
<i>(Signature of person authorized to sign)</i>		<i>(Signature of Contracting Officer)</i>	

Item 14. Continued.

CHANGES TO VOLUME 1 BIDDING REQUIREMENTS, CONTRACT FORMS, AND CONDITIONS OF THE CONTRACT

1. Section 00500, Forms.- Replace the Client Authorization Letter with the accompanying new Letter bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-02-R-0001."

CHANGES TO VOLUME III SPECIFICATIONS

2. Replacement Sections - Replace the following sections with the accompanying new sections of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-02-R-0001:"

01000	DESIGN AND CONSTRUCTION SCHEDULE
01015	DESIGN REQUIREMENTS AFTER AWARD
01016	DESIGN DOCUMENT REQUIREMENTS
01320	PROJECT SCHEDULE
01330	CONSTRUCTION SUBMITTAL PROCEDURES
01430	DESIGN QUALITY CONTROL
13290	MOLD ABATEMENT

END OF AMENDMENT

## Client Authorization Letter

(Addressee)

Dear "Client":

We are currently responding to the U.S. Army Corps of Engineers (COE) Request for Proposals, DACA63-02-R-0001, for Design-Build Building 350 Conversion, JRTC and Fort Polk Headquarters, Fort Polk, Louisiana. The COE is placing increased emphasis in their acquisitions on past performance as a source selection evaluation factor.

You are requested to complete and return the attached form to the U.S. Army Engineer District, Fort Worth, ATTN: CESWF-CT-C (Billman), P.O. Box 17300, Fort Worth, TX 76102-0300, prior to the date set for receipt of phase I proposals, \_\_\_\_\_ (AM#1). Request you indicate on the envelope that it is to be opened by the addressee only. The COE may contact you to verify that the submitted information is correct and determine your satisfaction with various aspects of our performance. If you are contacted by the COE for information on work that we have performed under contract for your company/agency/state or local government, you are hereby authorized to respond to COE inquiries.

Your cooperation is appreciated. Please direct any questions to \_\_\_\_\_ (Offeror's point-of-contact).

Sincerely,

SECTION 01000

DESIGN AND CONSTRUCTION SCHEDULE  
 03/2001

PART 1 GENERAL

1.1 SCHEDULE

Commence, prosecute, and complete the work under this contract in accordance with the following schedule and Section 00700 CONTRACT CLAUSES clauses COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK and LIQUIDATED DAMAGES:

Item of Work	Commencement of Work (calendar days)	Completion of Work (calendar days)	Liquidated Damages per calendar day <sup>[1]</sup>
(1) Completion of all demolition, design, and construction work except Establishment of Turf and Landscaping	Within 10 calendar days after receipt of Contract Notice of Proceed	670	---
(2) Completion of all furniture installation and interior systems.	Within 10 calendar days after receipt of Contract Notice of Proceed	715	\$685.00
(2) Establishment of Turf	**	**	---
(3) Landscaping	***	***	---

<sup>1</sup>NOTES:

a. See Section **(AM#1) 01015 DESIGN REQUIREMENTS AFTER AWARD**, paragraph "SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND DESIGN ANALYSES," concerning submission of construction documents and Section 01000 paragraph, "SEQUENCE OF DESIGN/CONSTRUCTION," concerning start of construction.

b. For construction planning purposes Government review time for design review submittals **(AM#1) is** specified in 01015 DESIGN REQUIREMENTS AFTER AWARD.

c. Delay in completion of design will not be considered as a valid reason to delay completion of entire work.

\*Establishment of Turf

Planting and maintenance for turfing shall be in accordance with Contractor's Section for TURFING. No payment will be made for establishment of turf until all requirements of the section are adequately performed and accepted, as determined by the Contracting Officer.

\*\*Landscaping

Planting and maintenance for landscaping shall be in accordance with Contractor's Section for LANDSCAPING. No payment will be made for landscaping until all requirements of the section are adequately performed and accepted, as determined by the Contracting Officer.

1.1.1 Testing of Heating and Air-Conditioning Systems

The times stated for completion of this project includes all required testing specified in appropriate specification sections of heating, air conditioning and ventilation systems including HVAC Commissioning. Exception: boiler combustion efficiency test, boiler full load tests, cooling tower performance tests, and refrigeration equipment full load tests, when specified in the applicable specifications, shall be performed in the appropriate heating/cooling season as determined by the Contracting Officer.

1.2 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (OCT 1989)  
 (ER 415-1-15)(52.0001-4038 1/96)

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

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

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

b. The following schedule of monthly anticipated adverse weather delays due to precipitation and temperature 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. Wind is not considered in the Monthly Anticipated Adverse Weather Calendar Day Schedule.

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

LEESVILLE/FT. POLK, LA AREA  
(FORT POLK AND RESERVE CTRS AT NORTH FORT POLK AND ALEXANDRIA)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
5	5	4	4	5	6	5	4	4	4	4	5

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

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

### 1.3 Beneficial Occupancy

Beneficial Occupancy is the occupancy of an uncompleted building, structure or facility for its intended purpose under circumstances which are advantageous to the occupant and which produce relatively little interference with the Contractor in completing construction. Prior to occupancy by the JRTC and Fort Polk Headquarters, a written agreement among the Contractor, Contracting Officer, and the Fort Polk shall be executed listing deficiencies, remaining work, and other conditions of occupancy.

#### 1.3.1 Beneficial Occupancy Date

The Beneficial Occupancy Date is the date on which beneficial occupancy is granted to Fort Polk. By mutual agreement Fort Polk will allow the Contractor access as required to complete remaining items of construction pursuant to the contract.

### 1.4 WORK RESTRICTIONS

#### 1.4.1 Working Hours

Normal working hours are Monday through Friday, 0730 to 1630 hours. Contractor may request through the Contracting Officer's representative for other work hours to meet project needs.

### 1.5 UTILITIES

#### 1.5.1 Payment for Utility Services (FAR 36.303(C)(6))

Water, gas, and electricity are available from Government-owned and operated systems and will be charged to the Contractor at rates as provided in Contract Clause 52.236.14 AVAILABILITY AND USE OF UTILITY SERVICES.

#### 1.5.2 Outages

The Contractor shall coordinate all requests for utility outages with the Contracting Officer in writing 14 days prior to date of requested outage:

- a. Water, gas, and sewer outages shall be held to a maximum duration of 4 hours unless otherwise approved in writing.
- b. Electrical outages shall have a maximum duration of 4 hours.
- c. Utility outages shall not be scheduled on Saturdays, Sundays, or holidays.

### 1.6 STREET CLOSINGS

The Contractor shall coordinate all requests for street closings with the Contracting Officer in writing 14 days prior to date of requested outage:

- a. One lane traffic shall be maintained at all times (except that a total closing may be allowed for specific 8-hour periods).
- b. The final street repair shall be completed within 14 days after the start of any street crossing. Any part of the street returned to service prior to final repair shall be maintained smooth with hot-mix cold-lay surface course.
- c. At least two flagmen will be on duty to assist traffic in the open lane, when other lanes are closed due to the Contractor's operations. Flagmen will meet the requirements of the State of Louisiana's Standard Specifications for Construction of Highways, Streets, and Bridges.
- d. Traffic Management

The Contractor shall provide a traffic management plan that reflect's construction phasing, bypass routing, and timeframes.

### 1.7 SEQUENCE OF DESIGN/CONSTRUCTION

(a) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. No construction may be started, with the exception of demolition, clearing, etc, until the Government reviews the Final Design submission and determines it satisfactory for purposes of beginning construction. The Acting Contracting Officer (ACO) or Contracting Officer Representative (COR) will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the ACO or COR, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

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

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

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

## SECTION 01015

## DESIGN REQUIREMENTS AFTER AWARD

12/2000

AMENDMENT NO. 0001

## PART 1 GENERAL

## 1.1 SUMMARY

## 1.1.1 Section Includes

This section includes requirements for developing and submitting a design including preparation of drawings, specifications and design analyses conforming to the requirements contained in this section.

## 1.1.2 Section Excludes

This section does not include requirements for construction submittals which are specified in Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES.

## 1.2 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.

## CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI)

CSI MasterFormat (1995) MasterFormat

## CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 763 Asbestos

## 1.3 DESIGN COMPLETION SCHEDULE

See paragraph COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK in Section 01000 DESIGN AND CONSTRUCTION SCHEDULE for the Completion Schedule of the entire work.

## 1.4 METRIC REQUIREMENTS

This is an English Measurement project. Metric Measurements are not required for this project.

## 1.5 DEFINITIONS

## 1.5.1 Acceptance

This is the Government's review of the design submittals, construction submittals, and record drawings for conformance to the Contract requirements. Acceptance shall not be construed to be an endorsement of the accuracy or completeness of the design. The Contractor is ultimately responsible for the contract design and construction. Design deficiencies or omissions in the accepted design shall be the responsibility of the Contractor and the Designer of Record.

## 1.5.2 Approve, Approved and Approval

As these words are used throughout the documents, they shall mean "as approved by the Designer of Record unless otherwise expressly stated." See Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES.

## 1.5.3 Complete Specification Section

A Complete Specification Section is one that follows the Construction Specifications Institute's (CSI) 16-Division, 3-Part Section format, including the required submittal register and testing requirements.

## 1.5.4 Contractor

Firm or company to whom award is made to design and construct the project.

## 1.5.5 Contract Documents

Contract Documents, in addition to the signed Contract Form and the Contract Clauses, include the Request for Proposal, all amendments, and the Contractor's proposal as accepted at the time of contract award.

## 1.5.6 Construction Documents

Documents provided by the Contractor and accepted by the Government for use in constructing the project, including but not limited to final design drawings and specifications, schedules, submittal registers, and color boards.

## 1.5.7 Corps of Engineers Guide Specifications (UFGS)

Includes the Corps of Engineers Unified Facilities Guide Specifications (UFGS) for Military Construction, the narrow-scope sections developed by the Fort Worth District (FWGS), and the Fort Worth District Supplements to the UFGS.

## 1.5.8 Design Documents

Documents which include design drawings, project specifications, and design analyses (basis of design and calculations) prepared by or under the direct supervision of registered professional architects and engineers and proposed by the Contractor to meet the requirements of this Contract.

## 1.5.9 Design Drawings

Documentation showing in graphic and quantitative form the extent, design, location, relationships, and

dimensions of the construction to be provided by the Contractor. (Note: Shop Drawings, as defined in Section 01330, "CONSTRUCTION SUBMITTAL PROCEDURES," are not to be provided until after design drawings are **accepted** for construction.)

#### 1.5.10 Designer

Architects and Engineers (A/E) associated with the Contractor who are responsible for the design and have the qualifications and experience specified.

#### 1.5.11 Designer of Record

The Contractor's Architect/Engineer (A/E) is the "Designer of Record" and officially approves the design submittals, construction submittals, and record drawings. There shall be a designer of record for each design discipline. The designer of record is solely liable for design errors and/or omissions and shall have professional liability insurance to insure the designer against design errors and omissions. The Contractor's Quality Control Staff will check and certify all submittals. See paragraph DESIGNER(S) OF RECORD for additional requirements.

#### 1.5.12 Mandatory Guides

Mandatory Guides are those guides listed in Section 01016 DESIGN DOCUMENT REQUIREMENTS, or in the Project Table of Contents as Attachments, which shall be included in the Contractor's technical specifications. Some of the guides may be partially edited while others may not be edited at all. The Contractor shall edit or finish editing these guides.

#### 1.5.13 Mandatory Sections

Mandatory Sections are those sections included in Divisions 2 through 16 of the Contract which have been completely edited and shall be included in the Contractor's technical specifications verbatim.

#### 1.5.14 Solicitation or Request for Proposal (RFP)

Documents furnished to prospective offerors containing proposal information and specifying criteria and project requirements for design and construction of the project. The documents include this specification, attachments, and the information drawings.

#### 1.5.15 Construction Specifications

Construction specifications are the Contractor's developed project specifications consisting of the Government-furnished Division 1 (General Requirements) sections and the Contractor-written sections in Divisions 2 through 16 which will be used to construct the project. Divisions 2 through 16 shall include the Contract mandatory specifications, the Contractor-edited RFP mandatory UFGS and FWGS guide specifications, Contractor-developed UFGS sections for those items of work covered by the UFGS guides, and the Contractor-developed sections for those items of work not covered by the UFGS and FWGS guides.

#### 1.5.16 60 Percent Preliminary Design Submittal

60 Percent Preliminary Design Submittal shall mean 60 percent building and site design and 100 percent demolition and environmental abatement work submittal. See paragraph DESIGN SUBMITTALS for further clarification.

### 1.6 SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES

#### 1.6.1 Certification

With each submittal the Contractor shall certify that all items submitted in the design documents (after contract award) comply with the Contract requirements. The criteria specified in this Contract are binding contract criteria and in case of any conflict, after award, between the Contract criteria and Contractor's submittals, the criteria stated in the Document Order of Precedence in Section 00800 SPECIAL CONTRACT REQUIREMENTS will govern. The Contractor shall present with the letter of transmittal for each design submittal (including the 100 percent corrected design (compliance check) submittal) a certification that the submittal (drawings, specifications, design analysis, etc.) complies with the requirements stated above. Prepare the design certification and transmittal letter in the format shown on Attachment A attached at the end of this Section.

##### 1.6.1.1 Signatures

The certification shall be signed by an officer of the Contractor's company, authorized to contractually obligated the company, and the licensed architect/engineer designer of record attesting that the drawings, specifications, and design analyses prepared for the construction of the project meet the requirements of the Contract.

##### 1.6.2 Deviations

Deviations from the Contract requirements shall be identified in each design submittal's letter of transmittal. Deviations from the Contract requirements will be considered for approval by the Contracting Officer. The Contracting Officer may reject any deviation proposed by the Contractor without explanation.

##### 1.6.3 Field Verification

The Contractor shall verify field conditions which are significant to design by field inspection, researching and reviewing the existing documents pertaining to the site and existing building(s), and evaluating observable existing conditions. The information shall be reflected in the design documents. It is the responsibility of the Contractor to evaluate existing conditions in the immediate proximity of the project to determine if such conditions may affect, or be affected, by the proposed construction. If there are site conditions which appear to affect the proposed construction the Contractor shall inform the Contracting Officer, in writing, before proceeding with the **work**.

##### 1.6.4 Number of Copies

The number of copies for distribution is specified in paragraph "Review Document Distribution." For each design submittal, submit for review and acceptance the specified number of copies of the construction drawings, specifications, design analyses, equipment schedules, submittal register, and all other submittal data, which shall be in accordance with the requirements of the Contract Documents. Upon final acceptance, make distribution of the accepted design and construction documents within 7 calendar days. With each distribution, provide one CD-ROM disk (or more if required) containing all documents. The CD-ROM disks shall be fixated "Final," which is a recording option that renders the disk totally used

so that no other data tracks can be added in a later recording session. Proposed modifications shall be submitted in 8 copies. Final modifications, after negotiations, shall be submitted in 8 copies (including one reproducible).

#### 1.6.5 Final Construction Documents

Each distributed set shall consist of full-size paper drawings, specifications, submittal register, design analysis, and a CD-ROM disk(s) containing all of the final design documents (e.g. drawing, specification, submittal register, and design analysis files). Provide documents complete, accurate, and explicit enough to show compliance with the Contract requirements and to permit construction. See Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements. During and upon completion of the project, the accepted design documents shall be corrected to reflect as-built conditions in accordance with Section 01770 CONTRACT CLOSEOUT.

##### 1.6.5.1 Final Construction Drawings

In addition to the required number of hard copies of final design documents (e.g. drawings, specifications, submittal register, and design analysis), final construction (100 percent) drawings and record (i.e. as-built) drawings after the completion of the project shall be submitted on CD-ROM disk in the CADD format required by the Contract. On the CD-ROM disk include the electronic .dgn or .dwg CADD drawing files, the CADD drawing files in .CAL format (CADD files converted to .CAL) for viewing on Max View Reader, and an Excel spreadsheet listing for each drawing the drawing number, sequence number, level/layer assignments, line colors, line weights, and line types. See Section 01016 DESIGN DOCUMENT REQUIREMENTS for additional requirements.

#### 1.6.6 Specifications and Design Analysis

Specifications and design analysis shall be provided in hard copy and on the same CD-ROM disk as the drawings, in Microsoft Word for Windows format (Version Microsoft Word 97 minimum, but shall be compatible with the version used at Fort Polk). The Division 1 sections included in the Contract shall be reprinted in the final 100 percent construction specifications. Hard copies of the specifications and design analyses shall be bound separately in 3-ring binders. Each set of documents shall have its own Table of Contents. See Section 01016 DESIGN DOCUMENTS REQUIREMENTS for editing and format requirements.

#### 1.7 DESIGN DOCUMENTS

Design documents shall include construction drawings, specifications, submittal register, design analysis, and drafts of DD Form 1354. Detailing and installation of all equipment and materials shall comply with the manufacturers' recommendations. Construction drawings and specifications shall not make reference to Contract requirements. The Contractor, including designers, shall visit the site and make other trips as necessary during the design to accomplish the work. See Section 01016 DESIGN DOCUMENT REQUIREMENTS for additional descriptions.

##### 1.7.1 Drawings

See paragraph SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES, subparagraph "Final Construction Documents."

##### 1.7.2 Specifications

Format shall be the Construction Specification Institute (CSI) 16-Division, 3-Part Section format and match that used by the UFGS guide specifications. Sections which are not part of the UFGS and Fort Worth District guide specification series shall be numbered in accordance with the CSI section numbering system defined in CSI MasterFormat. No two sections shall have the same section number. Specifications shall be in sufficient detail to fully describe and demonstrate the quality of materials, the installation and performance of equipment, and the quality of workmanship. Division 1 specifications shall consist of the Division 1 sections included in the Contract. The specifications shall clearly identify the specific products chosen to meet the requirements of the Contract (manufacturers' brand names and model numbers or similar product information). Turfing sections shall indicate planting dates.

##### 1.7.3 Design Analysis

Describe the design of each discipline of work, including all features and the necessary calculations, tables, methods, and sources used in determining equipment and material sizes and capacities. Provide sufficient information to support the design of the various categories such as, but not limited to, architectural, interior design, structural, mechanical, electrical, civil including grading, drainage, paving, environmental, and outside utility services, and Contract included items.

##### 1.7.4 DD Form 1354

The 1354 process consists of a preliminary (draft) DD Form 1354 and a Final DD Form 1354. Prepare a preliminary (draft) of DD Form 1354, TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY, so that Fort Polk can update their real property maintenance records. This draft shall contain as many of the resource code items with cost and quantity data as can be developed from the Contractor's final 100% design documents. Submit it to the Contracting Officer within 30 days of the Government's acceptance of the 100% design documents. The Government will use this Final DD Form 1354 to develop the interim 1354. The form, a sample of a completed form, and a general list of resource codes with cost and quantity data are included in the ATTACHMENTS. An electronic file of the form, DD1354.frl, for use with Delrina Perform Pro Form Filler, version 16 Jul 1992, or its successor software Form Flow Filler, Version 2.22 (March 5, 1999) is located on the Solicitation and Contract CD-ROM disk.

#### 1.8 DESIGN AND CONSTRUCTION PERSONNEL QUALIFICATIONS

##### 1.8.1 Project Manager - Design

The design project manager shall have a recognized four year or higher college degree in architecture or engineering, be professionally licensed, and have at least 3 years experience in managing design projects and have at least 5 years of design experience. The Design Project Manager may be the lead designer, and may be the same individual as the Construction Project Manager.

##### 1.8.2 Project Manager - Construction

The project manager shall have a recognized four-year or higher college degree in architecture, engineering (or related technical fields), or construction management and have at least 5 years experience in managing design and construction projects; or have 10 years experience in managing construction projects only.

### 1.8.3 Project Architect

The project architect shall have a recognized four-year or higher college degree in architecture, be professionally licensed, 3 years experience as a lead architect, and have at least 5 years design experience.

### 1.8.4 Designers

In addition to the Project Architect, provide at least one professional licensed architect or engineer for each of the other design disciplines (landscape architectural, civil, electrical, mechanical, and structural design) with at least 5 years experience in their discipline. Each lead designer shall have a recognized four-year (or higher) college degree in architecture or engineering. The fire protection system shall be designed by a registered engineer with a minimum of five years experience in designing fire protection systems.

### 1.8.5 Design Quality Control Manager

Design quality control manager and the alternate manager qualifications are specified in Section 01430 DESIGN QUALITY CONTROL. Design quality control manager shall not be the same person as the construction quality control manager.

### 1.8.6 Construction Quality Control Manager

Construction quality control manager and assistants qualifications are specified in Section 01451 CONSTRUCTION QUALITY CONTROL. Construction quality control manager shall not be the same person as the design quality control manager.

### 1.8.7 Registered Communications Distribution Designer

This project requires the utilization of a Communications Consultant who is a Registered Communications Distribution Designer (RCDD). This person shall design the telecommunications systems for the project, be involved in all phases of design, and shall coordinate with other disciplines for the systems listed in the Design Criteria References and these Design Instructions. This communication consultant shall have a minimum of five years of Telecommunications Design experience. The use of any on-staff electrical engineers for design of the telecommunication systems and who are not RCDD is not acceptable.

### 1.8.8 Industrial Hygienist

Industrial Hygienist (IH), or Designated Industrial Hygienist, shall be a professional qualified by education, training, and experience to anticipate, recognize, evaluate, and develop controls for occupational health hazards.

**[AM #0001] \_\_\_\_\_ (deleted text)** The Designated IH shall be board certified in the practice of industrial hygiene as determined and documented by the American Board of Industrial Hygiene (ABIH), have EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C, and have a minimum of **[AM #0001] 5** years of comprehensive experience in planning and overseeing abatement activities for asbestos, lead, regulated materials, and mold. Provide copies of the Designated IH's current valid ABIH certification, "Contractor/Supervisor" course completion certificate (s), the most recent certificate(s) for required refresher training, and the employee "Certificate of Worker Acknowledgment" as required in Section 13280 ASBESTOS ABATEMENT. The Designated IH shall be completely independent from the Contractor according to federal, state, or local regulations; that is, shall not be a Contractor's employee or be an employee or principal of a firm in a business relationship with the Contractor negating such independent status. **[AM #0001] \_\_\_\_\_ (deleted text)**.

### 1.8.9 CADD Personnel

CADD personnel shall be proficient in the preparation of architectural and engineering drawings and the CADD equipment that will be used to create the required drawings and record drawings. The lead CADD person shall have at least 5 years experience on the proposed equipment.

### 1.8.10 Project Schedule Scheduler

Qualifications for the Scheduler are specified in Section 01320 PROJECT SCHEDULE.

## 1.9 DESIGNER(S) OF RECORD

The Contractor shall identify, for approval, the Designer of Record for each area of work. One Designer of Record may be responsible for more than one area. All areas of design disciplines shall be accounted for by a listed, registered Designer of Record. The Designer(s) of Record shall review, approve, stamp, sign, and date all design and construction drawings under their responsible discipline at each design submittal stage, including modification drawings after start of construction (see Section 00800 SPECIAL CONTRACT REQUIREMENTS, clause "Registration of Designers.")

## 1.10 CONSTRUCTION MANAGEMENT KEY PERSONNEL

The Contractor's construction management key personnel shall be actively involved during the design process to effectively integrate the design and construction requirements of this Contract. In addition to the typical required construction activities, the Contractor's involvement shall include, but is not limited to, actions such as integrating the design schedule into the Master Schedule to maximize the effectiveness of fast-tracking design and construction (within the limits allowed in the Contract), ensuring constructability and economy of the design, integrating the material and equipment acquisition programs to meet critical schedules, effectively interfacing the construction QC program with the design QC program, and maintaining and providing the design team with accurate, up-to-date redline and as-built documentation. The Contractor shall require and manage the active involvement of key trade subcontractors in the above activities. The Contractor's Quality Control Staff will check and certify all submittals.

## 1.11 DESIGN SUBMITTALS

### 1.11.1 General

The Contractor shall schedule the number and date of the design submittal phases and conferences. Design submittals are required at the 60 percent preliminary design stage, the 100 percent final design stage, and at the corrected final design stage. The number, date, and contents of the design submittal phases shall be reflected in the project schedules. An authorization letter to start work will be provided separately by the Contracting Officer for each phase of the design. See paragraph "Government Design Review and Acceptance" and Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

1.11.2 60 Percent Preliminary Design Submittal

The 60 percent preliminary design submittal includes the 60 percent in-progress building and site design and the 100 percent complete demolition and environmental abatement plan and drawings. These documents shall be packaged and stamped "For Review Only - 60% Design". Each sheet of the drawings shall also be stamped except for the demolition and environmental abatement drawings which will be stamped 100% design submittal. See Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

1.11.3 100 Percent Final Design Submittal

The 100 percent final design submittal includes all design and construction documents, ready for start of construction. This includes the complete site, utility, and building design, in addition to the demolition and environmental abatement plan and drawings, and shall be stamped "For Review Only -100% Design". Each sheet of the drawings shall also be stamped. Contractor shall make final proposal of all materials and finishes at this stage. See Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

1.11.4 Compliance Check Design Submittal

The compliance check design submittal(s) include all construction documents after incorporation of the Government's 100 percent final design review comments. These documents shall be stamped "100% Corrected Design"; and each sheet of the drawings shall also be stamped and signed by the Designer of Record.

1.11.5 Insufficient Design Submittals and Delays

No additional time for completion of the Contract will be granted to the Contractor due to insufficient design submittals. Delays caused by the Contractor in completion of the 60 percent design, 100 percent design, or the 100 percent corrected design will not be considered as valid reason to delay the entire project within the contract project duration.

1.11.6 Deviations or Betterments

The Contractor shall bring to the Government's attention any deviations or betterments made to the RFP and Contractor's proposal documents. These shall be summarized in letter form with reasons and highlighted or clouded details on the applicable drawings and documents submitted. See Section 00800 SPECIAL CONTRACT REQUIREMENTS for additional requirements concerning betterments.

1.11.7 Review Design Documents

The Contractor shall submit all drawing design documents on blue-line media with "FOR REVIEW" stamped in 1/2-inch high letters in the lower right corner in red ink. Specifications and Design Analyses shall be hard copy with "FOR REVIEW" stamped in 1/2-inch high letters in the lower right corner in red ink. The Contractor shall submit Contractor-approved documents on black-line media with "APPROVED FOR CONSTRUCTION" similarly stamped.

1.12 DESIGN REVIEWS

Design reviews will be held in the offices of the Fort Polk Resident Office at the preliminary (60 percent), final (100 percent), and corrected final stages of the final design in accordance with the Contractor's Project Schedule. The Government shall have thirty (30) calendar days review period for each submittal (60 percent design and 100 percent Design) and fourteen (14) calendar days review period for submittal of the Compliance Check Design (corrected final design). Design review conference(s) between the Contractor and the Government may be held after submittal of the 60 percent preliminary and 100 percent final design(s) if the Government determines them necessary. The time for Government review will be calculated from the date of receipt of the design submittals at the Government address to the date the annotated review comments are mailed to the Contractor.

1.12.1 Review Intent

Reviews will be for conformance with the technical requirements of the Contract. If the Contractor disagrees technically with any comment and does not intend to comply with the comment, the Contractor shall clearly outline, with ample justification, the reasons for noncompliance within 5 days after receipt of these comments in order that the comment(s) can be resolved. The Contractor shall furnish disposition of all comments, in writing, with the next scheduled submittal. If the Contractor believes the action required by any comment exceeds the requirements of the Contract, the Contractor shall immediately notify the Contracting Officer in writing and take no action regarding this matter until the matter is resolved.

1.12.2 Late Submittals

If a design submittal is over one (1) day late in accordance with the latest design schedule, the Government review period will be extended 7 days. The review conference will be held the week after the review period. Submittal date revisions shall be in writing at least one week prior to the affected submittal.

1.12.3 Review Document Distribution

For each review, review documents shall be sent, in the quantity indicated, to the addresses listed below. The documents will be in their then present "on-board" design status. All documents must contain an index of contents. Work shall, however, continue up to the time of the review conference date(s) when 2 copies of then-current design documents will be brought to the issuing office for the conference review. Originals of transmittal letters shall be sent to the Area Engineer, address as shown below, and copies should accompany each mail package. Transmittal letters shall indicate distribution by use of the "ATTN" code shown in the address.

No. of Copies

(8 Copies) District Engineer  
US Army Engineer District, Fort Worth  
ATTN: CESWF-EC-AM (Ms. Patty Murphy)  
P.O. Box 17300  
Fort Worth, TX 76102-0300

(1 Copy) Mr. Harold Hansen  
ATTN: AMSEL-IL-DE-IN-CO (SAIC)  
1435 Porter Street, Suite 200  
Fort Derrick, Maryland 21702-2505

(8 Copies) Commander HQ JRTC and Fort Polk

AFZX-PW-EP/(Mr. Ellis Smith)  
 Building 3304  
 Fort Polk, LA 71459-7100

(5-Review) U.S. Army Corps of Engineers  
 (5-Final) ATTN: Breck Graves  
 Bldg. 4741  
 2315 Service Command Loop  
 Fort Polk, LA 71112-2505

#### 1.12.4 Additional Review Time

If for any reason the Government requires more time than that stated for review, then the Contractor will be granted an extension of time equal to the number of calendar days of delay.

#### 1.12.5 Government Design Review and Acceptance

Government personnel will present review comments for discussion and resolution. Copies of comments, annotated by the Designer of Record with comment action agreed on, will be made available to all parties at least 10 calendar days prior to the conference. Review conferences will be scheduled by the Contractor. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments will be incorporated into the Documents. On receipt of final corrected design documents (with all backcheck comments incorporated) and if acceptable, the Contracting Officer shall notify the Contractor in writing that the documents are accepted and construction may begin. Furnish the final design and construction documents in accordance with paragraph "Review Document Distribution." The Government, however, reserves the right to not to accept design document submittals if outstanding unincorporated comments are of too great a significance. In this case, every effort shall be made during follow-up action between the Contractor and the Fort Worth District to resolve conflicts and problems such that documents can be accepted. However, if final submittal(s) are incomplete or deficient, requiring correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of \$500.00 per submittal.

##### 1.12.5.1 Final Construction Documents

Following the last submittal, the Contractor shall forward the completed original set of reproducible for acceptance. Upon Government acceptance of corrected 100 percent final design documents, the original will be returned to the Contractor for reproduction purposes. The Contractor shall be responsible for reproduction. Within 7 calendar days after acceptance, the Contractor shall mail 1 complete set of the accepted design documents to the Fort Worth District, CESWF-EC-AM Attn: Patty Murphy and 5 complete sets to the Corps of Engineers' Fort Polk Resident Engineer. Each set shall consist of full size paper drawings, specifications, and design analysis and CD-ROM disk(s) containing all drawing, specifications, submittal register, and design analysis files). During and upon completion of the project, the accepted design documents shall be corrected to reflect as-built conditions in accordance with Section 01770 CONTRACT CLOSEOUT.

#### 1.13 COORDINATION

##### 1.13.1 Written Records

The Contractor shall prepare a written record of each design site visit, meeting, or conference, either telephonic or personal, and furnish copies to the Contracting Officer and all parties involved within 5 working days. Include subject, names of participants, outline of discussion, and recommendation or conclusions. Number each written record for the particular project under design in consecutive order.

##### 1.13.2 Design Needs List

Throughout the life of the Contract the Contractor shall furnish the Contracting Officer a biweekly "needs" list for design related items. This list shall itemize in an orderly fashion design data required by the Contractor to advance the design in a timely manner. Each list shall include a sequence number, description of action item, and the name of the individual or agency responsible for satisfying the action item and remarks. Maintain the list on a continuous basis with satisfied action items checked off and new action items added as required. Once a request for information is initiated, that item shall remain on the list until the requested information has been furnished or otherwise resolved. Mail copies of the lists\ to both the Contracting Officer and the agencies tasked with supplying the information.

#### PART 2 PRODUCTS (Not Applicable)

#### PART 3 EXECUTION

##### 3.1 ATTACHMENTS

ATTACHMENT A

[Prime Contractor's Letterhead]

Date: \_\_\_\_\_

Contract No.: \_\_\_\_\_

[Reviewing Component Address]

Subject: DESIGN CERTIFICATION AND TRANSMITTAL FOR

Project Title: \_\_\_\_\_  
Project Location: \_\_\_\_\_  
Contract No.: \_\_\_\_\_

Gentlemen,

Enclosed are the following documents which I hereby certify are in compliance with the Contract requirements of the subject construction contract and can be used to commence construction subject to Government acceptance:

1. Project Drawings
2. Project Specifications
3. Design Analysis
  - a. Civil
  - b. Water Supply and Wastewater Collection
  - c. Architectural
  - d. Interior Design
  - e. Structural
  - f. Mechanical
  - g. Fire Protection
  - h. Electrical
  - i. Environmental
- j. Landscape Architectural
4. Submittal Register

\_\_\_\_\_  
[Typed Name and Signature of the  
Officer of the Prime Contractor's company]

5. Deviations

Copy to: [As standard with the Contractor]

\_\_\_\_\_  
[Typed Name and Signature of the  
Licensed Architect/Engineer of Record]

-- End of Section --

SECTION 01016

DESIGN DOCUMENT REQUIREMENTS  
09/2001  
AMENDMENT NO. 0001

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 WELDING SOCIETY (AWS)

AWS D1.1 (2000) Structural Welding Code - Steel

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO)

ICBO Bldg Code (1997) Uniform Building Code (3 Vol.)

MILITARY HANDBOOKS (MIL HDBK)

MIL HDBK 1008C (10 June 1997) Fire Protection For Facilities Engineering, Design and Construction

US ARMY CORPS OF ENGINEERS, SOUTHWESTERN DIVISION (SWD)

SWD-AEIM (October, 2000) Architectural and Engineering Instructions Manual (SWD-AEIM)

1.2 SUBMITTALS

SD-05 Design Data

Design Data Checklists; .

Include the Fire Protection, Code Analysis, and Handicapped Checklists (Attachments A, B, and C) at the end of this Section with the Design Analysis and submit with the design submittals.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 DRAWINGS

Prepare, organize, and present drawings in the format specified. Provide drawings complete, accurate, and explicit enough to show compliance with the Contract requirements and to permit construction. The layout of individual sheets and the organization of the assembled set shall follow and communicate a logical sequence. General information shall be presented first, progressing to more detailed information. When assembling details, begin in the upper left-hand corner of the sheet with letters progressing to the right and down. Drawings illustrating systems proposed to meet the requirements of the Contract performance specifications shall reflect proper detailing for each such system to assure appropriate use, proper fit, compatibility of components and coordination with the design analysis and specifications required by this section. Coordinate drawings to ensure there are no conflicts between design disciplines and between drawings and specifications. For specific drawing requirements, see paragraphs: 60 PERCENT PRELIMINARY DESIGN REQUIREMENTS and 100 PERCENT FINAL DESIGN REQUIREMENTS.

The following subparagraphs cover general drawing requirements and supplement those specified in SWD-AEIM, Chapter VIII DRAWINGS.

3.1.1 CADD Drawings

The Contractor shall ensure that all delivered CADD digital files and data (e.g., base files, reference files, cell/block libraries) are compatible with the Government's target CADD system and operating system, which is Bentley Systems MicroStation, version 5 or SE, running on Microsoft Windows 95/NT, and adhere to the standards and requirements specified. The term "compatible" means that data is in native digital format i.e. .dgn, and can be accessed directly by the target CADD system without translation, preprocessing, or postprocessing of the digital data files. It is the responsibility of the Contractor to ensure this level of compatibility.

3.1.2 CADD Standards

CADD drawings shall be prepared in accordance with the applicable general and discipline-specific provisions for drawing formats, level/layer assignments, line colors, line weights, and line types of the "Tri-Service A/E/C Standards" and the "SWD Architectural and Engineering Instruction Manual (AEIM), Chapter VIII, "Drafting Standards."

The CADD standards for design of this project are located at the following Web sites:

<http://tsc.wes.army.mil/html/standards/aec>

Seed/prototype files, containing the Government's preset standard settings can be downloaded from the Internet at the following address:

<http://www.swf.usace.army.mil/ed/>

Electronic reference files containing the Government's standard border/title block sheets can be downloaded from the Internet at the following address:

<http://www.swf.usace.army.mil/ed/>

The Contractor shall submit a written request for approval of any deviations from the Government's established CADD standards. No deviations will be permitted unless prior written approval of such deviation has been received from the Government.

### 3.1.3 Size of CADD Drawings

Overall Size of CADD drawings shall be 28 inches by 40 inches, at the trim line. Full size drawings shall be submitted for all design submittals. English working units and the District's standard file-naming convention shall be used.

### 3.1.4 .CAL Files

In addition to copying the electronic CADD drawing files to the Submittals' CD-ROM disk, include the drawings in .cal format so that the drawings may be viewed on screen using MaxView Reader that is located on the Solicitation and Contract CD-ROM disk. Include a "sendable" compiled Project.svd index file, created with MaxView Author, so that the drawings may be viewed by double-clicking on this file. MaxView's web site is <http://www.maxview.com>. Keep the CADD files and the .cal files in separate folders.

### 3.1.5 Drawing Format

Title block shall include, as a minimum, project title and location, sheet title, and sequence number. For each design submittal, each Contractor-prepared drawing shall bear the printed name and signature of the registered architect or appropriate registered engineer responsible for the work portrayed on that drawing and proposed to meet the Contract requirements. For the final submittal, each Contractor-prepared drawing shall bear the stamp or seal and signature of the registered architect or appropriate registered engineer responsible for the work portrayed on that drawing and proposed to meet the Contract requirements.

### 3.1.6 Drawings Sequence

Arrange drawings by design discipline in accordance with the SWD-AEIM, Chapter VIII, Appendix A, Plate D1, Standard Arrangement Of Drawings.

### 3.1.7 Drawings Required

As a minimum, the construction drawings shall consist of the following:

- a. Cover or Title Sheet
- b. Index of Drawings (each technical discipline shall have a separate drawing legend sheet located in front of each respective section), Legend, and Abbreviations
- c. Civil/Site Drawings, including Utility Drawings (Water Supply, Wastewater, Gas, Electrical, Fiber and Communication)
- d. Soil Boring Locations and Logs of Borings
- e. Turfing and Landscaping Drawings, including Irrigation Layout Drawings
- f. Architectural Drawings
- e. Interior Design Drawings
- f. Structural Drawings
- g. Mechanical Drawings
- h. Fire Protection Drawings
- i. Electrical Drawings (including communications, security and fire alarm)
- j. Lightning Protection
- k. Environmental Drawings
- l. Schedules - Doors, Windows, Interior Finishes, Equipment, etc.

### 3.1.8 Drawing Scales

Work shall be drawn at the scales listed below. Other scales may be used only by written authorization through the Contracting Officer. All disciplines should use the same scale for plan sheets. Scale for all drawings and delineation will permit complete legibility. A graphic bar or checkerboard scale will be provided on each sheet near the lower left hand corner of th sheet. Unless specified elsewhere, conventional scale standards are as follows:

	<u>ENGLISH)</u>
Site Plans (Buildings)	No smaller than 1-inch = 30 feet
Floor Plans (Note 1)	1/8-inch to 1/4-inch = 1 foot
Roof Plans	1/8-inch = 1 foot
Exterior Elevations	1/8-inch = 1 foot
Interior Elevations	1/4-inch
Cross Sections	1/4-inch to 1/8-inch
Wall Sections (Note 3)	3/4-inch = 1 foot
Stair Details	3/4-inch = 1 foot
Details (Note 2)	1 1/2 inches or 3 inches = 1 foot
Reflected Ceiling Plans	1/8-inch = 1 foot
Interior Toilet Elevations	3/4-inch to 1/2-inch
Wall Types	1 1/2 inches or 3 inches = 1 foot

#### Notes:

1. Scale of composite plans shall be as required so that the entire facility is drawn on one sheet without break lines.
2. The details shall be large enough to show all fixtures, accessories, equipment, materials,

manner of construction, clearances required for proper maintenance, and complete dimensions. Toilet rooms and Equipment rooms are examples of the kind of spaces which shall be drawn as a Detail Plan. All details containing sheet metal flashing shall be 3 inches = 1 foot.

3. May be 3/4-inch = 1 foot if pertinent details are shown at larger scale.

### 3.1.9 North Arrows

North arrows shall be oriented the same direction on all plan sheets and by all disciplines, including site and civil drawings. Plan north shall be "up" or to the left on the drawings. Indicate true north on composite plan drawings.

### 3.1.10 Legends and Symbols

Standard material symbols used on the drawings shall be provided as a separate legend drawing located just in front of the drawings in the set. Add additional material symbols to the Legend Sheet as needed for the project.

The standard symbols used for amendments (a triangular box) or contract modifications (a type of circular box, see the chapter on Drafting Criteria) shall not be used for any other purpose, and care must be taken to avoid using similar appearing but technically different symbols.

### 3.1.11 Key Plans

Provide key plans whenever the site or floor plan occupies more than one sheet of drawings. Locate the Key Plans at a uniform location on all site and floor and roof plan sheets to show the interrelationship between the building portions. Orient key plans in the same direction as the floor plan on all plan type drawings of all disciplines. All key plans shall be the same size and same location on the drawings.

### 3.1.12 Building Composite Plans

When required because of size of the building footprint, provide composite floor plans for the architectural, structural, mechanical, fire protection, life safety, and electrical disciplines. Include match lines for combining individual portions of floor plans. For mechanical plans, provide composite plumbing and heating, air conditioning, and ventilation (HVAC) plans showing plumbing and HVAC systems for each level. For plumbing composite sheets, building outline and pertinent HVAC equipment shall be half-toned with plumbing system at standard lineweight. For HVAC composite sheets, building outline and pertinent plumbing equipment shall be half-toned with HVAC equipment at standard lineweight. Do not provide construction notes on these plans. Include a key plan and room schedule legend on the composite plan sheets.

### 3.1.13 Schedules

Schedules shall be clear and complete. Furnish as many columns as necessary to present the essential information. Do not use the "Remarks" column as a substitute for an information column. Normally a single item shall be presented on each schedule line. Other scheduling methods as standard with the Architect-Engineer may be used if approved by written authorization from the Contracting Officer.

### 3.1.14 Notes

Notes may be placed on drawings to reduce the amount of repetitive drafting, provided that clarity is not lost. General notes should be placed at the right-hand edge of the sheet and, if possible, should be located on the first sheet in the set. Notes that pertain to each drawing should be placed on each drawing. Keyed notes are permitted. General notes may be provided on a separate sheet if space does not exist on the Abbreviation and Legend sheets.

### 3.1.15 Dimensions

Dimensions shall be complete, accurate, and fully coordinated. Use slashes, not arrowheads or dots. Dimensions should be to points easily measurable in the construction, and shall be laid so as not to eliminate refiguring in the field. Dimensions should be tied-in to column lines, etc., to facilitate checking. Plan dimensions for frame construction should be to face of stud (or sheathing) for exterior walls, to one face of stud for interior partitions, and to centerline of openings. For masonry construction, dimensions shall be to one or both nominal faces of masonry and to jambs of openings.

a. **(AM#1) Horizontal** dimensions shall occur on the plans and vertical dimensions on sections and elevations.

### 3.1.16 Standard Drawings

Standard Drawings, when furnished for site adaptation, will generally be utilized without basic architectural change. Portions of the drawings not pertinent to the project will be deleted. Specific instructions will be given when design changes are required.

### 3.1.17 Sketches

All sketches presented during the design phase shall be reduced to 8-1/2" by 11" and included in the design analysis to document the design options and decisions evaluated during the design process.

## 3.2 CONSTRUCTION SPECIFICATIONS

### 3.2.1 Editing Construction Specifications

The Contractor shall use Corps of Engineers' UFGS Guide Specifications. Specification paragraphs and subparagraphs shall not be rewritten to lessen the quality of the original guide specification sections. Only bracketed choices and inapplicable items may be deleted unless the changes are required to bring the specification into conformance with the performance specifications of the Contract. The Contractor shall complete the editing of all options in these specifications. Where designer notes are provided, the Contractor shall edit the choice in accordance with the recommendations and guidance of the Notes. **The specifications shall clearly identify, where appropriate, the specific products chosen to meet the requirements of the Contract (manufacturers' brand names and model numbers or similar product information). The Contractor is responsible for coordinating references, along with the Contract performance requirements, to specific specification sections (number and title) within the construction specifications.** See additional requirements in paragraphs 60 PERCENT DESIGN REQUIREMENTS and 100 PERCENT DESIGN REQUIREMENTS of this Section and in Section 01015 DESIGN REQUIREMENTS AFTER AWARD, paragraph DESIGN DOCUMENTS..

#### 3.2.1.1 Required Modifications to Commercial Guide Specifications

- a. Indicate the guide specification series (e.g. CSI SpecText, MasterSpec, SpecLink) in either the header or footer of each section.
- b. Change references to the "Architect" or "Engineer" to "Contracting Officer" and "Owner" to "Government".
- c. Change references to "Section 01300" or "Section 01300 SUBMITTALS" to "Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES."

#### 3.2.1.2 Additions

If the Construction Specifications do not cover a feature that is in the project, insert additional requirements in their proper locations to adequately cover the feature of work. Additions shall not **(AM#1) lessen** the quality of materials indicated by the specifications. If a new material is added, it shall be properly referenced in "REFERENCES," "MANUFACTURERS," "MANUFACTURED UNITS," "MATERIALS," "SUBMITTALS," "TESTS," and "INSTALLATION" paragraphs, as applicable.

#### 3.2.1.3 Deletion of Inapplicable Text Material

Delete all inapplicable text material to tailor the specifications to fit the project. After deletion has been made of all inapplicable paragraphs, subparagraphs, choices, and schedules from the body of the guide specifications (including but not limited to the correction of lists in "SUBMITTALS," "TESTS," and "INSTALLATION" paragraphs), delete all nonapplicable references listed in the preceding "REFERENCES" and "MATERIALS" paragraphs.

#### 3.2.1.4 References to Specification Sections

The Contractor shall be responsible for coordinating references, along with the Contract requirements, to specific specification sections (number and title) within the project specifications. Revise section references (title and number) to reflect the titles and numbers of specification sections used.

#### 3.2.1.5 Construction Submittals

The Contractor is responsible for all submittals. See Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES for the definition of Government Approved and For Information Only (FIO) submittals. All submittals shall be "FIO" unless otherwise specified. Submittals noted in the UFGS guides as "G" shall be changed to "For Information Only".

#### 3.2.2 Commercially Available Guide Specifications

For items of work not covered by the UFGS guide specifications, the Contractor may develop specifications utilizing commercially available construction guide specifications such as "SpecText" published by The Construction Specifications Institute and "MasterSpec" published by The American Institute of Architects. These must be converted to UFGS format to be compatible with the Corps of Engineers Resident Management System (RMS) and the Specsintact or BSD SpecLink (Building Systems Design, Inc., Atlanta, GA, <http://csi.worldweb.net/technic/master/bsdms.htm> and [http://www.bssoftlink.com/speclink/sl\\_frame.htm](http://www.bssoftlink.com/speclink/sl_frame.htm)). Do not use DBI/CSI Perspective to develop the construction specifications. The UFGS format is specified in the Specsintact ARMYSECT.tpl template. Commercially available guide specifications must be converted to the UFGS format in order to develop the submittal register. Use Wordspec to convert the sections to Specsintact SISGML to produce the sections' submittal registers. See paragraph "Required Modifications to Commercial Guide Specifications" concerning references to the "Architect/Engineer" and the "Owner". See Section 01015 DESIGN REQUIREMENTS AFTER AWARD, paragraph DESIGN DOCUMENTS for additional information.

#### 3.2.3 Division 1 Sections

Include Division 1 specifications sections contained in this Contract as part of the construction specifications without change.

#### 3.2.4 Format ForConstruction Specifications

Submit the construction specifications, including cover page and project table of contents, printed using a word processor. Use the Corps of Engineers Specsintact with SGML, Version 3.0 or higher, software. DO NOT submit sections that were created as straight MSWord documents. Any MSWord sections must be created using MS Word For Windows software with the Specsintact WordSpec Macro installed and engaged. These Word documents must be formatted using the Specsintact menu bars that WordSpec installs on the MSWord desktop. Otherwise, Word documents will not be compatible with Specsintact and WordSpec will not be able to convert the sections to Specsintact for producing the submittal register. Use If any commercially available guide specifications are used and are from a relational database system such as BSD SpecLink, then export the sections to Rich Text Format (RTF) word processing files to convert the sections to MS Word documents for those users who are specified to receive MS Word copies of the specifications.

The Corps of Engineers Specsintact and Wordspec software can be downloaded from the Internet at the following address:

<http://kscdl2.ksc.nasa.gov/specsintact/>.

The Corps of Engineers UFGS guide specifications (SI SGML format), the Lighting Fixture Standard Drawing 40-06-04 Details, and Design Criteria (e.g. Army Technical Manuals (TM's), Engineering Manuals, Engineering Technical Letters, Engineer Circulars, Engineer Pamphlets, Design Guides, and Military Handbooks) can be downloaded from the Internet at the following address:

[http://www.hnd.usace.army.mil/Techinfo/Engineer Publications or Support Documents](http://www.hnd.usace.army.mil/Techinfo/Engineer%20Publications%20or%20Support%20Documents)

The guides can only be downloaded in Winzip \*.zip files. These are downloadable executable files.

Specsintact software and the UFGS guide specifications can also be obtained from the current version of the Construction Criteria Base CD, issued by the National Institute of Building Sciences, telephone number 202/289-7800, fax number 202-289-1092, internet address is:

<http://www.nibs.org>.

Fort Worth District guide specifications and the District supplements to the UFGS guide specifications are located on the Internet at the following address:

<http://www.swf.usace.army.mil/links/e&c/ec-a/>

Print hard copies using laser printer and good quality white paper. For the design submittals, editing

of the Construction Specifications shall be shown by using redlining (underlined text) for text insertions and strikeouts for text deletions. The corrected 100 percent specifications with review comments incorporated shall be cleaned up (markings for insertion and deletions removed) and submitted in both hard copy and on CD-ROM disk. Carbon copies are not acceptable.

#### 3.2.4.2 Cover Page

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

- a. Project title, activity and location
- b. Construction contract number
- c. Construction Contractor's name and address
- d. Design firm's name and address
- e. Names of design team members responsible for each Contractor prepared technical discipline of the project specification
- f. Name and signature of a Principal of the design firm
- g. The Table of Contents shall list the 16 Divisions contained in CSI format and the specification section numbers and titles contained in the project specification. Do not list in the Table of Contents CSI Divisions that are not required for the project.

#### 3.2.5 Construction Submittals

All construction submittals shall be in accordance with Section 01330, "CONSTRUCTION SUBMITTAL PROCEDURES."

#### 3.2.6 Submittal Register

An electronic version of the ENG Form 4288 is located on the Solicitation and Contract Award CD-ROM disks in folder "Subreg." This version is the Specsintact DOS Submittal Register program and includes a Readme.txt file. Copy the files to the computer's C:\ drive, remove the read-only attributes, and then double-click on either file "subreg.exe" or on "submit.bat." This is **not** a Windows-based program so the mouse **does not** work. Editing instructions are on-screen, such as press the "F5 (add)" and then the "E" keys to create new empty submittals, the "PgDn" key to complete editing, and the "A" key to accept. For each submittal, fill in the Section Number, Activity Number if applicable, Paragraph Number, Description, Type of Submittal (e.g. SD-01 through SD-11(See Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES)), Classification (e.g. G or FIO), and the Contractor's proposed submittal date. Fill in columns "a" through "o" on the ENG Form 4288 and submit a copy of the "Subreg" folder with the updated files and a hard copy of the register as required for the various design submittals. Unless Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES allows a submittal to be Government approved ("G"), all submittals shall be "FIO" for Information Only (Contractor Approved) items. A blank MS Excel version of the Form 4288 Submittal Register is also included in the "Subreg" folder and may be used if allowed by the Contracting Officer.

#### 3.3 DESIGN ANALYSES

Prepare design analyses (basis of design, calculations, and selections) for each design discipline. Specific requirements relative to the technical content to be provided are specified in the paragraphs 60 PERCENT PRELIMINARY DESIGN REQUIREMENTS and 100 PERCENT DESIGN REQUIREMENTS. The design analyses shall be a presentation of facts to demonstrate that the concept of the project is fully understood and that the design is based on sound engineering. The design analysis for each discipline shall be in accordance with Chapter IX of the SWD-AEIM.

#### 3.4 COMMON DESIGN DEFICIENCIES

The work involved in making corrections due to common deficiencies becomes lost effort and time for both the designer and the reviewer. Carefully compare the design and contract documents with all requirements at several points in the design process to avoid unnecessary changes at a later date. Some of the requirements which are most often overlooked include:

- a. Requirements of the COE 2, Southwestern Division's ARCHITECTURAL AND ENGINEERING INSTRUCTIONS MANUAL (SWD-AEIM) have been repeatedly overlooked in the past.
- b. Failure to incorporate the Fort Worth District's supplemental local requirements to the UFGS guide specifications.
- c. Not using correct abbreviations or terminology on the drawings. Abbreviations must match what is used on the standard abbreviation sheet and terminology must match what is used in the standard technical guide specifications.
- d. Not using the correct scales, north arrow designation, section cut system, or incomplete dimensioning on the drawings.
- e. Not providing sufficient space for door operation hardware at doors which swing into a wall running perpendicular to the opening. 4 inches minimum is required between edge of door frame and perpendicular walls.
- f. Not providing correct and complete Design Analysis information written in the present tense. The Design Analysis will be written following the format indicated herein. A separate Fire Protection section in the Design Analysis with input from all disciplines is one area which is often overlooked and shall be included.
- g. Not correctly presenting or coordinating (to avoid interference) features of Fire Protection, Noise Control, and Physical Security.
- h. Not correctly referencing and cross referencing building sections, wall sections, details, etc.

- i. Failure to read and use technical notes in editing the Guide Specifications.
- j. Failure to coordinate all disciplines prior to submittal of projects for review.
- k. Improper use of fire-retardant wood. Fire-retardant wood is combustible; its use in buildings that are of noncombustible construction is extremely limited (see UBC for the minor allowable uses). Because of the potential for severe degradation, fire retardant plywood shall not be used in a roof or roofing system, or in structural applications.
- l. Incorrectly listing trade names in door hardware specifications in lieu of ANSI numbers and failure to correctly specify hardware finishes.
- m. Control joints in CMU walls and brick expansion joints in face brick are not shown on both architectural plans, elevations and structural plans, or are inconsistent. Note also control joint locating and coordination for floor tile per Tile Council of America recommendations.
- n. Failure to delete all publications which do not apply to the particular project.
- o. North is not oriented the same direction on all sheets (civil, site, arch).

### 3.5 DESIGN CERTIFICATION

The Contractor shall provide certification for each design submittal in accordance with paragraph SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES, subparagraph "Certifications," of Section 01015 DESIGN REQUIREMENTS AFTER AWARD.

### 3.6 60 PERCENT PRELIMINARY DESIGN REQUIREMENTS

Preliminary design documents shall include all applicable plans, details, and specifications specified in the paragraph DESIGN DETAILS, drawn to 60 percent completion or more, unless otherwise indicated. Identify and resolve conflicts in the design requirements, between the design requirements and the Contractor's design proposal, or those due to lack of thorough understanding of the nature and scope of work prior to submittal of the 60 percent design. Drawings, design analysis, and specifications will be reviewed for compliance with the Contract design requirements at this design submittal. Submit the following:

#### 3.6.1 Rendering

The Contractor shall prepare an architectural rendering for inclusion with the 60 percent Design Submittal. Rendering shall be eye-level of the building entrance, from a vantage point showing the cannon and flag pole. The rendering will be in full color, represent the final exterior color and material selections, approximately 20 inches by 24 inches in size, on illustration board, matted and framed with non-glare glass, and with project title on mat. The perspective shall be from an eye-level or low-level aerial point of view that will highlight the most attractive features of the project. The Contractor shall furnish one preliminary black-and-white sketch of the proposed rendering to the Contracting Officer, along with three (3) proposed exterior color schemes, for review and acceptance prior to proceeding with the color version.

#### 3.6.2 Drawings

Furnish all drawings that are required for the 100 percent submittal. Except for the demolition and environmental abatement work, all drawings shall be developed to approximately 60 percent completion. Drawings for demolition and environmental abatement work shall be 100 percent complete. The drawings shall be fully coordinated with the design analysis and specifications.

#### 3.6.3 Specifications

Provide all specification sections required for 100 percent submittal. Specifications for demolition and environmental abatement work shall be 100 percent complete. All other specifications required for the completion of the building, site work, utilities, turfing, and landscaping shall be at least mark-ups of the required technical and trade sections. Include the identification of the "author" of the industry guide specifications used, any mandatory guide specifications required in this Contract, and a project table of contents listing all sections to be included in the project.

#### 3.6.4 Submittal Register

Prepare a Submittal Register as specified in Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES and paragraph CONSTRUCTION SPECIFICATIONS, subparagraph "Submittal Register," of this Section. Submittals for demolition and environmental abatement work shall be 100 percent complete. Submittals for all other work shall be developed to the extent required to support the level of design included in this submittal. Submit a copy of the "Subreg" folder with the updated files and program and four hard copies of the register with this design submittal.

#### 3.6.4 Design Analysis

The design analysis shall give the basis for design for all disciplines and shall establish specific goals, objectives, and priorities for the design of this project. Identify, explain, and document use of design criteria and how the design meets goals, objectives, and priorities. The design analysis shall comply with SWD-AEIM, Chapter IX, and include narrative description and analysis of all building systems, appropriate checklists, calculations, and catalog cut sheets of equipment used in the design.

#### 3.6.5 Demolition

Provide the site and building demolition drawings, 100 percent complete, ready to start abatement and demolition work..

#### 3.6.6 Civil Design

Include all drawings required for 100 percent completion. Drawings shall fully describe the type and the scope of work required. 3.6.7 Landscaping Design

Provide Landscaping Plan, including sprinkler system layout, and any details required for this level of design.

#### 3.6.8 Architectural Design

60 percent architectural drawing submittal shall be a complete set of architectural drawings without large scale details. All other drawings shall be complete except referencing of the large scale details. Room finish schedule, and door, window, and louver schedules, shall all be complete except for references to details.

### 3.6.9 Interior Design

Provide SID/CID Notebooks and design analysis.

### 3.6.10 Structural Design

Provide details and notes for required structural work. Provide elevation views, sections, and details necessary to illustrate the design at a 60 percent level of completion. Roof framing plan(s) shall show sufficient details to clearly indicate the type of framing system used, size, and spacing of members and their elevations.

### 3.6.11 Mechanical Design

Sufficient plans, piping diagrams, sections, flow diagrams, details, schedules, and control diagrams/sequences shall be provided as necessary to define the required design intent at this level of design. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. Unless otherwise indicated, all floor plans shall be drawn at a minimum 1/8-inch = 1'-0" scale and shall show room names and numbers. Provide preliminary mechanical room sections to ensure that major equipment items, piping, and ductwork will fit as designed. For the 60 percent submittal, all supply and return mains shall be shown as double-lined although branch ducts, takeoffs, and ductwork to diffusers may be single-lined. Piping 6 inches and larger shall be shown as double-lined for the 60 percent submittals.

Complete Attachment C for mechanical room sizing.

### 3.6.12 Electrical Design

Fully coordinate the 60 percent design drawings with the design analysis. Provide sufficient plans, single-line diagrams, riser diagrams, details, and schedules as necessary to define the required design intent for this design level. Indicate all circuits, circuit breakers or fuse locations, panelboards, and PDUs known at this level of design.

### 3.6.13 Fire Protection Design

Provide the Life Safety Plan and the Fire Protection site and floor plans, complete. Fire protection details shall be sufficient for this level of design.

### 3.6.14 Environmental Design

Provide the following items for the 60 percent submittal:

- a. Identification of and removal procedures for hazardous materials in Building 350.
- b. Environmental Survey Sampling Plan, 100 percent complete, ready to start abatement and demolition work.
- c. Design Analysis

## 3.7 100 PERCENT DESIGN REQUIREMENTS

All documents shall be 100 percent complete, ready for start of construction.

### 3.7.1 Drawings

The drawings shall be complete, ready for start of construction, and include all necessary and required details, be thoroughly checked, and fully coordinated with the construction specifications and all other Construction Documents. The final drawings shall include all the requirements and drawings defined for the 60 percent submittal plus any additional detail drawings required for complete 100% design. Drawing scale shall match architectural drawing requirements. Plans shall be legible at full-size. Previous comments and applicable criteria changes shall have been incorporated into the design.

### 3.7.2 Submittal Register

Prepare a complete a Submittal Register using ENG Form 4288 "Submittal Register" as specified in Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES and paragraph CONSTRUCTION SPECIFICATIONS, subparagraph "Submittal Register," of this Section, listing submittals for all specification sections that require submittals. Submit four hard copies and on a CD-ROM disk the updated submittal register files and program for this design submittal and the final submittal.

### 3.7.3 Specifications

The construction specifications shall be complete, ready for start of construction, fully coordinated with the drawings and design analysis, and include all work. Specifications shall be in final form for construction and include all changes requested during the 60 percent review stage.

### 3.7.4 Design Analysis

The Design Analysis shall include the basic information presented in the previous submittal, corrected to reflect changes in content made in response to review comments. Outline specifications shall be omitted from the Final Design Analysis as the information is included on the final drawings and construction specifications. The design analysis shall be written in the present tense and will comply with Chapter IX, SWD AEIM.

### 3.7.5 Interior Design

Update the drawings, building related interior design (SID), Comprehensive Interior Design (CID), and the SID/CID Notebooks as required as a result of the 60 percent review.

### 3.7.6 Mechanical Design

All ductwork shall be double-lined. Piping 6 inches and larger shall be shown as double-lined.

## 3.8 DESIGN DETAILS

Drawings shall include the applicable plans, details, and requirements specified in the SWD-AEIM and those specified below.

### 3.8.1 Demolition

Show new work and demolition work on separate drawings. The type and the scope of removal work intended shall be clear from an inspection of the documents. Keyed notes for removal will be allowed.

#### a. Site Demolition Drawings (Removal Plan)

The removal plan shall show the existing physical features and condition of the site before construction. Include the field survey to show all above and below ground utilities; buildings, drives, roads and parking areas, walks, and vegetation, and building demolition floor plans; and such facilities as foundations and existing contours. Physical feature shall be as indicated and noted: to be removed, to remain, or to be relocated.

#### b. Building Demolition Drawings (Removal Plan(s))

The type and the scope of removal work intended shall be clear from an inspection of the documents. Show the existing physical features and condition of the site before construction. Show all walls, fixtures, and utilities to be removed. Physical features shall be indicated and noted: to be removed, to remain, or to be relocated.

### 3.8.2 Civil Design

The drawings shall be complete, fully describing the type and the scope of work required. Include all necessary and required details, thoroughly checked, and fully coordinated with the Construction Specifications and all other Construction Documents. Include the following as applicable:

- Cover Sheet and index of drawings
- Location and vicinity map including haul routes
- Site plan and details
- Grading and drainage plan
- Utility plan with profiles and details
- Pavement plan and details
- Soils boring logs
- Landscaping plans and details

#### a. Location Plan and Vicinity Map

A Vicinity Map consists of a small scale drawing of the project location, similar to a road map. A Location Plan consists of a small scale drawing showing the Government property or reservation limit with the construction project site shown. Show the Contracting Officer-approved Contractor access and haul routes, load limits on bridges along haul routes, and the designated waste and/or borrow areas. Upon request, a reproducible base sheet will be provided by the Fort Worth District for the Contractor's use in preparing the Location Plan.

#### b. Site Plan

Show all the site layout information necessary to field locate the building, walks, parking lots, and all other appurtenances to be constructed for the project. Identify all site related items such as curbs, pavements, walks, courtyards, bollards, trash enclosures, and retaining walls. Unless otherwise specified, site plans shall be at a scale of 1" = 20' or 1" = 30'. Existing or proposed contours shall not be shown on this Plan. The Site Plan, prior to adding the dimensions, shall serve as the base sheet to the other Plans, such as the Utilities Plan, Grading and Drainage Plans and the Landscape Plan. The Site Plan will show all existing physical features and utilities within and adjacent to the work site that will remain after the proposed construction has been completed. Include free zones, construction limits, storage areas, etc.

Show the building orientation and horizontal dimensional relationships to streets, walks, property lines, easements, fences, and other structures. Space between structures will provide open areas in accordance with good land-use planning and due consideration of future development plans. Maintain fire clearance separations for access for equipment acceptable to the installation (i.e. Fire Chief). Show geometric features of all roads, streets, sidewalks and parking areas. Provide details of all site features.

#### c. Grading and Drainage Plan

Provide a preliminary grading and drainage plan at a scale of 1" = 20' or 1" = 30' unless otherwise specified. Indicate new and existing grading contours at 1-foot contour intervals. Provide spot elevations in sufficient numbers so that interpolation between contours is not required. Some examples are: corners of paved areas and parking lots, low points, high points, flow lines of ditches and swales, changes in degree of slope and grading at building corners to insure positive drainage from the facility.

Indicate finished floor elevation of new building(s). Finished floor elevations shall be a minimum of 12 inches above the highest point of the outside finished grade and slope away from the building. Grade contours shall be at 1 foot intervals and spot elevations shall be provided at all site development features.

Show layout of the new and existing storm drainage systems, if applicable, including existing and new storm drainage flows, ditches, swales and piped systems.

Provide the appropriate top of structure elevations and pipe invert elevations of both the new and existing drainage system.

#### d. Erosion Control Plans

Erosion control plans shall show locations of all sediment basins, diversion ditches, areas to receive rock blanket, and other erosion control structures, indicating the approximate drainage areas each will serve. Indicate the materials, construction, and capacity of each structure.

#### e. Composite Utilities Plan With Profiles And Details

If required, provide a Composite Utilities Plan at a scale of 1" = 20' or 1" = 30'. Indicate locations of new and existing utilities. Plans shall show layout of the new and existing storm drainage, gas, sanitary sewer, fire protection, electrical, communication, water, steam, and any other utility systems which need to be provided for. Include new and existing contours. Show mains and distribution lines as well as all appurtenances such as meters, manholes, and valves.

#### f. Grading Sections

Grading sections showing finished and existing grades may be provided to supplement the required grading plan.

## g. Pavement Plan and Details

Provide pavement plans for all parking lots, roads, equipment pads and sidewalks. Include cross sections of all paving designs and include details of curbs, gutters, pads, sidewalks, stairs, inlets and other features.

## h. Soils Boring Logs

If applicable, provide logs of soil borings provided by the geotechnical engineer.

## 3.8.3 Landscaping

Provide a Landscape Plan showing trees, shrubs, ground covers, seeded and sodded areas. The Landscape Plan shall be prepared by a Licensed Landscape Architect. The landscape plan shall be in accordance with the Installation Design Guide. Select and specify types of plant materials that are locally grown, commercially available, and acclimated to the project environment. Include a plant materials schedule or listing which lists the botanical names, common names, key, size, and the method of transplanting for each landscape element. The landscape plan shall also show all unsurfaced ground areas disturbed by construction within the project limits with these areas shown to be seeded, sodded, or mulched as required. Include designs and details for required site furnishings and accessories.

The Contractor shall provide designs and details as necessary for required site furnishings and accessories.

## a. Sprinkler Irrigation Systems

Provide a sprinkler irrigation plan, designating the trees, shrubs, bushes, ground cover, and lawn area to be irrigated. Provide flow and pressure requirements. Include appropriate details.

## 3.8.4 Architectural Design

## a. Floor Plans

Provide double line floor plan(s) of the entire building(s), drawn at the largest scale practicable to include the entire building or floor level on a single sheet. The building footprint may be of a size that will require the floor plans to be divided into multiple areas. Floor plans shall be scaled double-line drawings showing the functional arrangement, structural column or bay indicators, material patterns, location of all openings and plumbing fixtures. Section cuts, wall types, notes and leaders, general notes, and dimensions shall be complete. The plans shall indicate room numbers and titles, door swings, door and window numbers and types. Provide door, window, louver, and other schedules as required. Show a north arrow on each floor plan. Include enlarged toilet room plans. If applicable, provide enlarged plans for any new stairs. The first floor plan sheet shall include a gross area tabulation comparing the actual square footage with the authorized square footage of the facility. Fully justify architect-engineer suggestions for plan improvement. Include:

- Overall, Control, Opening, and complete dimensioning
- Room Names and Numbers
- Wall and Building section cuts
- Door Swings and Numbers
- Window Types
- Square Footage
- General Notes

Where major structural elements are included as parts of architectural detailing, do not indicate sizes. Define these elements as part of the structural design documents. Major elements of mechanical and electrical equipment affecting space allocation shall be shown on the architectural plan to the extent practicable and coordinated with other respective disciplines. When applicable, Government-furnished and Contractor-installed, or Government-furnished and installed, items shall be shown as dashed lines.

## b. Reflected Ceiling Plans

Reflected ceiling plans shall include all notes, complete legends and pocheing patterns of materials to be used. Provide reflected Ceiling Plans for all spaces in the building(s). Reflected ceiling plans shall show the ceiling tile layout and location of gypsum wallboard and other ceiling types where applicable. Show all light fixtures, air diffusers, grilles, registers, exit lights, public address speakers, fire alarm strobe lights, sprinkler head layout, ceiling mounted equipment access panels or removable ceiling tile and grid elements, smoke and heat detectors, wall fire ratings, ceiling mounted equipment removal pathways, ceiling mounted television mounts, and other ceiling mounted items. The fixtures and other equipment shall be laid out in a regular pattern symmetrical with the ceiling tile grid, or symmetrical with the room centerlines, columns, windows, or other feature that dominates. All ceiling mounted items shown shall be fully coordinated with all other disciplines.

## c. Roof Plan

Roof plan shall be complete showing slopes, locations for roof and overflow drains, equipment, and walkways. Coordinate elements located on the roof with all disciplines.

## d. Building Elevations

Provide all building elevations complete showing the appearance and architectural treatment. Elevations shall be dimensioned to show story height, total height, and relation to grade. Indicate critical elevations such as top of finish floor and top of steel.

## e. Building Sections

Include building cross section and longitudinal sections to show general interior volumes, framing method, relationship to adjacent structures, and height of ceilings and partitions. Identify materials used and necessary dimensions.

## f. Wall Sections

Drawings shall include all wall section and stair section conditions including enclosed corridor(s) showing vertical control elevations and dimensions. Label all materials. Cut sections through doors, windows, and other critical wall section locations. Wall sections shall not be broken. Include additional details when necessary to illustrate abutting adjacent buildings and important or unusual features. All horizontal dimensions shall occur on the plans and vertical dimensions on the sections and elevations.

## g. Room Finish Schedules

Include signage.

## h. Door, Window, and Louver Schedules

Door schedule shall include door and frame types and references to door details and hardware sets. Window and louver schedules shall indicate window and louver types, sizes, and references to details.

## i. Fire Ratings

Clearly indicate wall ratings and fire hazards as required by the National Fire Protection Association Codes (NFPA). See Military Handbook MIL HDBK 1008C, particularly Section 2.1 Basic Criteria and Section 2.1.2 Partitions. In addition to the wall rating criteria required by the Codes, provide a minimum of one-hour rated wall assembly around all Janitors Closets, Store Rooms, Mechanical and Electrical Rooms or Closets. Wall fire ratings shall be graphically shown by a continuous symbol or pattern within the wall on the reflected ceiling plan and/or on a Fire Protection/Life Safety Plan. When other functions coexist with the fire protection functions, their integration shall be clearly indicated with an analysis that describes how both functions will be served. Provide a separate, composite type floor plan which makes an accurate presentation of these various features and functions. By authorized written permission, where the building and features being shown are unusually simple, this information may be included on other drawings. Rated wall details shall include the design number of the testing laboratory certifying the rating.

## j. Modular Design

Use modular design practices for the design of all masonry buildings or components of buildings. Dimensions shall be figured to whole or half-unit lengths (in increments of 4 inches) in order to reduce on-site cutting of masonry. Units less than 4 inches long shall be avoided.

## k. Room and Door Numbering

The Room and Door Numbering system shall be consistent for all buildings designed under any one contract. Room numbering shall start at the main entrance and proceed clockwise around functional areas.

## l. Facility Elevation

The elevation of the first floor shall be indicated as 100 feet and shall be a minimum of 1 foot above finish grade. Elevation for other floors, footings, etc., shall be related to this figure. Sea level elevations shall not be shown on the building drawings. Show elevations of the first floor above sea level on the grading plan.

## m. Access to Utilities

All utilities within the building, such as piping, ductwork, and electrical work, shall be concealed in finished areas unless otherwise specified in the Program and Performance Requirements. Provide plumbing chases in toilet areas. Carefully figure the clear space above ceilings and the size of chases to accommodate piping slopes and connections, ductwork crossovers, and fittings, HVAC piping and valve service spaces, and similar situations. Provide access to valves, cleanouts, etc. Space provided for utilities systems shall be adequate but not excessive.

## 3.8.5 Interior Design

Furnish Comprehensive Interior Design (CID) Package, including floor plans, finish and color schedules, interior design analysis, and sample/color boards, in accordance with SWD-AEIM, Chapter III, paragraph "Interior Design." SID refers to the building related exterior and interior finishes. CID includes the SID interior design package and the design, selection, arrangement, and color coordination of the furniture, furnishings, and art work. On the floor plan(s), show furnishings that are not considered part of the Contract, such as Government-furnished, Government-installed items, by the use of dashed lines and designated as "Not-In-Contract" (NIC). Use the design analysis to explain the desired image or visual appearance of the interior of the facility.

## 3.8.5.1 Submittal Requirements for SID/CID Notebooks (Color/Finish Sample Boards)

a. Furnish 4 sets of color/finish board(s) with attached samples of the proposed building-related finish materials mounted on 8-1/2 inch by 11 inch by 1/16 inch (215 mm by 280 mm by 1.5 mm) thick mat board in three-ring notebooks. Epoxy glue, hot-melt glue, or contact cement shall be used to attach samples; Scotch tape, double-backed tape, or rubber cement will not be acceptable. Heavy samples shall be mechanically fastened. Photographs or colored photocopies are acceptable only for illustrating furniture, furnishings, and art work; not for material and color samples.

b. The notebooks shall be labeled on the outside spine and front cover with the phase percentage, CID, project title and location, Contract number, date, and the Contractor's name and address.

## c. Sequence and Content of CID Submittal

The sequence and content of CID Submittals shall be as follows:

- (1) Title Page.
- (2) Table of Contents.
- (3) Narrative of Interior Design Objectives.
- (4) Exterior Elevation Drawing.
- (5) Exterior Building Material Legend.
- (6) Exterior Building Material Color Board(s).
- (7) Room Finish Schedules.
- (8) Interior Color Placement Plan.
- (9) Interior Color Boards (according to color placement plan).

Each sample shall indicate color, texture, and finish; and, if patterned, shall be large enough to define full pattern. Samples shall be identified as to type of material, area of installation, manufacturer, and transmittal number under which certification of the material represented will be

submitted in accordance with the requirements of Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES.

- (10) Interior Floor Plan(s) And Furniture Layout, including an index keyed to the furniture, furnishings, and art work illustration sheets..
- (11) Signage Location Plans(s).
- (12) Interior Signage Color Boards.
- (13) Furniture and Furnishings Illustration Sheets, for all rooms.
- (14) Art Work Placement Plan and Illustration sheets, including specifications, for all rooms.

### 3.8.6 Structural Design

Drawings shall include foundation plans and details, floor framing plans for each floor when applicable, floor slab plans, and roof framing plans.

- a. Show the location of all in-wall columns or pilasters.
- b. Foundation and slab plans shall show the size and location of all foundation elements, such as foundation walls, grade beams and footings. Elevations for footings shall be indicated on the plan. Plans for slabs-on-grade and exterior stoop slabs at building entrances shall show location and type of joints, slab thicknesses and reinforcing, elevation of slab surfaces, and any other design features, such as equipment bases, heavy Lab equipments, isolated foundations and the in-slab electrical raceway, which affect the slab design.
- c. The sizes, locations, and elevations of footings shall be shown.
- d. Coordinate slab plans with the Electrical sheets and indicate the locations of in-slab electrical raceway trench ducts or similar items.
- e. Show concrete slab-on-grade thicknesses and sections.
- f. Show proposed treatment of special foundations and other unique or complex features and details.
- g. Provide elevation views, sections, and details necessary to illustrate the design.
- h. Roof framing plans shall show sufficient details to clearly indicate the type of framing system used, size, and spacing of members and their elevations.
- i. Drawings shall include overall building plan dimensions, north arrows, and design notes.
- j. Grid Systems, Dimensions, and Floor Elevations

Each foundation and slab plan and roof framing plan shall have an alpha-numeric grid system aligned with any in-wall columns or pilasters, or with load bearing and non-load bearing walls, as applicable. The same grid system shall be used for all plan views. Each plan view shall have all necessary dimensions. On plan views, the dimensions shall define the location of grid lines, offsets, and all structural elements, as well as the overall sizes of the structure. The finish elevation of the floor slab shall be indicated as 100 feet, and elevations for foundations, walls and roof members shall be referenced to this basic elevation.

#### k. Plan Sheets

##### (1) Foundation and Slab Plans

Foundation and slab plans shall show the size and location of all foundation elements, such as foundation walls, grade beams and footings. Elevations for footings shall be indicated on the plan. Plans for slabs-on-grade and exterior stoop slabs at building entrances shall show location and type of joints, slab thicknesses and reinforcing, elevation of slab surfaces, and any other design features, such as equipment bases, heavy Lab equipments, isolated foundations and the in-slab electrical raceway, which affect the slab design.

##### (2) Roof Framing Plans

Roof framing plans shall be provided for all parts of the structure. Plans shall show the size, spacing, and location of all roof framing members, their supporting in-wall columns, pilasters or walls, all auxiliary members such as bracing and bridging, and the size and location of all major openings through the roof. Plans shall show support system for satellite dishes.

##### 1. Elevation Views, Sections and Details Sheets

Elevation views, sections, and details necessary to illustrate fully the design shall be provided. Some requirements peculiar to the various structural materials are described below.

##### (1) Concrete

Include elevation views as necessary, plus sections and details to show the outlines of concrete cross-sections, reinforcing bar arrangements, concrete cover for rebar, installation of embedded items, and joint construction. All lap splice and embedment lengths for reinforcing bars shall be clearly indicated on the drawings. A sill detail for each foundation condition at exterior and interior doors shall be provided.

##### (2) Masonry

Wall reinforcing shall be located and identified on plans, in section cuts, elevation views, or in schedules. When required, include structural elevations to clarify the construction requirements for masonry reinforcement, especially the reinforcement around wall openings. Listed below are some frequently required masonry details, most of which are shown in ICBO Bldg Code and SWD-AEIM. Details may be extracted from other sources and incorporated into the final drawings. Edit the details to reflect the specific requirements of this project.

##### (3) Structural Steel, Steel Joists, and Steel Decking

Structural steel connections shall be fully detailed and shown on the drawings. The anchorage of beams, trusses, joists, and steel deck to walls or other bearings, and the extra framing or

reinforcement required at deck openings shall also be detailed. Notes, details, or schedules on the drawings shall indicate the steel deck attachment method to be used, and shall give the size and spacing for perimeter, side lap, intermediate supports and end lap attachments. Welded connections shall be detailed using standard weld symbols illustrated in AWS D1.1. All applicable weld sizes, spacing, types, contours, and finishes shall be shown.

(4) Cold-Formed Steel Studs

Cold-formed steel connections shall be fully detailed and shown on the drawings. The anchorage of studs to top and bottom runners, of top and bottom runners to supporting members, and the extra framing at openings shall also be detailed. Notes, details, or schedules on the drawings shall indicate the steel stud and runner dimensions, spacing, and attachments.

m. Schedules

(1) Foundation Schedules

Foundation schedules for footings or grade beams shall be included as applicable. The schedule shall include all pertinent information required for the foundation system being used.

(2) Framing Schedules

For concrete framing, beam, and column schedules shall conform to the requirements of the ACI SP-66. For structural steel framing, provide a column schedule complete with design loads at splices, if any, and at column bases, plus a tabulation of the loads, shears, moments and/or axial loads to be resisted by the beams and their connections.

n. Equipment Loads

All equipment loads which exceed 176 pounds and are not supported by concrete slab-on-grade, shall be identified on the drawings by showing equipment locations, total weights, and reaction loads at support points.

o. Notes

(1) Design Notes

Under the heading "Designer's Notes," the structural drawings shall contain notes which begin:

"The structural design was prepared using the following data:".

The data then listed shall include the structural loading criteria used for design, such as roof and floor live loads, snow load design parameters, wind speed and wind load design parameters, seismic design parameters (Zone Z, I, R<sub>w</sub>, C, and S values), allowable soil bearing pressures (as recommended by the foundation analysis), foundation design depth, design wind uplift pressures for steel joists and other data pertinent to future alterations. Also, to be listed are the ASTM designations and stress grades of the applicable structural materials: steel, masonry, concrete for each usage, reinforcing bars, and bolts.

(2) General Notes

Other notes, which direct the work to be performed, the materials to be used, etc., shall be grouped under the heading of "General Notes." Include in these notes a description of the building's structural system, if necessary.

### 3.8.7 Mechanical Design

Provide plans, piping diagrams and isometrics, mechanical room sections, water and air flow diagrams, details, schedules, control diagrams, sequence of operations, etc. as necessary to define the required design intent. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. Large-scale plans of congested areas shall be provided. Coordinate with architectural design for provision of access panels for all concealed valves, traps and air vents, etc. Unless otherwise indicated, all floor plans shall be drawn at a minimum 1/8-inch = 1'-0" scale and shall show room names and numbers. Drawings shall include, but not limited to, the following:

a. Mechanical Abbreviation, Legend, and General Notes Sheet

This sheet shall include all mechanical abbreviations and symbols that will be used on the drawings. Include mechanical general installation notes that are required to clarify the construction intent that may not be readily apparent in the specifications or on the drawings. Symbols shall be grouped into sections; as a minimum, provide sections for Plumbing and HVAC. Control drawing symbols shall be shown on a separate drawing.

b. Plumbing Drawings

Plumbing Plans: Plumbing plans show show the design and layout of the domestic hot and cold water distribution systems; make-up water piping; soil, waste and vent piping; and storm water drainage system. Include routing of piping systems from the connections within the structure to a point 5 feet outside the structure. The grade of all drain lines shall be calculated and invert elevations established. All plans shall show plumbing fixtures. All electrical panels and equipment and pertinent HVAC equipment (e.g. chillers, expansion tanks, boilers, AHU's, pumps) shall be outlined in half-tone on the plumbing plans. Plans may be drawn at 1/8 inch = 1 foot scale as long as legibility is not compromised. Plumbing fixtures and drains shown on the drawings shall be designated by the same identification system used in the Construction Specification Plumbing Fixture Schedule. Soil, waste, vent and storm drainage piping shall be shown on separate sheets from cold and hot water distribution piping and make-up water piping. Provide a roof plan showing roof drains and sanitary vent penetrations. Include the following:

(1) Enlarged toilet room plans showing all fixtures, water, waste, and vent piping for each toilet area.

(2) Plumbing water and waste/vent riser diagrams for each toilet area. Provide plumbing water and waste/vent riser diagrams for each toilet area.

(3) Enlarged mechanical and boiler room plumbing plans, drawn at a minimum 1/4 inch = 1'-0" scale, showing layout of all plumbing equipment and piping within the rooms. To show spatial relationships, indicate the location of HVAC equipment, gas service, condenser water or chilled water entrances, fire protection entrance and risers, and electrical panels or equipment located in the

room.

(4) Plumbing details, including those for roof and overflow drains, and schedules.

c. Mechanical HVAC Drawings, Details, and Schedules

Show on mechanical HVAC drawings, all items of mechanical equipment, including boiler room equipment, chilled water equipment, condenser water equipment, air handling units, air distribution and exhaust systems, etc., to clearly illustrate all HVAC system designs, and to determine proper space allocation within the intent of the architectural layout requirements. Plans and sections shall be developed sufficiently to ensure that major equipment items, piping, and ductwork cause no interference with structural members, electrical equipment, etc. Provide Schedules for each item of mechanical equipment. Provide installation details showing specification requirements such as isolation and balancing valves, thermometers, pressure gauges, equipment pads, strainers, vents, hangers, and vibration isolation for each item of mechanical equipment. Include enlarged mechanical and boiler room floor plans showing the layout of all HVAC equipment, piping, and ducts located within the rooms and dedicated access space for items requiring maintenance; and drawn at a minimum 1/4 inch = 1'-0" scale. Provide mechanical and boiler room sections to show equipment and components, ductwork connections and routing, and relationship to adjacent structural features. Provide chilled and hot water system flow diagrams, showing chillers, cooling towers, piping, pumps, boilers, and all connected cooling and heating equipment. Show associated GPM flow rates. Provide airflow diagrams showing CFM quantities for outside air, return air, and supply air; supply-air side of each diagram shall be broken down into zones, with each zone supply, return, and relief/exhaust CFM quantities identified.

Mechanical HVAC Plans: Mechanical HVAC plans shall show the design and layout of the hot water piping distribution system and equipment, chilled water piping distribution system and equipment, condenser water piping distribution system and equipment, air supply and distribution systems, and ventilation and exhaust systems. Air supply and distribution systems shall show all ductwork, including supply and return mains, branch ducts, and terminal unit (single and dual duct VAV and CV boxes) takeoffs; ductwork to diffusers; diffusers, grilles, and registers; and fire and fire/smoke dampers.

d. HVAC Control Drawings

Provide a one-line control diagram showing DDC interface points, detailed sequence of operations, and DDC control points list for all mechanical equipment and systems in accordance with SWD-AEIM, Chapter V.

### 3.8.8 Electrical Design

Provide plans, electrical and UPS room sections, single-line diagrams, riser diagrams, details, and schedules as necessary to define the required design intent. Coordinate the electrical and communications design with the design for other disciplines. Floor plans shall use the architectural floor plans as a basis with the building outline half-toned. Unless otherwise indicated, all floor plans shall be drawn at a minimum 1/4-inch = 1'-0" scale and shall show room names and numbers. Include the following as applicable:

- a. Electrical Abbreviations and Legends
- b. Drawing Notes
- c. One-Line Diagram

Detail the complete electrical system with a simplified one-line diagram. The diagram shall show ratings of major equipment including short circuit ratings. Use standard symbols for electrical equipment including, but not limited to, switchgear, sectionalizing cabinets, transformers, generators, uninterruptible power systems (UPS), switchboards, panel boards, power distribution units (PDUs), motor control centers (MCCs), motor starters. Include switchgear fuses or circuit breaker ratings; transformer ratings (including K-ratings) and connection configuration; switchboard ratings (including metering); panelboard current and ampere interrupting current (AIC) ratings; PDU ratings (including isolation transformers and K-ratings), raceway and conduit sizes and material type; MCC ratings; motor starter ratings; and conductor and ground type, size, and insulation ratings.

- d. Riser Diagrams
- e. Power Plan

Detail the electrical wiring for outlets, including raised floor receptacles, other than lighting. Identify rooms by name and number. When applicable, include a power cable tray plan and communications tray plan, detailing the underfloor cable tray components, outlets, and routing.

- f. Lighting Plan

Detail the electrical wiring and switching for lighting. Identify rooms by name and number.

- g. Lighting Fixture Schedule
- h. Panelboard and PDU Schedules

Detail the circuits and circuit breakers or fuse locations in various panelboards, including panelboards in power distribution units (PDUs). Panelboard schedules shall include the designation, location, mounting (flush or surface), number of phases and wires, voltage, capacity and total connected and demand load. Indicate the trip rating, frame size, interrupting rating, and number of poles for each circuit breaker in the panelboards. List the circuit number, circuit description, and load for each branch circuit. Include estimated maximum demand for each panel and for entire building and other relative information.

- i. Emergency Systems

Detail the electrical requirements for emergency systems such as emergency generator, UPS, emergency lighting, and fire alarm system (coordinate with fire protection plans).

- j. Site Plan

Detail the connection of pad-mounted switchgear, pad-mounted sectionalizing cabinets, vaults, and underground electrical and communications ducts. Show utilities the underground electric lines and communications ducts will cross.

- k. Communications System

Detail the conduit and raceways required to support communications and audio/visual systems requirements, including, but not limited to intercoms, security, cable television, computer data, data transmission (local area network), and telephone.

l. Security System

Detail security camera and alarm requirements, and riser diagrams.

m. Lightning Protection System

Detail the lightning protection system including air terminal types and locations; cross and down conductor material, sizes and connections; ground rod material, sizes, and locations; ground counterpoise materials, sizes, and routing, and test well construction and locations. Show locations of all air terminals, roof conductors, down conductors, ground rods, and counterpoise.

n. Grounding System

Show locations for and detail grounding electrode; grounding conductor and bond materials, sizes, and locations; and isolation grounds.

o. Cathodic Protection System

Detail test point construction and locations, sacrificial anode systems, impressed current systems, etc.

p. Miscellaneous Details

Provide communications manhole details, electric vault details, special light fixture details, etc.

### 3.8.9 Fire Protection Design

Provide plans, diagrams, sections, and details as necessary to define the required design intent. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. Unless otherwise indicated, floor plans shall be drawn at a minimum 1/8 inch = 1'-0" scale and shall show room names and numbers. Drawings shall include, but not limited to, the following:

a. Fire Protection Plans

Show the following on the fire protection plans:

- fire service entry and size to a point 5 feet outside of building;
- back flow preventer and size;
- system riser and size;
- zone risers, fire department connection, alarm bell, detectors, zones, room by room occupancy hazards and ceiling types per zone in tabular format, general description of system, applicable NFPA codes listing, sprinkler type per ceiling and application;
- water demand data, including design density, hose allowance, and design area for each applicable occupancy hazard; and
- a note stating that system shall be hydraulically designed.

Plans shall not show sprinkler piping or heads, unless it is necessary for coordination or system definition in special applications.

b. Fire Protection Details

Include the following fire protection details:

- mechanical riser diagram, including all pipe sizes;
- electrical riser diagram;
- any necessary sections to show routing of piping or sprinkler head locations, fire service entrance detail, exterior wall and slab penetration details, hydraulic design data from flow test provided by Government, hydrant designations from flow test, and fire protection symbols list.

c. Site Plan

Include:

- underground fire service main routing and size, from point of connection at existing water main, to building entry point;
- and fire hydrant locations used in flow test.

Label fire hydrants to match flow test designations shown on drawings and described in design analysis.

d. Life Safety Plan

Show:

- location of fire separation walls, column, floor and roof protection,
- path of travel for emergency egress and panic exits,
- access to building for fire fighting,
- rated doors and windows,
- requirement for mechanical and electrical penetrations through fire separation walls and floors,
- placement of fire extinguishers, and
- occupancy types.

### 3.8.10 Environmental Design

Provide the following items:

Confirm hazardous materials in Building 350 as listed in Volume 4 Attachment.

Environmental Survey Sampling Plan

Design Analysis

The Contractor shall prepare a Chapter in the Design Analysis entitled: "Environmental Protection Compliance". This Chapter shall summarize how the project complies with all environmental laws and regulations. As a minimum, the Chapter shall include the following:

- a. The Permitting and/or Approving Authority(ies).
- b. Construction/Operating Permits, Notices, Reviews and/or Approvals required. If, when checking with the agencies, a permit, notice or approval is not required, include a copy of the telephone conversation memorandum or letter from the agency.
- c. Time required by the permitting agencies to process the application(s) and issue the permits.
- d. Fee schedule including filing/application fees, review fees, emissions fees, certification testing, etc.
- e. Monitoring and/or compliance testing requirements.
- f. Actual Environmental regulations governing the applications, exemptions, variances, etc. or at a minimum a brief summary of the regulation and title.

3.9 **ATTACHMENTS**

Attachments A, B, and C follow this page.

3.9.1 **ATTACHMENT A**

**CODE ANALYSIS**

UNIFORM BUILDING CODE (UBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

LIFE SAFETY AND FIRE PROTECTION IS AN INTEGRAL PART OF EVERY FACILITY DESIGN. RECOGNIZED CODES AND ACCEPTED SAFETY STANDARDS SHALL BE FOLLOWED IN THE DESIGN OF ALL FACILITIES. OF THE VARIOUS CODES AND SAFETY STANDARDS THE NATIONAL FIRE PROTECTION ASSOC. (NFPA) "LIFE SAFETY CODE" SHALL TAKE PRECEDENCE. ALL APPLICABLE REQUIREMENTS OF THE LIFE SAFETY CODE SHALL BE INCORPORATED INTO EACH DESIGN. FOR TYPE OF CONSTRUCTION, FIRE AREA LIMITATIONS, AND ALLOWABLE BUILDING HEIGHTS THE DESIGN SHALL FOLLOW THE UNIFORM BUILDING CODE (UBC).

**CHECK LIST**

PROJECT NAME \_\_\_\_\_ DATE \_\_\_\_\_  
LOCATION \_\_\_\_\_

3.9.1.1 UNIFORM BUILDING CODE ANALYSIS

a. OCCUPANCY CLASSIFICATION (See Table 5A):

Area:            Classification:  
(GROUP: \_\_\_\_\_): Div. \_\_\_\_\_  
(GROUP: \_\_\_\_\_): Div. \_\_\_\_\_  
(GROUP: \_\_\_\_\_): Div. \_\_\_\_\_

PRINCIPAL OCCUPANCY \_\_\_\_\_

OTHERS ( SPECIFY ) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. TYPE OF CONSTRUCTION :

\_\_\_\_\_

c. OCCUPANCY SEPERATION REQUIRED ( SEE TABLE 5-B):

\_\_\_\_\_ TO \_\_\_\_\_ = \_\_\_\_\_ HRS  
\_\_\_\_\_ TO \_\_\_\_\_ = \_\_\_\_\_ HRS  
\_\_\_\_\_ TO \_\_\_\_\_ = \_\_\_\_\_ HRS  
\_\_\_\_\_ TO \_\_\_\_\_ = \_\_\_\_\_ HRS

d. FIRE RESISTANCE OF EXTERIOR WALLS: ( SEE TABLE 5-A)

NORTH \_\_\_\_\_  
SOUTH \_\_\_\_\_  
EAST \_\_\_\_\_  
WEST \_\_\_\_\_  
OTHER \_\_\_\_\_

e. OPENINGS IN EXTERIOR WALLS: ( SEE TABLE 5-A)

NORTH \_\_\_\_\_  
SOUTH \_\_\_\_\_  
EAST \_\_\_\_\_  
WEST \_\_\_\_\_  
OTHER \_\_\_\_\_

f. MAX. ALLOWABLE FLOOR AREA ( SEE TABLE 5-C):

ALLOWABLE:  
IF SPRINKLERED: \_\_\_\_\_  
ALLOW. AREA INCREASES \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CALCULATED ACTUAL FLOOR AREA:

Floor                      Square Footage

Totals:

g. MAX. ALLOWABLE HEIGHT ( SEE TABLE 5-D):

METERS (FEET): \_\_\_\_\_



WITH SPRINKLERS: \_\_\_\_\_  
\_\_\_\_\_

g. EXIT DOORS:

MINIMUM WIDTH ALLOWED: \_\_\_\_\_  
MAXIMUM LEAF WIDTH ALLOWED: \_\_\_\_\_  
WIDTH REQUIRED FOR NO.OF OCCUPANTS: \_\_\_\_\_  
\_\_\_\_\_

h. EXIT CORRIDORS:

MAX. COMMON PATH OF TRAVEL: \_\_\_\_\_  
MINIMUM ALLOWABLE WIDTH: \_\_\_\_\_

REQUIRED TO HAVE EXIT AT EACH END OF CORRIDOR?

DEAD END CORRIDORS ALLOWED? \_\_\_\_\_  
MAXIMUM LENGTH: \_\_\_\_\_  
WALL FIRE RESISTANCE REQUIRED: \_\_\_\_\_

DOORS & FRAME FIRE RESISTANCE REQUIRED:

i. STAIRS:

MINIMUM WIDTH \_\_\_\_\_ FOR OCCUP. LOAD OF \_\_\_\_\_  
MAX. RISER ALLOWED: \_\_\_\_\_  
MINIMUM TREAD ALLOWED: \_\_\_\_\_

LANDINGS:

MIN. SIZE: \_\_\_\_\_  
MAX. VERTICAL DIST. BETWEEN LANDINGS: \_\_\_\_\_

REQUIRED HEIGHT OF RAILINGS:

HANDRAILS:

REQUIRED AT EACH SIDE? \_\_\_\_\_  
INTERMEDIATE RAIL REQUIRED? \_\_\_\_\_

HEIGHT ABOVE NOSING \_\_\_\_\_  
INTERMEDIATE RAIL REQUIRED? \_\_\_\_\_  
MAX. SPACE ALLOWED BETWEEN RAILS: \_\_\_\_\_

STAIR ENCLOSURE REQUIRED? \_\_\_\_\_

STAIR TO ROOF REQUIRED? \_\_\_\_\_

STAIR TO BASEMENT REQUIRED? \_\_\_\_\_

j. HATCHWAY ACCESS TO ROOF REQUIRED? \_\_\_\_\_

k. LADDER ACCESS TO ROOF REQUIRED? \_\_\_\_\_

l. HORIZONTAL EXIT REQUIREMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

m. PROTECTION OF OPENINGS NEAR EXTERIOR STAIR EXIT DOORS:

\_\_\_\_\_  
\_\_\_\_\_

n. SMOKEPROOF ENCLOSURE REQUIRED:

\_\_\_\_\_

o. RAMPS:

MAX. SLOPE TO USE AS EXIT \_\_\_\_\_  
HANDRAILS REQUIRED? \_\_\_\_\_

p. COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DESIGNER: \_\_\_\_\_

FOLLOWING IS A LIST OF ADDITIONAL "NFPA" CODES THAT ARE COMMONLY USED. INDICATE WHICH OF THESE CODES ARE USED AND ADD THOSE REQUIREMENTS TO THIS ANALYSIS.

- NFPA 10 FIRE EXTINGUISHERS, PORTABLE
- NFPA 75 COMPUTER/DATA PROCESSING FACILITIES
- NFPA 80 FIRE DOORS AND WINDOWS
- NFPA 88A PARKING STRUCTURES
- NFPA 409 AIRCRAFT HANGARS
- AFM 88-4 DATA PROCESSING FAC. DESIGN AND CONST.
- AF ETL 89-3 FIRE PROTECTION CRITERIA FOR ELECTRONIC

Typed Name and Signature of the  
Licensed Architect/Engineer of Record  
Professional Seal of the Licensed Architect/Engineer of Record



3.9.2 ATTACHMENT B

**ADA ARCHITECTURAL DESIGN CHECKLIST**

Project Name: \_\_\_\_\_  
Project Location: \_\_\_\_\_  
Design Phase: \_\_\_\_\_

ITEM  
INCORP N/A  
LATER  
NO.

1. Established with the Base/owner of the facility the requirements for handicap accessibility. \_\_\_\_\_
2. Received a waiver for no handicap accessibility requirements on the facility. \_\_\_\_\_
3. Facility is designed utilizing:
  - New Construction Criteria \_\_\_\_\_
  - Building Alteration Criteria \_\_\_\_\_
  - Historic Building Preservation Criteria: \_\_\_\_\_
4. Accessible Route (egress/corridors/halls/aisles).
  - Provided minimum fire egress routes. \_\_\_\_\_
  - Provided minimum site accessible routes. \_\_\_\_\_
  - Provided proper clearance widths. \_\_\_\_\_
  - Provided proper floor level changes. \_\_\_\_\_
  - Provided proper floor materials. \_\_\_\_\_
  - Provided protection from protruding objects. \_\_\_\_\_
5. Ramps:
  - Maximum slopes less than 1:12 \_\_\_\_\_
  - Maximum run less than 30 feet for 1:12 slopes \_\_\_\_\_
  - 40 feet for 1:16 slopes \_\_\_\_\_
  - Minimum clear width exceeds 36-inches. \_\_\_\_\_
  - Provided proper edge protection. \_\_\_\_\_
  - Provided handrails of proper configuration and diameter. \_\_\_\_\_
  - Provided proper handrail extensions at top and bottom of ramp. \_\_\_\_\_
  - Provided handrails at proper mounting heights. \_\_\_\_\_
  - Provided proper landings. \_\_\_\_\_
  - Provided proper cross slope on ramp surface. \_\_\_\_\_

ITEM  
 INCORP  
 N/A  
 LATER  
 NO.

- |    |   |       |       |       |
|----|---|-------|-------|-------|
| 6. | Stairs:   |       |       |       |
|    | - Protected the space below stairs from access by the blind.                    | _____ | _____ | _____ |
|    | - Provided handrails of proper configuration and diameter.                      | _____ | _____ | _____ |
|    | - Provided proper handrail extensions at top and bottom of stairs.              | _____ | _____ | _____ |
|    | - Provided handrails at proper mounting heights.                                | _____ | _____ | _____ |
|    | - Provided treads greater than 11-inches in width.                              | _____ | _____ | _____ |
|    | - Provided Proper nosings.  | _____ | _____ | _____ |
| 7. | Elevators:  |       |       |       |
|    | - Provided buttons and lanterns at the proper mounting height.                  | _____ | _____ | _____ |
|    | - Provided Braille characters.  | _____ | _____ | _____ |
|    | - Provided proper door widths.  | _____ | _____ | _____ |
|    | - Provided proper clearance inside elevator car.                                | _____ | _____ | _____ |
| 8. | Doors And Hardware:   |       |       |       |
|    | - Provided proper door widths.  | _____ | _____ | _____ |
|    | - Provided proper clearance on both sides of jambs.                             | _____ | _____ | _____ |
|    | - Entrance vestibules provided with adequate clearances.                        | _____ | _____ | _____ |
|    | - Provided levers on locksets and exit hardware.                                | _____ | _____ | _____ |
|    | - Provided closers with mechanical adjustments.                                 | _____ | _____ | _____ |
|    | - Provided accessible thresholds.   | _____ | _____ | _____ |
|    | - Provided protection plates on doors heavily used by wheel chair bound people. | _____ | _____ | _____ |

ITEM INCRP NO.	N/A	LATER			
9.			Toilet Facilities:		
			- Provided proper floor clearance through out the toilet rooms.	_____	_____
			- Provided minimum number of required accessible fixtures.	_____	_____
			- Provided accessible toilet stalls.	_____	_____
			- Provided stall doors with correct direction of swing.	_____	_____
			- Provided accessible water closets.	_____	_____
			- Provided grab bars at accessible water closets.	_____	_____
			- Provided grab bars with correct configuration and dimension.	_____	_____
			- Provided accessible sinks/lavatories.	_____	_____
			- Provided accessible urinals.	_____	_____
			- Provided accessible water coolers and fountains.	_____	_____
			- Provided accessible mirrors.	_____	_____
			- Provided accessible toilet accessories at required locations.	_____	_____
			- Provided all fixtures and accessories at proper mounting heights and clearances.	_____	_____
			- Provided insulated or protected exposed pipes at lavatories.	_____	_____
10.			Shower/Tub Facilities:		
			- Provided the minimum number of accessible showers/tubs.	_____	_____
			- Provided showers/tubs with grab bars.	_____	_____
			- Provided showers/tubs with seats as required.	_____	_____
			- Provided controls mounted at the proper height and location.	_____	_____
			- Provided proper clearances and dimensions in showers/tubs.	_____	_____
			- Provided proper floor clearance through out shower/tubs rooms.	_____	_____
			- Provided doors with correct direction of swing and clearance.	_____	_____

ITEM NO.		INCORP	N/A	LATER
11.	Storage:			
	- Provided accessible cabinets, shelves, closets, and drawers as required.	_____	_____	_____
	- Provided proper clearance, mounting heights, and reach provisions.	_____	_____	_____
12.	Telephones and Vending:			
	- Provided the minimum number of required accessible public telephones.	_____	_____	_____
	- Provided proper floor clearance around telephone.	_____	_____	_____
	- Phone and controls mounted at proper heights and within reach.	_____	_____	_____
	- Provided vending machines on an accessible route.	_____	_____	_____
	- Provided vending machines with accessible clearances and protruding object safe guards.	_____	_____	_____
13.	Fixed Or Built-in Seating And Tables:			
	- Provided the minimum number of accommodations for accessibility in areas which required fixed furniture.	_____	_____	_____
	- Provided proper floor clearance around furniture.	_____	_____	_____
	- Provide proper knee space at tables.	_____	_____	_____
	- Provided tables and counters with proper top surface heights.	_____	_____	_____
14.	Assembly Areas:			
	- Provided the minimum number of accessible seating spaces.	_____	_____	_____
	- Provided seating which is easily accessible to emergency egress.	_____	_____	_____
	- Provided companion seating.	_____	_____	_____
	- Integrated and dispersed accessible seating with the rest of the seating.	_____	_____	_____
	- Provided accessible dressing rooms.	_____	_____	_____
	- Provided level floor surface at accessible seat locations.	_____	_____	_____
	- Provided clear ground or floor space at accessible seat locations	_____	_____	_____
	- Provided access to all performing areas and associated spaces.	_____	_____	_____

ITEM NO.		INCORP	N/A	LATER
15.	Dining Halls And Cafeterias:			
	- Provided the minimum number of accessible dining spaces.	_____	_____	_____
	- Provided accessible counters and bars.	_____	_____	_____
	- Provided accessible aisles between tables or walls.	_____	_____	_____
	- Provided clear floor space at accessible dining locations.	_____	_____	_____
	- Provided accessible food service lines meeting minimum clearances and reaches.	_____	_____	_____
	- Provided accessible tableware and condiment areas.	_____	_____	_____
	- Provided raised speaker platform with protected edges.	_____	_____	_____
16.	Medical Care Facilities:			
	- At least 10% of the general patient rooms are accessible.	_____	_____	_____
	- Provided the number of accessible patient rooms as required for specialized treatment, long term care, or alterations of existing patient rooms.	_____	_____	_____
	- Provided at least one accessible entrance with weather protecting canopy or roof overhang.	_____	_____	_____
	- Provided minimum clearances within the patient rooms and around the beds.	_____	_____	_____
	- Provided accessible patient toilet/bath rooms.	_____	_____	_____
17.	Business And Mercantile:			
	- Provided at least one accessible sales counter, services counter, teller, information window, etc.	_____	_____	_____
	- Security bollards when provided, do not prevent access or egress to people in wheel chairs.	_____	_____	_____
18.	Libraries:			
	- Provided access to all reading and stack areas, reference rooms, reserve areas, and special facilities or collections.	_____	_____	_____
	- Provided at least 5% or a minimum of one of each element or fixed seating, tables, or study carrels as accessible	_____	_____	_____
	- Provided at least one lane of check out areas as accessible.	_____	_____	_____
	- Provided adequate clearance and reach distances at card catalogs and magazine displays.	_____	_____	_____
	- Provide stacks with minimum clear aisle width.	_____	_____	_____

ITEM NO.		INCORP	N/A	LATER
19.	Temporary Lodging:			
	- All common and public use areas are accessible.	_____	_____	_____
	- Provided accessible units, sleeping rooms, and suites.	_____	_____	_____
	- Provided sleeping accommodations for persons with hearing impairments.	_____	_____	_____
	- Provided a dispersed class and a range of room options.	_____	_____	_____
	- Provided accessible rooms in ADAL projects.	_____	_____	_____
	- Provided an accessible route to accessible sleeping rooms.	_____	_____	_____
	- Provided accessible clearance widths within sleeping rooms and around beds.	_____	_____	_____
	- Provided accessible doors within accessible sleeping rooms.	_____	_____	_____
	- Provided accessible fixed or built-in furniture and storage units.	_____	_____	_____
	- Provided accessible controls throughout accessible units.	_____	_____	_____
	- Where provided as part of an accessible unit each of the following were provided as accessible: living area, dining area, at least one sleeping area, patio/terrace, balcony, toilet/bath, and carport/garage/parking.	_____	_____	_____
	- Where provided as apart of an accessible unit, the kitchen, kitchenettes, wet bars, or similar amenities were also provided with accessible features.	_____	_____	_____
	- Provided visual alarms, notification devices, and accessible telephones.	_____	_____	_____
	- Provided accessible doors and doorways designed to allow passage into and within all sleeping units or other covered units.	_____	_____	_____

20. Transportation Facilities:

(This section covers Air, Rail, and Bus public transportation facilities. See Section 10 of the ADA Guide for specific requirements for these facilities)

3.9.3 ATTACHMENT C

MECHANICAL ROOM SIZE FORM

\*\*\*\*\*

NOTE: Mechanical Systems Design Documents and Guides -  
Mechanical Room Size Form

At the final design stage, the mechanical designer shall  
fill out this Mechanical Room Size Form and include it in  
the final design calculations.

\*\*\*\*\*

The information submitted on this sheet shall be placed in a data base for future use on similar DoD, COE project. (The data base shall be used to help determine appropriate mechanical room sizes). Include this sheet in the final design calculations.

Project:

Location:

Engineer:

Gross floor area of building:

Gross square footage includes (the entire building) stairs, corridors, etc.

Floor area of mechanical room:

Percent of gross building area is the mechanical room size:

Type of facility:

Sources of energy (E, G, S):

Mechanical equipment:

List of equipment outside the mechanical room and location:

Is the mechanical room too small?

Does the User think the mech room is too small? (Y, N, Don't know)

Additional remarks:

Abbreviations:

AC - air compressor  
AHU - air handling unit  
B - boiler  
CU - air cooled condensing unit  
DF - direct fired  
DX - direct expansion chilled water heat exchanger  
E - electric  
FC - fan coil unit  
FP - fire protection  
G - natural gas or propane  
HX - heat exchanger  
LC - liquid chiller  
MUA - make up air unit  
UH - unit heater  
ST - domestic hot water storage tank  
S - steam

-- End of Section --

## SECTION 01320

PROJECT SCHEDULE  
08/2001  
AMENDMENT NO. 0001

## PART 1 GENERAL

## 1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

## SD-01 Preconstruction Submittals

Preliminary Project Schedule; .

Initial Project Schedule; G.

Final Project Schedule; G.

Periodic Schedule Updates; G.

Three copies of the schedules, in hard copy and on data disk(s), showing codes, values, categories, numbers, items, etc., as required.

Qualifications Of Scheduler;

Documentation showing qualifications of personnel preparing schedule reports.

## SD-06 Test Reports

Narrative Report;

Schedule Reports;

One hard copy of Activity Report, known as Classic Schedule Report, sorted by Early Start, Total Float, along with data disk for Preliminary Schedule, Initial, Schedule, Final Schedule, and each update thereafter.

## 1.2 QUALIFICATIONS OF SCHEDULER

The Contractor shall designate a scheduler who shall be responsible for the preparation of the project schedule and periodic updates. The Scheduler shall have three years of experience in construction scheduling, estimating, cost management, and impact/change order analysis. The Scheduler shall have the responsibility of coordinating and updating the schedule and providing required updates in a timely manner. This Scheduler shall be a full time employee whose sole responsibility will be scheduling and who shall be on the site at all times during progress of the work. Qualifications of this individual shall be submitted with the Offeror's Phase I - Management/Technical Proposal.

## PART 2 PRODUCTS (NOT APPLICABLE)

## PART 3 EXECUTION

## 3.1 GENERAL

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

## 3.2 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. Three data disks and a printed, legible network diagram are required for each submission. Submissions shall contain the same level of detail as is being used by the contractor for project management.

## 3.2.1 Preliminary Project Schedule Submission

The Preliminary Project Schedule shall be submitted within 21 days of NTP and shall include a detailed 100% design schedule and a summary of the balance of the project. Budgeted costs for the detailed and summary schedule which equal the contract amount shall be included. The Government shall have 30 days for review. Upon review and acceptance of the Contracting Officer, this schedule shall be used for analysis and payment purposes until submittal of the Initial Schedule (see paragraph entitled "Initial Project Schedule Submission). Upon submittal and **(AM#1) acceptance**, the updated initial schedule shall be used for payment purposes. The schedule shall include significant activities with milestone dates including:

Contract Notice to Proceed  
Phases as specified in contract  
Preliminary, Initial, and Final Schedule Submittal dates  
Design Submittal Dates  
Government Review Periods  
Review Conference Dates  
Resubmittal of Final Design/Construction Documents  
Government Review of Final Design/Construction documents  
Construction Closeout Activities  
(e.g., operation and maintenance manuals, record drawings  
testing of equipment and systems, prefinal inspection procedures,  
and correction of deficiencies, and final cleanup)

Commissioning of HVAC Systems  
Substantial Completion

No payment will be made until this schedule is **(AM#1) accepted**.

3.2.2 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 120 calendar days after NTP and shall include detailed activities submitted with the preliminary schedule plus schedule details for **(AM#1) 100 percent of the demolition and environmental abatement activities**, with a summary of the remaining work. This schedule shall provide a logical sequence of activities which represent work activities throughout the entire project and shall be at a level of detail appropriate as defined in paragraph PROJECT SCHEDULE. The Government has 30 days for approval.

3.2.3 **(AM#1) Final Project Schedule Submission**

The third and Final Schedule Submission shall be submitted for review and approval when the 100 Percent Final Design Submittal documents are submitted. This submittal shall be updated to the date of submission, shall include all detail data previously submitted and shall include detail data up to and including project completion. Budgeted costs for the entire project shall be applied and shall equal the project amount. The Government shall have 30 days for review and approval. This schedule submittal shall supercede the Initial Schedule for payment purposes and shall be the final reference for payment and closeout of project. At the discretion of the Contracting Officer, payment may be withheld until approval of this schedule submittal.

3.2.4 Periodic Schedule Updates

Three data disks containing the project schedule shall be provided. Data on the disks shall be in the format specified. The automated scheduling software utilized by the Contractor shall be capable of direct data input into the scheduling system currently in use by the Government or shall be in Standard Data Exchange Format (SDEF) as stated below. Data on the disks shall adhere to the SDEF format specified in ER 1-1-11, Appendix A. The Government can provide a list of scheduling programs which support SDEF. (The Government uses Primavera for Windows, **(AM#1) Version 3.1**, subject to current update). The Contractor will be responsible for the accuracy of this data and successful data transfer to the Government. In the event of faulty disk(s), the Contractor will be responsible for replacement.

3.2.5 Standard Activity Coding Dictionary

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

3.3 SUBMISSIONS REQUIREMENTS

The following items shall be submitted by the Contractor with the Initial and Preliminary Project Schedule, and Final Project Schedule, submissions and every Periodic Project Schedule Update throughout the life of the project:

3.3.1 Data Disks

**(AM#1) Three** data disks containing the project schedule shall be provided. Data on the disks shall be in the format specified. The automated scheduling software utilized by the Contractor shall be capable of direct data input into the scheduling system currently in use by the Government or shall be in Standard Data Exchange Format (SDEF) as stated below. The Government can provide a list of scheduling programs which support SDEF. (The Government uses Primavera for Windows, **(AM#1) Version 3.1**, subject to current update). The Contractor will be responsible for the accuracy of this data and successful data transfer to the Government. In the event of faulty disk(s), the Contractor will be responsible for replacement.

3.3.1.1 Standard Data Exchange Format

If direct exchange of data is not possible, data shall be provided in format according to ER 1-1-11, Appendix A, Scheduling System Data Exchange Format (SDEF) dated 15 June 95. If SDEF is used, records must conform to the sequence, column position, length, value, and field definitions described in the regulation.

3.3.1.2 File Medium

Required data shall be submitted on CD-ROM disk or 3.5 high density diskette, formatted under Windows 95, 98, NT, or 2000, unless otherwise approved by the Contracting Officer.

3.3.1.3 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the scheduling program used, format of data transfer (Primavera or SDEF), file name, type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project location, data date, and name and telephone number of person responsible for the schedule, and the MS-DOS version used to format the disk.

3.3.1.4 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will insure that the names of the files submitted are unique and in sequence.

3.3.2 Network Diagram

The network diagram shall be required on the initial schedule submission and on monthly schedule update submissions. The Network Diagram shall depict and display the order and interdependence of activities and the sequence in which the activities are to be accomplished. Activity numbers, descriptions, durations, milestones and constraint dates must be shown, and the critical path easily apparent. The network diagram must be legible in its electronic form, or another means of production shall be required subject to Contracting Officer approval. Legibility shall be determined upon submission of the Preliminary Schedule.

3.3.3 Narrative Report

A Narrative Report shall be provided with the preliminary, initial, and each periodic update of the project schedule. The Narrative Report shall include: a description of activities along the 2 most

critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions to be taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.

#### 3.3.4 Approved Changes

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

#### 3.3.5 Schedule Reports

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

##### 3.3.5.1 Activity Report

A list of all activities known as the classic schedule report sorted by early start, then total float. For completed activities, the Actual Start Date shall be used as the secondary sort.

##### 3.3.5.2 Total Float Report

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

##### 3.3.5.3 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the Notice to Proceed until the most recent Monthly Progress Meeting.

#### 3.4 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule.

##### 3.4.1 Use of the Critical Path Method

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

##### 3.4.2 Level of Detail Required

The Project Schedule shall be at a level of detail appropriate for the size and complexity of the project. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use the following conditions to determine the appropriate level of detail to be used in the Project Schedule.

##### 3.4.3 Activity Durations

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

##### 3.4.4 Project Activities, General

Project activities shall consist of all construction activities, to include design-related activities, mobilization, demobilization, placement of warranty tags, O&M manuals, jobsite clean-up, and required testing and training. Tasks related to the procurement of long-lead materials or equipment shall be included as separate activities in the project schedule, to include procurement, fabrication, delivery, installation, start-up, testing, and training.

##### 3.4.5 Government Activities

Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to the review of Government-approved submittals, inspections, utility tie-ins, delivery of Government-furnished equipment (GFE) and issuance of notice to proceed (NTP) for phasing requirements.

##### 3.4.6 Resources

All appropriate activities shall be assigned resources (labor, materials, equipment) that are expected to be used during the execution of the activity.

##### 3.4.7 Costs

All work activities shall be cost-loaded with the amount budgeted. The sum of all activities in the schedule shall equal the total contract amount. The sum of activities related to a particular bid item shall equal the lump sum bid by the Contractor for that bid item.

##### 3.4.8 Responsibility

All activities shall be identified in the project schedule by the party responsible for performing the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task.

##### 3.4.9 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs.

##### 3.4.10 Modification Number

Any activity that is added or changed by contract modification, including modifications for claims, shall

be identified by a Government-furnished Modification number.

#### 3.4.11 Bid Item

All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. The bid item for each appropriate activity shall be identified by the Bid Item Code.

#### 3.4.12 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. The project phase of each activity shall be by a unique Phase of Work Code.

#### 3.4.13 Category of Work

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

#### 3.4.14 Data Dictionary

The Contractor shall submit a coding scheme that shall be used throughout the project for all activity codes contained in the schedule. The coding scheme submitted shall list the values for each activity code category and translate those values into project specific designations. For example, a Responsibility Code Value, "ELE", may be identified as "Electrical Subcontractor." Activity code values shall represent the same information throughout the duration of the contract.

#### 3.4.15 Not Used

#### 3.4.16 Project Start Date

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

#### 3.4.17 Constraint of Last Activity

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

#### 3.4.18 Interim Completion Dates

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

#### 3.4.19 Start Phase

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

#### 3.4.20 End Phase

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

#### 3.4.21 Lag Activities

Duration for Lag Activities shall not have negative value.

#### 3.4.22 Open Ends

Open Ended Activities other than the first aactivity, "NTP," and the last activity, " End Project", shall only be used with approval of the Contracting Officer.

#### 3.4.23 Ownership of Float

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor. Use of Zero Free Float and Zero Total Float constraints shall not be allowed.

### 3.5 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule, scheduling personnel, or approved periodic schedule updates will result in an inability of the Contracting Officer to evaluate Contractor's progress for the purposes of payment. In this event, progress payments will not be made until corrective action or additional information is provided which is determined sufficient in the judgement of the contracting Officer to analyze progress. The contractor's pay estimates will be based upon the amount of work completed, as agreed upon between Government and Contractor personnel during the Periodic Progress Meetings further specified below.

### 3.6 DEFAULT PROGRESS DATA DISALLOWED

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports.

### 3.7 OUT-OF-SEQUENCE PROGRESS

Activities that have posted progress without predecessors being completed (Out-of-Sequence Progress) shall be allowed only by the case-by-case approval of the Contracting Officer. If approval is not given, a revised schedule that reflects corrections to the original logic to show the current sequence of

activities shall be submitted prior to payment being made for those items of work.

### 3.8 PERIODIC PROGRESS MEETINGS

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

#### 3.8.1 Meeting Attendance

The Contractor's Project Manager, Construction Quality Control Manager or staff, and Scheduler shall attend the periodic progress meeting along with similar representation by the Government.

#### 3.8.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than seven (7) working days after the periodic progress meeting.

#### 3.8.3 Progress Meeting Contents

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

##### 3.8.3.1 Start and Finish Dates

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

##### 3.8.3.2 Duration

The estimated Remaining Duration for each activity in progress; calculations must be based on Remaining Duration in applicable work periods for each activity.

##### 3.8.3.3 Cost

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

##### 3.8.3.4 Logic Changes

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

##### 3.8.3.5 Other Changes

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

### 3.9 REQUESTS FOR TIME EXTENSIONS

Any request for a time extension from the Contractor, whether as a result of added or changed work due to a modification, a differing site condition, or unusually severe weather, shall be accompanied by justification, project schedule data and supporting evidence as the Contracting Officer may deem necessary for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

- a. A list of affected activities.
- b. A brief explanation of the causes of the change.
- c. An analysis of the overall impact of the change proposed.
- d. A sub-network of the affected area.

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

### 3.10 DIRECTED CHANGES

If Notice to Proceed (NTP) is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within seven (7) calendar days of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until the Contractor submits revisions, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, then the Contractor shall advise the Contracting Officer within seven (7) calendar days of receipt of the revisions. Regardless of the objections, the Contractor will continue to update their schedule with the Contracting Officer's revisions until a mutual agreement in the revisions may be made. If the Contractor fails to submit alternative revisions within seven (7) calendar days of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

-- End of Section --

## SECTION 01330

## CONSTRUCTION SUBMITTAL PROCEDURES

07/01

AMENDMENT NO. 0001

## PART 1 GENERAL

## 1.1 SUMMARY

## 1.1.1 Section Includes

This section includes administrative and procedural requirements for construction submittals presented by the Contractor. This section also includes requirements for developing, submitting and maintaining a "Submittals Register."

## 1.1.2 Section Excludes

This section does not include requirements for facility design submittals which are specified in Section 01015 DESIGN REQUIREMENTS AFTER AWARD.

## 1.2 SUBMITTAL IDENTIFICATION (SD)

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

## SD-01 Preconstruction Submittals

Documentation to record compliance with technical or administrative requirements required to be submitted prior to start of construction work, such as:

- Certificates of insurance.
- Surety bonds.
- List of proposed subcontractors.
- List of proposed products.
- Construction Progress Schedule.
- Submittal schedule.
- Schedule of values.
- Health and safety plan.
- Work plan.
- Quality control plan.
- Environmental protection plan.

## SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the contractor for integrating the product or system into the project.

Drawings prepared by or for the contractor to show how multiple systems and interdisciplinary work will be coordinated.

## SD-03 Product Data

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

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

## SD-04 Samples

Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

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

## SD-05 Design Data

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

## SD-06 Test Reports

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

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

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

Investigation reports

Daily checklists

Final acceptance test and operational test procedure

## SD-07 Certificates

Statements signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

#### SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

#### SD-09 Manufacturer's Field Reports

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

Factory test reports.

#### SD-10 Operation and Maintenance Data

Data intended to be incorporated in operations and maintenance manuals.

#### SD-11 Closeout Submittals

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

Record (e.g. As-built) drawings.

Special warranties.

Posted operating instructions.

Training plan.

### 1.3 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

#### 1.3.1 Government Approved

Government approval is required for any deviations from the Contract requirements and other items as designated in the RFP solicitation or by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

#### 1.3.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

### 1.4 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Government approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Design and Contractor Quality Control (CQC) requirements of this contract is responsible for design, dimensions, all design extensions such as the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

### 1.5 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer, obtain the Designer of Record's approval, and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

### 1.6 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required Designer of Record or required Government approvals have not been obtained.

### 1.7 GOVERNMENT REVIEW OF INFORMATION ONLY SUBMITTALS

Contracting Officer review of Information Only submittals shall be for conformance with the Contract requirements but not for approval. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the Contract requirements. This does not relieve the Contractor from the obligation to furnish material conforming to the Contract; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated into the Work; and does not relieve the Contractor of the requirements to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

### 1.8 GENERAL

The Contractor shall make submittals as required by the specifications (AM#1) \_\_\_\_\_. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System

Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. In addition, all submittals shall be checked and approved by the Designer of Record, and each submittal shall be stamped, signed, and dated by the Designer of Record certifying that the submittal complies with the Contract requirements. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

#### 1.9 SUBMITTAL REGISTER

The Contractor shall prepare and maintain a Submittal Register (ENG Form 4228) for the technical specifications. At the end of this section is one set of ENG Forms 4288 listing those items of for which submittals are required by the Contract's Division 1 and mandatory specification sections; this list is an illustration of how the submittal register (ENG Form 4228) shall look for the technical specifications. The submittal register shall be in electronic format and be compatible with the Corps of Engineers Resident Management System (RMS) software. The Corps of Engineers' Specsintact system, guides, and software will produce the desired electronic submittal register providing the guides used by the Contractor are either the Corps of Engineers' CEGS or the Navy's NAVFAC guide specifications. Construction submittals shall be inputted into the Specsintact submittal register program which can be found in the SUBREG directory on the project's Solicitation and Contract Award CD-ROM disk. See Section 01016 DESIGN DOCUMENT REQUIREMENTS, paragraph CONSTRUCTION SPECIFICATIONS, subparagraph "Submittal Register," for additional instructions. Questions concerning the program should be directed to the Fort Worth District Specifications Section, 817-978-2291, x1913.

See Sections 01015 DESIGN REQUIREMENTS AFTER AWARD and 01016 DESIGN DOCUMENT REQUIREMENTS for submittal requirements. The Contractor shall furnish 4 sets of ENG Forms 4288 and a diskette containing the computerized ENG form 4288 listing each item of equipment and material for which submittals are required by the specifications to the Contracting Officer with each design submittal and with the corrected final construction documents; columns "c" thru "o" shall be completed by the Contractor. The ENG Forms 4288 will become a part of the Contract after final approval. The Contractor shall keep these files up to date and shall submit them and a hard copy of the updated register to the Government together with the monthly payment request. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. This register and the progress schedules shall be coordinated.

(AM#1) \_\_\_\_\_.

#### 1.10 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 60 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. An additional 7 calendar days shall be allowed and shown on the register for review and approval of submittals for refrigeration and HVAC control systems.

#### 1.11 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract **AM#1** \_\_\_\_\_ drawings pertinent to the data submitted for each item. (AM#1) \_\_\_\_\_.

#### 1.12 SUBMITTAL PROCEDURES

Submittals shall be made as follows:

##### 1.12.1 Procedures

##### 1.12.1.1 Additional Instructions

In addition to the requirements of this Section, additional instructions are specified in the attachment "INSTRUCTIONS TO CONTRACTORS FOR TRANSMITTAL REQUIREMENTS" located at the end of this section.

##### 1.12.1.2 Contractor Review

The Contractor's quality control representative shall review the listing at least every 30 days and take appropriate action to maintain an effective and updated system. A copy of the register or progress schedule shall be maintained at the job site. Revised and/or updated register or progress schedule shall be submitted to the Contracting Officer at least every 60 days in quadruplicate (complete register need not be provided, only those portions containing additions or changes).

##### 1.12.1.3 Number of Copies

The Contractor shall provide four (4) sets of all submittals.

##### 1.12.1.4 Address to Receive Submittals

Submittals shall be sent to the Corps of Engineers' Resident Office assigned to the project.

##### 1.12.1.5 Additional Government Approved Submittals

In addition to those specified in PART 1 paragraph SUBMITTAL CLASSIFICATION, the following classifications of submittals also require Governmental approval:

##### a. Mechanical and Electrical Systems

The Contractor shall furnish one reproducible, unfolded copy of all wiring and control diagrams and approved system layout drawings with the operating instructions called for under the various headings of the specifications for mechanical and electrical systems.

b. Fire Protection and Detection Submittals

The Contractor shall prepare and submit, as one integrated submittal, shop drawings for the fire protection/detection system. This submittal shall also include sprinkler plans and sections, fire detection and alarm plans and risers, and catalog cuts of proposed equipment. The Contractor shall submit proof that the shop drawings were prepared by an engineer regularly engaged in fire protection/detection systems for at least 2 years, and that they are sealed by a registered professional engineer. Shop drawings for the fire protection/detection system shall be prepared on full-size reproducible sheets. The shop drawings submitted for review shall be submitted on full-size prints. After updating all deviations, modifications, and changes, the final submittal shall be on reproducible sheets and CADD tapes; these will represent the final as-built drawings.

c. Asbestos, lead-based paint, and other hazardous materials abatement submittals.

d. Color/finish sample boards submittals.

1.12.1.6 Certificates of Compliance

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in the number of copies required by the above paragraph "Number of 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.

1.12.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations. Deviations require both Designer of Record approval and Government approval.

1.13 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register (AM#1) \_\_\_\_\_."

1.14 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. One (1) copy of the submittal will be returned to the Contractor. The remainder will be retained by the Government.

1.15 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the Contract; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.16 (AM#1) DELETED

1.17 STAMPS

Stamps used by the Contractor's CQC and by the Designer of Record on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR	
(Firm Name)	
_____	Approved
_____	Approved with corrections as noted on submittal data and/or attached sheets(s).
SIGNATURE: _____	(CQC System Manager)
SIGNATURE: _____	(Designer of Record)
TITLE: _____	
DATE: _____	

## 1.18 INSTRUCTIONS TO CONTRACTORS FOR TRANSMITTAL REQUIREMENTS

## FORT WORTH DISTRICT

## FOR INFORMATION ONLY (FIO) AND GOVERNMENT APPROVED (G) SUBMITTALS

## 1. General Requirements

a. General requirements for transmittal of FIO and G submittals is contained in the preceding specifications. Specific requirements on how to transmit FIO and G Submittals are outlined herein.

b. FIO and G submittal data shall be transmitted under separate ENG Form 4025s and assigned different Transmittal Numbers. If G and FIO submittal data is included in the same submittal, using the same ENG Form 4025, they will be considered an FIO submittal until the Contractor corrects the error.

c. The Contractor shall designate on each Eng Form 4025, above the Transmittal No., either FIO or G to show the transmittal type. This procedure allows ready identification of FIO or G submittals. The Government reserves the right to redesignate the category (G or FIO) of submittals incorrectly identified by the Contractor.

d. The Contractor shall assure all FIO submittals for each technical section are submitted prior to or concurrent with the G submittals for that technical section. If appropriate FIO submittals have not been submitted, the G submittal will be returned disapproved.

e. Data transmitted with ENG Form 4025 shall be identified by marking it with the same item number(s) appearing in the "Item No." column on the form. The model number, part number, color, etc., of proposed materials or equipment shall be highlighted or otherwise identified.

## 2. Specific Requirements for For Information Only (FIO) Submittals

a. One fully coordinated FIO submittal shall be made for each technical section. Each FIO submittal listed on the ENG Form 4288, shall be submitted as a separate item on the ENG Form 4025 in the order they appear on the progress schedule. Technical data provided with the ENG Form 4025 shall conform to the "Submittals" paragraph in each Technical Section. (Example: SD-02 Shop Drawings as outlined herein.)

b. Items such as mill certificates or other test data unavailable until the equipment/material is manufactured/fabricated shall be identified on the initial ENG Form 4025. An explanation in the "Remarks" section shall explain this data will be submitted by Transmittal Number [ ] (fill in transmittal number) after materials are manufactured/fabricated (or other explanations as appropriate). A separate submittal for long lead time equipment or material may be made if sufficient data is furnished to show contract compliance. An explanation shall be provided in the "Remarks" section or on a separate sheet, if necessary, explaining why a partial submittal is being made. Explanation shall include the estimated delivery date of the above equipment/material and the Transmittal Number of the submittal that will contain data required by the particular specification section for the remaining equipment/materials. For contracts with several buildings/structures, separate transmittals for each technical section may be used if each building/structure is noted in the "Remarks" section of the ENG Form 4025. Samples of materials shall be submitted along with technical data, not under separate transmittals.

## 2.1 FIO Submittal Review

a. The Contractor's Quality Control (CQC) Representative has full responsibility for reviewing and certifying that all FIO submittal data and all equipment and/or materials comply with the contract. In addition, submittals shall be stamped, signed, and dated by the Designer of Record certifying that the submittal complies with the Contract requirements prior to submittal to the Government. FIO Submittals are provided to the Government "For Information Purposes Only." Contracting Officer approval is not required and will not be given. The Government will not code any FIO submittals. Copies of FIO Submittals will not be returned to the Contractor.

b. However, the Government may perform QA reviews and re-reviews of FIO submittals at any time during the contract. If the Government determines submittal data is incomplete or not in compliance with contract, comments will be provided. Comments will state, "Disagree with Contractor's Certified Compliance" and list items not in compliance or not provided as required by the contract. The Contractor shall respond to all comments by return FIO resubmittal on a new ENG Form 4025. Repeated incomplete or non-complying FIO submittals with improper certifications may result in disapproval of the Contractor's Quality Control (CQC) Program and/or possible replacement of the Contractor Quality

Control (CQC) personnel.

c. Performance of, or failure to perform QA submittal reviews or Government requirement to submit additional data on FIO submittals, will not prevent the Contracting Officer from requiring removal and replacement of non-conforming material incorporated into the work. No adjustment for time or money will be allowed for corrections required because of non-compliance with contract plans and/or specifications.

### 3. Specific Requirements for Government (G) Approved Submittals

a. The Contractor's Quality Control Representative is responsible for assuring all data submitted is complete and in compliance with contract requirements. In addition, submittals shall be checked and approved by the Designer of Record, and each submittal shall be stamped, signed and dated by the Designer of Record certifying that the submittal complies with the contract requirements prior to submittal to the Government. The Contractor shall assure all FIO submittals are submitted prior to or concurrent with the G submittal for each technical section. If the FIO submittals have not been submitted, the G submittal will be returned disapproved.

b. A separate submittal shall be made for each technical section with G submittals. FIO submittal data shall not be mixed with G submittal data.

c. The Government will provide written comments as appropriate and assign action codes to each item outlined on the back of the ENG Form 4025. One (1) stamped and dated copy of the submittal, along with any comments, will be provided to the Contractor. Action Code "A"- Approved As Submitted, and Code "B"- Approved Except As Noted, constitutes Government Approval. The Contractor shall resubmit under a separate Transmittal Number all data necessary to show compliance with Government comments on all other action codes.

d. Government review time, as stated in Paragraph 3.3 - Scheduling, is a minimum of sixty (60) calendar days unless otherwise specified. Government review time is exclusive of mailing time. Review time starts the day of receipt by the Government and continues until the day comments or notice of approval is provided the Contractor.

e. If the Contractor considers any Government review comment to constitute a change to the contract, notice shall be given promptly as required under the Contract Clause entitled "Changes." No request for "Equitable Adjustment" will be honored unless the Contractor complies fully with the prompt notice provisions of the contract.

### 4. Variations/Deviations/Departures from the Contract Requirements

Contractor proposed variations, deviations, or departures from the contract requirements shall be noted in the "Variation" column of ENG Form 4025 with an asterisk, for each FIO submittal. A brief explanation, and the Transmittal Number of the appropriate "G" submittal (as explained below), shall be added to the "Remarks" section of the Form (or a separate sheet, if necessary). Each variation, deviation, or departure shall be listed as an item on a separate "G" submittal, which may contain other G submittal items. Variations, deviations, or departures will be processed and approved the same as G submittals, provided they are included in a G submittal. Variations, deviations, or departures will not be approved in the FIO submittal, and will be disapproved, until they are properly submitted on a "G" submittal. Variations, deviations, or departures shall contain sufficient information to permit complete evaluation. Additional sheets may be used to fully explain why a variation, deviation, or departure is requested. The Government reserves the right to disapprove or rescind inadvertent approval of submittals containing unnoted variations, deviations, or departures.

### 5. Submittal Numbering

Each submittal shall cover only one specification section. For purposes of consistency and to provide compatibility with the Government's computerized submittal register, submittal numbers shall include a specification section prefix and special suffixes. Note the following examples (for Technical Section 07416):

a. New submittals - 07416-01, 07416-02, etc.

b. Resubmittals -

(1) First resubmittal - 07416-01.01, 07416-02.01, etc.

(2) Second resubmittal - 07416-01.02, 07416-02.02, etc.

(3) Third resubmittal - 07416-01.03, 07416-02.03, etc.

(Authority: Construction Division request, about 1990)

PART 2    PRODUCTSPART 3    EXECUTION  
-- End of Section --

## SECTION 01430

## DESIGN QUALITY CONTROL

12/2000

AMENDMENT NO. 0001

## PART 1 GENERAL

## 1.1 SUBMITTALS

Design Quality Control (DQC) Plan will be submitted for review and approval within 10 days of acknowledgement of Contract Notice to Proceed.

## 1.2 DESIGN QUALITY CONTROL (DQC) PLAN

The Contractor's A-E DQC Plan shall provide and maintain an effective quality control program which will assure that all services, designs, drawings, and specifications required by this contract are performed and provided in a manner that meets professional architectural and engineering quality standards. The Contractor's DQC Plan shall require the organization's personnel to perform, or cause to be performed, reviews of the scope and character necessary to achieve the quality of design and to substantiate that all services conform to the contract requirements. As a minimum, all documents shall be reviewed by competent reviewers and computer media (floppy disks, magnetic tapes, etc.) shall be scanned for all known viruses. Errors and deficiencies in the design documents shall be corrected prior to submitting them to the Government. The plan shall include the following:

- a. List and qualifications of internal (for each design discipline) reviewers
- b. Review Checklist for each design discipline
- c. Sample Quality Certification Statement that will be furnished by the chief designer for each design discipline.

## 1.3 DESIGN SCHEDULE

The Contractor shall include in the DCQ Plan a time-scaled bar chart or Critical Path Method (CPM) design schedule showing the sequence of events involved in carrying out the project tasks. This shall be at a detailed level of scheduling sufficient to identify all major tasks including those that control the flow of work. The bar chart or schedule shall include review and correction periods proper to the submittal of each item. This shall be a forward planning as well as a project monitoring tool. The bar chart or schedule shall reflect calendar days and not dates for each activity. When a modification to the contract occurs, the Contractor shall submit **(AM#1)** , on electronic media as well as hard copy, a revised bar chart or schedule reflecting the change within one week of the receipt of the change. See Section 01320 PROJECT SCHEDULE for additional requirements **(AM#1)** including those for electronic versions of the schedule.

## 1.4 QUALITY CONTROL MANAGER

The DQC Plan shall be implemented by an assigned person within the Contractor's A-E's organization who has the responsibility of being present during the times work is in progress, and shall be cognizant of and assure that all documents on the project have been coordinated. This individual shall be a person who has verifiable engineering or architectural design experience but not less than that required by the chief designers, is a registered professional engineer or architect, and has at least 5 years experience in managing architectural and engineering design teams for entire projects. An alternate for the Design QC Manager shall be identified in the plan to serve in the event of the Design Manager's absence. The requirements for the alternate shall be the same as for the designated Design QC Manager. The Contractor shall notify the Contracting Officer of the name of the individual and the name of an alternate person assigned to the position.

## 1.5 PLAN ACCEPTANCE

The Contracting Officer will notify the Contractor, in writing, of the acceptance of the DQC Plan. After acceptance, any changes proposed by the Contractor are subject to the acceptance of the Contracting Officer.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

## SECTION 13290

MOLD ABATEMENT  
07/01

## PART 1.0 GENERAL

## 1.1 INTRODUCTION

## 1.1.1 Microbial Remediation Project Overview

These microbial remediation technical specifications apply to microbial remediation in building 350, Fort Polk, LA.

The specifications include the (1) removal and disposal of microbially-contaminated materials, including, but not limited to, gypsum wallboard and HVAC systems, piping and all removable interior surfaces in building 350. Industrial Hygiene and Safety Technology, Inc. has developed these specifications to decontaminate microbially contaminated surfaces in the building and to protect the workers during remediation.

## 1.1.2 Variations from the Microbial Remediation Specifications

Due to the variability's that occur during microbial remediation work (such as hidden contamination discovered during removals, obstructions by existing fixed objects, occupant scheduling requirements) the Designated Industrial Hygienist shall, with the Contracting Officer's approval, allow the Contractor to perform the remediation work with minor variations from the specification. Such variations shall be allowed by the Designated Industrial Hygienist only if it is determined, based on professional judgment, that work performed under the variations shall meet the intent of the specifications.

## 1.1.3 Contractor Performing the Microbial Remediation Work

Microbial remediation work as defined in these microbial remediation technical specifications includes removal of microbial contaminated materials and cleanup and disinfection after removal work is complete. The contractor performing this work will perform removal, or demolition, of contaminated materials and all cleaning and disinfection work required.

## 1.2 DEFINITIONS

For these specifications, the following definitions shall apply:

- a. ACGIH - American Conference of Governmental Industrial Hygienists
- b. AFD - Air filtration device
- c. AHU - Air handling unit providing ventilation, heating, and air-conditioning (or ventilation only) for the occupied spaces.
- d. Ceiling Panels - Lay-in (in a metal suspension grid system) acoustical ceiling panels, also commonly called "ceiling tiles."
- e. Controlled Area - Area which has been demarcated and access has been restricted to prevent unauthorized entry.
- f. Contractor - The term "contractor", when used within a paragraph within the microbial remediation specifications, will mean the entity performing removal of contaminated materials and all subsequent cleaning and disinfection actions outlined.

g. (AM#1) Designated Industrial Hygienist - An Industrial Hygienist certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

h. HEPA Filter - A high efficiency particulate air (HEPA) filter capable of trapping and retaining 99.97 percent of all particulate larger than 0.3 microns.

i. HVAC - Heating, ventilating, and air-conditioning.

j. Level I Containment - Contained work area for the removal of visually contaminated materials. Isolation barriers and other construction details for Level I containment are presented in Section 3. Level I requires maximum isolation of work area from occupied areas outside the containment.

k. Level II Containment - Semi-contained work area for the removal or cleaning of materials that are not visually contaminated. Details on construction of Level II containment are presented in Section 3. Level II containment requires less isolation of the work area from occupied areas outside the containment than Level I containment.

l. MER - Mechanical equipment room that contains AHUs and associated equipment.

m. Microbially Contaminated Materials - Construction, finish, or other materials that contain fungal growth and/or elevated concentrations of fungal spores. The fungal growth is generally, but not always, visible to the naked eye.

n. Microbial Remediation (Work) - Microbial remediation and microbial remediation work includes all work defined within the microbial remediation technical specifications, including work performed by the Contractor.

o. Mil - Abbreviation for millimeters

p. Negative Air Machine - A portable air filtration device, equipped with a HEPA grade air filter, capable of filtering 1500 to 2000 cubic feet of air per minute (cfm).

q. NIOSH - The National Institute for Occupational Safety and Health

r. Occupied Spaces (Areas) - Spaces within the buildings of the Project Site used by occupants. The phrase "occupied space" within these specifications refers to this type of use and not necessarily the status of the space's occupancy/vacancy during remediation work.

s. Project Site - Building 350, Fort Polk LA.

t. Subcontractor - Person or entity who has a direct contract with the Contractor to provide materials, equipment, or supplies or to perform a portion of the removal and demolition services or other work included in these specifications that are the responsibility of the Contractor.

u. Work Area - The contained area where removal operations are performed and which is isolated to prevent the spread of fungal spores, dust, and debris and entry by unauthorized personnel.

### 1.3 SCOPE OF WORK

#### 1.3.1 General

The Contractor scope of work includes (but is not necessarily limited to):

Construction of Level I containments throughout the building to remove all sheetrock surfaces, HVAC systems, doors, frames, ceiling tiles and grids cabinets, shelves, plumbing fixtures, carpet, pipe insulation,

etc. The building will be brought to a shell for renovation purposes. The Contractor is responsible to verify quantities of materials to be removed.

The mold contaminated area will be disinfected with an approved biocide after construction of and containment.

Disposal of all removed material including carting all removed materials from the site and disposing of them in a landfill in accordance with all applicable regulations.

Cleaning of all surfaces and disinfection of selected surfaces within Level I containment after removal work is complete and cleared by the (AM#1) Designated Industrial Hygienist or designated representative(s). The scope of work does not include installing new plaster or gypsum wallboard or replacing any other demolished materials unless specifically stated elsewhere in these specifications. The Contracting Officer will provide plans of the project site building for the Contractor's reference.

### 1.3.2 Containment Types

Removal of contaminated materials, including all gypsum wall board, ceilings, HVAC systems doors, frames, cabinets, shelves, ceiling tiles, plumbing fixtures, etc., will be conducted within Level I containment by the Contractor unless otherwise directed by the (AM#1) Designated Industrial Hygienist or designated representative(s).

If hidden contamination is revealed in other areas, the removals shall be performed by the Contractor within Level I containment or within the following types of containment as directed by the (AM#1) Designated Industrial Hygienist(s).

Local Removal - To be constructed in isolated areas where fungal contamination covers a surface area of 4 square feet or less, if authorized by the (AM#1) Designated Industrial Hygienist (see paragraph 4.2.4).

### 1.3.3 Level I Containment Removals

Level I Containment Removal by the Contractor shall include the following, unless specified otherwise: The Contractor will remove all surfaces within the building in Level 1 containments. The building will be brought to a shell during the remediation process. All interior surfaces in the building that can be physically removed will be abated.

### 1.3.4 Level I Containment Cleanup and Disinfection

Level I Containment Cleanup and Disinfection by the Contractor after removal work shall include the following, unless specified otherwise:

- Removal of all visible dust and debris.
- Disinfection of all interior wall metal studs within work space.
- Disinfection of concrete slabs flooring within the work area.

### 1.3.5 Scheduling

Remediation work shall be coordinated and scheduled with the Contracting Officer to facilitate the work activities and provide a smooth transition of remediation efforts.

#### Typical Level I Work Area Schedule

A typical schedule of abatement and remediation work in Level I containment work areas shall be as follows:

Contractor shall consult with the Contracting Officer and the (AM#1) Designated Industrial Hygienist to establish the exact location of containment barriers and removals to be performed.

The Contracting Officer shall remove all items in the work area as required, prior to the contractor performing mold remediation efforts.

Containment construction shall include disinfecting and pre-cleaning of fixed surfaces .

(AM#1) Designated Industrial Hygienist shall conduct an initial inspection of the work area containment as specified.

Contractor shall remove contaminated materials within Level I containment, as specified, after the (AM#1) Designated Industrial Hygienist approves, based on the visual inspection of the containment work area.

Contractor shall clean the work area to be free of all dust and debris, as specified, after removal work is complete. First layer of polyethylene barrier in Level I containment is to be removed after cleaning is complete. (AM#1) Designated Industrial Hygienist or designated representative(s) shall conduct a post-demolition inspection and clearance air sampling as specified. Contractor shall re-clean the work area if it fails the (AM#1) Designated Industrial Hygienist's or their designated representative's post-demolition inspection.

The Contractor shall disinfect all concrete and flooring surfaces in the Level I containment area.

Contractor shall remove the final containment barriers, as specified, after the Designated Industrial Hygienist accepts the area, based on the post-demolition inspection and clearance air sampling of the containment work area.

Contractor shall re-clean the former work area, (AM#1) at no expense to the Government, if it fails the (AM#1) Designated Industrial Hygienist's clearance inspection. The (AM#1) Designated Industrial Hygienist or designated representative(s) shall then perform additional clearance inspections, and the Contractor shall re-clean (AM#1) at no expense to the Government if necessary until the work area is passed.

#### 1.4 APPLICABLE REGULATIONS

In performing activities under these specifications, the Contractor shall comply with the following guidelines, rules, and regulations:

Occupational Safety and Health Administration (OSHA) (AM#1) 29 Code of Federal Regulations CFR 1910 General Industry Standards, 29 CFR 1910.134 Respiratory Protection Standard and 29 CFR 1926 Construction Industry Standards.

(AM#1) EM 385-1-1 US Army Corps of Engineers Safety & Health Requirements Manual, Sept 1996

Applicable state administrative codes, rules, and statutes.

Any other applicable federal, state, and local laws, regulations, ordinances, guidelines, orders, or other requirements now in effect or effective during the course of the project.

#### 1.5 SUBMITTALS

##### 1.5.1 Review and Approval

All submittals are subject to review by the (AM#1) Designated Industrial Hygienist and acceptance by the Contracting Officer. Contracting Officer has the right of final approval in selecting the project superintendent, foreman, and, as applicable, all subcontractors.

(AM#1) Qualifications: G.

(AM#1) A written report providing evidence of qualifications for personnel, facilities, and equipment assigned to the work.

1.5.2 (AM#1) Submittals prior to preconstruction conference

The Contractor shall develop and submit a written comprehensive site-specific Accident Prevention Plan at least 30 days prior to the preconstruction conference. The Accident Prevention Plan shall address requirements of EM 385-1-1, Appendix A, covering onsite work to be performed by the Contractor and subcontractors. The Accident Prevention Plan shall incorporate a Mold Hazard Abatement Plan and Activity Hazard Analyses as separate appendices into one site specific Accident Prevention Plan document. Any portions of the Contractor's overall Safety and Health Program that are referenced in the Accident Prevention Plan, e.g., respirator program, hazard communication program, confined space entry program, etc., shall be included as appendices to the Accident Prevention Plan. The plan shall be prepared, signed (and sealed, including certification number if required), and dated by the Contractor's Designated IH, Competent Person, and Project Supervisor.

1.5.2.1 (AM#1) Mold Hazard Abatement Plan Appendix

The Mold Hazard Abatement Plan appendix to the Accident Prevention Plan shall include, but not be limited to, the following:

- a. The personal protective equipment to be used;
- b. The location and description of regulated areas including clean and dirty areas, access tunnels, and decontamination unit (clean room, shower room, equipment room, storage areas such as load-out unit);
- c. Level of supervision;
- e. Method of notification of other employers at the worksite;
- f. Abatement method to include containment and control procedures;
- g. Interface of trades involved in the construction;
- h. Sequencing of other related work;
- i. Storage and disposal procedures and plan;
- j. Type of disinfectant to be used;
- k. Location of local exhaust equipment;
- l. Air monitoring methods (personal, environmental and clearance);
- m. Bulk sampling and analytical methods (if required);
- n. A detailed description of the method to be employed in order to control the spread of mold spores;
- o. Fire and medical emergency response procedures;
- p. The security procedures to be used for all regulated areas.

### 1.5.2.2 (AM#1) Activity Hazard Analyses Appendix

Activity Hazard Analyses, for each major phase of work, shall be submitted and updated during the project. The Activity Hazard Analyses format shall be in accordance with EM 385-1-1 (Figure 1-1). The analysis shall define the activities to be performed for a major phase of work, identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the Activity Hazard Analyses has been accepted and a preparatory meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activities, including the onsite Government representatives. The Activity Hazard Analyses shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations.

### 1.5.2.3 (AM#1) Written Qualifications and Organization Report

The Contractor shall furnish a written qualifications and organization report providing evidence of qualifications of the Contractor, Contractor's Project Supervisor, Designated Competent Person, supervisors and workers; Designated IH (person assigned to project and firm name); independent testing laboratory (including name of firm, principal, and analysts who will perform analyses); all subcontractors to be used including disposal transportation and disposal facility firms, subcontractor supervisors, subcontractor workers; and any others assigned to perform mold remediation and support activities. The report shall include an organization chart showing the Contractor's staff organization for this project by name and title, chain of command and reporting relationship with all subcontractors. The report shall be signed by the Contractor, the Contractor's onsite project manager, Designated Competent Person, Designated IH, designated testing laboratory and the principals of all subcontractors to be used.

### 1.5.2.4 (AM#1) Specific Requirements

The Contractor shall designate in writing, personnel meeting the following qualifications:

- a. Designated Competent Person: The name, address, telephone number, and resume of the Contractor's Designated Competent Person shall be provided. Evidence that the full-time Designated Competent Person is qualified in accordance with 29 CFR 1926, Sections .32.
- b. Project and Other Supervisors: The Contractor shall provide the name, address, telephone number, and resume of the Project Supervisor and other supervisors who have responsibility to implement the Accident Prevention Plan, including the Mold Hazard Abatement Plan and Activity Hazard Analyses, the authority to direct work performed under this contract and verify compliance.
- c. Designated Industrial Hygienist: The Contractor shall provide the name, address, telephone number, resume, copy of ABIH certification, and other information specified below for the Industrial Hygienist (IH) selected to prepare the Contractor's Mold Hazard Abatement Plan, prepare and perform training, direct air monitoring and assist the Contractor's Competent Person in implementing and ensuring that safety and health requirements are complied with during the performance of all required work. The Designated IH qualifications are specified in Section 01015 DESIGN REQUIREMENTS AFTER AWARD. Furnish a copy of the Designated IH's current valid ABIH certification prior to start of work. The Designated IH shall visit the site at least one time per week for the duration of mold abatement activities and shall be available for emergencies. In addition, the Designated IH shall prepare, and the Contractor shall submit, the name, address, telephone numbers and resumes of additional IH's and industrial hygiene technicians (IHT) who will be assisting the

- Designated IH in performing onsite tasks. IHs and IHTs supporting the Designated IH shall have a minimum of 2 years of practical onsite asbestos abatement experience. The formal reporting relationship between the Designated IH and the support IHs and IHTs, the Designated Competent Person, and the Contractor shall be indicated.
- d. Mold Abatement Workers: Worker training documentation shall be provided to include respiratory protection training.  
First Aid and CPR Trained Persons: The names of at least 2 persons who are currently trained in first aid and CPR by the American Red Cross or other approved agency shall be designated and shall be onsite at all times during site operations in accordance with EM 385-1-1. A copy of each designated person's current valid First Aid and CPR certificate shall be provided.
- e. Independent Testing Laboratory: The Contractor shall provide the name, address and telephone number of the independent testing laboratory selected to perform the sample analyses and report the results. The testing laboratory shall be completely independent from the Contractor as recognized by federal, state or local regulations.

### 1.5.3 Submittals During Project

The Contractor shall submit to the Contracting Officer, for permanent files, weekly during the course of this work and, in any event, before the final payment, one copy of the following items. (AM#1) Coordinate the submittals with the submittal requirements in Section 01451 CONTRACTOR QUALITY CONTROL:

#### Daily Project and Visitor's Logs

The Contractor must ensure that all records are complete in accordance with applicable sections of these specifications.

#### Containment Air Exchanges

The Contractor shall submit to the Contracting Officer air exchange calculations for the containment areas as specified in Section 3.7.

#### Plans

The Contractor shall submit marked-up reduced plans (8 1/2 by 11 inches) of work areas indicating the "as-built" location of isolation barriers, decontamination units, AFDs, and removed materials.

#### (AM#1) Air monitoring data

The Contractor shall submit to the Contracting Officer air monitoring results to include final clearance as specified in paragraph 5.5.2 Air Sampling.

#### (AM#1) Waste Disposal Records

The Contractor shall submit to the Contracting Officer any waste disposal records as specified in paragraph 6.5 DISPOSAL.

#### Additional Information

Provide any additional pertinent information stated in the Contract or these specifications.

## 1.6 RECORDKEEPING

### 1.6.1 General

A Daily Project Log and a Visitor's Log shall form a permanent record of the project. The Contractor shall secure and maintain these logs and any other required documentation as part of the permanent project file. The Daily Project Log and the Visitor's Log shall be made available for inspection upon request by the Contracting Officer, the (AM#1) Designated Industrial Hygienist, or their representatives.

A three-ring binder shall be used daily to secure copies of routine inspection reports, disposal forms, and any other routine documents relating to project activities. The Contract shall provide copies of the Daily Project Log, Visitor's Log, landfill disposal receipts, required permits, and other project documentation to the Contracting Officer at the end of each week.

### 1.6.2 Daily Log

The Contractor shall maintain a Daily Project Log consisting of a three-ring binder. The daily project log will be used each day of the project to record the following information:

Date

Name of project superintendent and actual time physically on the job

Two employee sign-in sheets including name, social security number, and the actual time physically on the job; one for all workers on-site, including supervisory personnel, and one for workers who enter containment areas, including supervisory personnel

Brief description of daily work activities

Listing of any and all infractions noted by the Contracting Officer, the (AM#1) Designated Industrial Hygienist, or their designated representatives, emergencies, stop work orders (with detailed explanation), and descriptions of any other significant events. Air change calculations and manometer charts as detailed in paragraph 3.6 NEGATIVE PRESSURE SYSTEM.

### 1.6.3 Visitor's Log

The Contractor shall maintain a bound Visitor's Log, which shall be signed and dated by all site visitors, including the Contracting Officer's representatives, with the exception of the (AM#1) Designated Industrial Hygienist or designated representative(s). The Visitor's Log shall indicate all visitors who, for any reason, enter the work area.

## 2.0 PERSONNEL PROTECTION

### 2.1 WORKER INSTRUCTION AND CERTIFICATIONS

#### 2.1.1 Workers Instruction

Before the project begins, the Contractor shall instruct workers on using appropriate procedures for personal protection and when performing remedial techniques including:

- Use and fit of respirators
- Protective Clothing
- Entry and exit from work areas
- Aspects of work procedures
- Protective measures
- Safety and emergency egress procedures

#### 2.1.2 Certifications

Contractor shall ensure that all workers, including supervisory personnel, have the following certifications:

Current (within 1 year) physician's approval including ability to wear respirator  
Respirator fit test certification (within the last 12 months)  
Worker's release forms stating the potential hazards involved with the scope of work

### 2.1.3 Special Worker Risks

The Potential health risk for Contractor's supervisors and workers during microbial remediation is exposure to or contact with massive concentrations of fungi. Risks include allergic respiratory disease (for example, asthma and hypersensitivity pneumonitis) and infection for individuals who have pre-existing chronic disease (for example, those with compromised immune systems).

The Contractor shall be responsible for complete medical examination of all supervisors and workers involved in microbial remediation at the Project Site. The Contractor must warn workers and supervisors involved in microbial remediation (in writing) of the special risks associated with fungal aerosols to workers with immunodeficiency disease, cancer, disorders of immune regulation, or allergic or hypersensitivity disease including atopic conditions.

## 2.2 NOTIFICATION OF OTHER CONTRACTORS

Before work begins, the Contractor shall inform other Contractor's who are working on the project site regarding the nature of the Contractor's work and the existence of requirements pertaining to enclosed work areas.

## 2.3 RESPIRATORY PROTECTION

The Contractor shall provide workers with personally issued and marked respiratory protection equipment approved by National Institute for Occupational Safety and Health (NIOSH) and Mine Safety and Health Administration (MSHA). As a minimum, respiratory protection in Level I containments shall consist of full-face powered air purifying respirators (PAPRs) with P100 filter cartridges.

The Contractor shall provide sufficient filter cartridges for replacement as necessary or as required by applicable regulations. Filters shall not be used any longer than 1 workday. New respirator filters shall be stored at the job site in a clean storage cabinet.

The Contractor shall ensure that workers do not remove respirators to eat, drink, smoke, chew gum or tobacco, or apply cosmetics in the enclosed work areas.

## 2.4 PROTECTIVE CLOTHING

The Contractor shall provide workers with sufficient sets of protective disposable clothing, consisting of full-body coveralls, headcovers, gloves, and 18-inch high boot-type covers in sizes to properly fit individual workers. Integral boot/head cover/coveralls are acceptable. All persons entering enclosed Level I work areas shall don two sets of disposable clothing over street clothes or undergarments before entering the enclosed work area. In the event that a wet decontamination unit is installed, only one set of disposable clothing is required.

Provide workers with chemical-resistant gloves where disinfectants such as bleach are used.

Protective clothing shall be secured (for example, taped) to ensure that skin is not exposed. Skin protection is essential to prevent contact with mycotoxins that may be present on microbially-contaminated materials.

The Contractor shall provide eye protection (for example, full-face respirator or goggles) and hard hats, as required by job conditions or by applicable safety regulations. Reusable equipment (for example,

footwear, hard hats) shall be left in the contaminated enclosed work area until the end of the remedial work. At that time such items shall be decontaminated for reuse.

The Contractor shall provide authorized visitors with respiratory protection equipment, a set of suitable protective disposable clothing, headgear, gloves, and footwear, sized for proper fit, whenever they are required to enter the enclosed work area. The Contractor shall not, under any circumstances, permit any person to enter the work areas without the appropriate protective clothing and equipment.

The Contractor shall provide protective clothing for use by the Contracting Officer, (AM#1) Contracting Officer Representative, Designated Industrial Hygienist, and their designated representative(s). The Contractor shall furnish as many sets of the clothing necessary for full-time monitoring including that required for after hours access to work areas.

## 2.5 DECONTAMINATION AND WORK PROCEDURES

### 2.5.1 General

The Contractor shall provide and post in the Contractor's field office and on the containment floor the remedial action and decontamination procedures to be followed by the workers.

### 2.5.2 Containment Entry Procedures

The Contractor shall ensure that each worker and authorized visitor follows these entry procedures into Level I containment work areas:

Don respiratory protection (full-face respirator) and two layers of protective clothing (disposable coveralls, headcovers, gloves, and footwear) over street clothes or undergarments before entering the clean room. The Contractor shall provide protective clothing and respirators to authorized visitors. Protective clothing and respirators must be accessible to the Contracting Officer, Designated Industrial Hygienist, and their designated representative(s) for inspection of work areas after normal work hours. Pass through the triple flap doorway and enter the enclosed work area.

### 2.5.3 Containment Exit Procedures

The Contractor shall ensure that each worker and authorized visitor follows these exit procedures from Level I work areas:

Before leaving the enclosed work area, HEPA vacuum all gross contamination and debris from the outer layer of protective clothing.

Pass through triple flap openings into the clean room.

Remove outer layer of protective clothing (disposable coveralls, headcovers, gloves, and footwear) in the clean room and deposit the clothing in an impermeable bag or container. Do not remove the respirator.

HEPA vacuum (separate vacuum from that used inside the work area) inner layer of protective clothing and respirator in the clean room. Remove and deposit the clothing in an impermeable bag or container.

Do not remove respirators in the clean room.

Exit the clean room and remove respirator.

### 2.5.4 Work Area Thermal Environmental Conditions

Contractor shall monitor work areas to ensure that workers and visitors are not subject to thermal environmental conditions that may cause heat stress or heat exhaustion. Refer to paragraph 3.4 FIRE PROTECTION for specific information concerning monitoring thermal environmental conditions.

## 2.6 SECURITY

At all times throughout any remedial action, the Contractor shall provide adequate security measures to prevent any unauthorized entry into the enclosed work areas. The work areas shall never, at any time, be left unattended unless access can be positively blocked (for example, locked doors).

## 2.7 SAFETY COMPLIANCE

The Contractor shall comply with all local fire safety rules regarding egress from buildings. The Contractor shall identify and mark fire and emergency exits from the enclosed work areas. At least one emergency exit from the enclosed work areas shall be provided, independent of the exit from the decontamination facility.

The Contractor shall have bi-weekly safety meetings for all on-site workers.

## 2.8 WARNING SIGNS

The Contractor shall post warning signs at all entrances or openings to the enclosed work areas. Warning signs may be in the form of continuous plastic tape. The warning signs shall have black characters on a yellow background as follows:

WARNING - DO NOT ENTER  
Remediation Work in Progress

Alternate wording for the warning signs shall require approval of the Designated Industrial Hygienist.

## 2.9 AUTHORIZED VISITORS

Visitors who enter the containment areas must have full authorization from the Contracting Officer, (AM#1) the Designated Industrial Hygienist, or their designated representatives. Additionally, all visitors must have the following certifications:

Physician's approval including ability to wear respirator and physician's approval to enter work area where microbial aerosols are being generated

Respirator fit test certification

Release form to Contracting Officer stating knowledge by the visitor of the potential hazards involved with entering the containment areas

The Contractor shall instruct all visitors in safety, entry and exit procedures, and proper use of protective clothing respiratory protection before the visitors enter the containment. Refer to applicable sections of these specifications.

## 3.0 WORK AREA PREPARATION FOR MICROBIAL REMEDIATION

### 3.1 GENERAL

These procedures apply to work area preparation for remediation areas within the Project Site.

The Contractor shall delineate and provide sketches of individual enclosed work areas (phases) before construction. The (AM#1) Designated Industrial Hygienist and Contracting Officer shall approve the sketches or phasing of individual work areas before work begins.

Before the project begins, the Contractor shall inspect, for previous damage, all items located in microbial remediation areas and submit to the (AM#1) Contracting Officer a written list, including photographs, noting all such damaged items.

### 3.2 TEMPORARY POWER AND LIGHTING

The Contractor shall contract with a licensed electrical subcontractor to disconnect all electrical power in the containment work areas prior to start of the work in those areas. All circuit wiring shall be physically disconnected and tagged (lockout/tagout) at the panel board to totally isolate wiring, conduit, receptacles, lighting, equipment, etc. from the building's electrical service.

The electrical subcontractor shall provide temporary electrical power and lighting in the containment areas. The temporary electrical service shall be taken from the building's electrical service and extended to the containment areas.

Temporary electrical service for power and lighting shall be installed and maintained in accordance with the National Electrical Code, EM 385-1-1 Corps of Engineers Safety & Health Requirements Manual, OSHA regulations, state, and local codes. Provide ground fault protection for temporary electrical service in accordance with local codes and EM 385-1-1.

The electrical subcontractor shall provide circuits and receptacles for vacuums, power tools, manometers, and AFDs required by the Contractor.

Temporary power shall be provided within containment areas for (AM#1) Designated Industrial Hygienist or their designate representative's test equipment. Location and quantity of temporary power receptacles (110 volt) shall be coordinated with the (AM#1) Designated Industrial Hygienist or their designated representative(s).

Temporary lighting shall consist of stand alone fixtures or suspended "string" lights connected to ground fault protected temporary electrical service in sufficient quantities to properly illuminate the containment areas. All temporary lighting shall be shut down and made safe after working hours unless otherwise directed by the (AM#1) Designated Industrial Hygienist or designated representative(s) to permit after hours compliance inspections.

The (AM#1) Government shall provide electrical service to the existing panel boards. (AM#1) \_\_\_\_\_.

The Contractor shall install temporary electrical heating units if necessary to maintain appropriate work environment dry bulb temperature and to prevent freeze-up of domestic and sprinkler water piping (at least 55 F at all times) in the containment areas during remediation work. The Contractor's electrical subcontractor shall provide temporary electrical service for the heating units.

### 3.3 THERMAL ENVIRONMENTAL REQUIREMENTS IN WORK AREAS

Thermal environmental levels in the work areas shall comply with the most recent guidelines for heat stress provided by the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values (TLVs) for physical agents in the work environment. The Contractor shall continuously monitor thermal environmental levels in the work areas, for example, with an area heat stress-monitoring device, to verify that the guidelines are not exceeded.

### 3.4 FIRE PROTECTION

The existing fire sprinkler system shall remain active during the course of the work. Contractor shall not dislodge, damage, or cover sprinkler heads.

Damp wipe sprinkler heads during cleanup, do not vacuum.

The Contractor shall provide portable fire extinguishers within the containment areas and outside the decontamination units. Fire extinguishers shall be rated for the class of fire hazards in the work areas and shall be sized for coverage of the areas within the containment.

### 3.5 CONTAINMENT BARRIERS

#### 3.5.1 Level I Containment Barriers

The Contractor shall completely isolate Level I work areas for the duration of the work by sealing off all walls, floors, openings, and fixtures in the work areas including, but not limited to, heating and ventilation supply air ducts and diffusers, return air ducts, return air grilles, common return air plenums, elevator shaft openings, doorways, corridors, windows, skylights, and lighting with polyethylene sheeting held securely in place as described in this section.

The isolation barriers for Level I containment shall consist of the following polyethylene sheeting:

Floors - 2 layers of 6-mil polyethylene sheeting.

Walls and ceiling - 2 layers of 6-mil polyethylene sheeting. The isolation barrier must extend from the floor to the ceiling deck level.

Openings and freestanding critical barriers - 2 layers of 6-mil polyethylene sheeting held in place by temporary supporting structures, as required, and as specified in this section

#### 3.5.2 Construction of Barriers

Critical isolation barriers forming the perimeter of the Level I containment shall extend from floor slab to floor slab. Barriers may run horizontal to a vertical wall surface rather than vertically to the floor slab above to avoid ventilation system components. All gaps between critical barriers and the existing structure and all penetrations of ductwork, piping, and conduit through critical barriers shall be sealed.

Polyethylene sheeting shall be secured to existing structures using duct tape (2-inch minimum width), spray adhesive, staples, or any combination to insure the integrity of the barrier for the duration of the work. Additional supports in the form of plywood panels (to be used in occupied areas), 2- by 4-inch wood studs, or polyvinyl chloride (PVC) piping shall be used as necessary.

The Contractor must be careful not to disturb gypsum walls or ceilings of exterior or interior microbially contaminated walls while isolating work areas to prevent the release of fungal spores.

Workers shall wear respirators when installing isolation barriers if microbially-contaminated surfaces (microbially-contaminated perimeter walls or any surface with visible settled dusts) are likely to be disturbed.

### 3.6 NEGATIVE PRESSURE SYSTEM

#### 3.6.1 General

The Contractor shall establish a negative air pressure differential inside the enclosed Level I work area relative to interior areas outside the containment before remedial operations begin. No air must flow from inside the enclosed work areas to the areas outside. Unless otherwise indicated in these specifications, the term "outside the work area" shall mean areas within the building that are not in the enclosed work areas. The Contractor shall ensure that air pressure differential is maintained until the (AM#1) Designated Industrial Hygienist or designated representative(s) has determined that the work area has passed the post-demolition inspection (see paragraph 5.5 DESIGNATED INDUSTRIAL HYGIENIST'S POST-DEMOLITION INSPECTIONS).

All air handling units (AHUs) that supply air to zones within the Level I containment areas shall be disconnected or shut down or isolated during remediation work, unless specified otherwise (see paragraph 3.3 THERMAL ENVIRONMENTAL REQUIREMENTS IN WORK AREAS).

#### 3.6.2 Air Filtration Devices

The Contractor shall install and use AFDs with HEPA filters as part of the exhaust ventilation system to develop and maintain the specified desired air pressure differential inside the enclosed Level I and Level II work areas relative to the outside areas. The Contractor shall be responsible for acquiring and paying for any licenses needed for use of any equipment, including but not limited to, air pressure differential systems and air filtration systems.

HEPA filters and pre-filters for AFDs shall be replaced as required during demolition and at the completion of work in a containment work area. Filters shall not be reused. Used filters shall be double-bagged in 6-mil polyethylene bags within the containment and disposed as contaminated waste as specified in (AM#1) paragraph 6 DISPOSAL OF MATERIAL.

All exhaust and intake openings in AFDs shall be sealed with one layer of 6-mil polyethylene when not in use.

#### 3.6.3 Negative Pressure System Performance Criteria in Level I and Level II Containments

The exhaust ventilation system in Level I containments shall be capable of maintaining a minimum differential pressure of 0.02 inches of water gauge (as a goal) and a minimum of four air exchanges per hour. An air pressure differential shall be continuously maintained in all work areas from the start of project until final clearance air sampling is completed, and the Contracting Officer and/or (AM#1) Designated Industrial Hygienist find the results acceptable.

The Contractor shall calculate the number of air exchanges per hour based on the specified flow rate, adjusted for a loaded filter condition, for the in-place AFD(s). If a minimum of four air exchanges per hour is not achieved, additional AFD(s) shall be installed until the requirement is met. The Contractor shall submit the air exchange calculations for review by the (AM#1) Designated Industrial Hygienist.

If the work area isolation structure fails to prevent air from flowing out of the enclosed work areas during personnel or equipment movement through the structure, additional air locks and/or AFD units shall be installed.

The Contractor shall continuously monitor the air pressure differential across work area enclosures by using either a pressure differential meter or a manometer incorporating a circular or strip chart recorder. The monitoring system will be in place before the start of remedial activities. Verification by the (AM#1) Designated Industrial Hygienist or designated representative(s) is required.

#### 3.6.4 Exhaust Air Discharge

All exhaust air from any AFD unit will be discharged to the outdoors through windows or doors. The Contractor shall coordinate location doors required for discharge openings with the Contracting Officer. The Contractor shall remove window sashes and doors and reinstall after completion of the work. Seal openings used for discharge of exhaust air with duct-tape and plywood fitted tightly to opening. Exhaust discharge openings may be cut into plywood.

The Contractor shall be responsible for any and all damages to existing windows, doors, frames, etc. that occur as a result of this work. The Contractor shall repair or pay for the repair of all such damages.

### 3.7 DECONTAMINATION UNITS

#### 3.7.1 General

The Contractor shall establish a decontamination area adjacent to and connected to the enclosed Level I work areas. The Contractor shall ensure that employees and visitors enter and exit the enclosed work areas through the decontamination area.

Refer to paragraph 2.5 DECONTAMINATION AND WORK PROCEDURES regarding personnel entry and exit procedures through the decontamination units.

#### 3.7.2 Level I Decontamination Unit Description

The Decontamination unit shall consist of one chamber separated from the work area and the exterior door by triple-flap (three-curtained) doorways of opaque 6-mil polyethylene sheeting. The chamber (clean room) shall be equipped with a bin lined with impermeable labeled bags for the containment and disposal of the protective clothing. A HEPA-filtered vacuum shall be permanently installed in this room to clean the protective clothing. The room shall be of sufficient size to allow at least one worker to vacuum off and remove the protective clothing without permitting air movement between the decontamination areas or areas outside the decontamination system. Triple-flap doorways shall separate the clean room from the work area and from the exterior door.

#### 3.7.3 Decontamination Unit Construction

Materials used to construct a typical decontamination unit include 2- by 4-inch lumber for the frame, 1/4-inch to 1/2-inch plywood or 6-mil polyethylene for the walls, duct tape, staples, and nails. The floor should be covered with three layers of 6-mil polyethylene.

#### 3.7.4 Equipment/Bagged Material Decontamination

The decontamination units, described in paragraph 3.8.2 HEPA-Filtered Vacuum Cleaners in Level I Containments, may be used for removal and decontamination of equipment and wrapped and bagged portions of microbiologically contaminated materials. The bags or wrappings containing gypsum board, vinyl wall covering, and other demolished materials shall be thoroughly vacuumed with a HEPA vacuum cleaner in the work area and transported to the clean room where the wrappings or bags will again be HEPA vacuumed before transport to the interior area outside the work area containment.

### 3.8 HEPA-FILTER VACUUM CLEANERS

#### 3.8.1 General

The Contractor shall provide an adequate quantity of HEPA-filtered vacuum cleaners designed for continuous operation to perform the work in Level I containments in a timely and efficient manner. Vacuum hoses shall be of sufficient length to reach from the vacuum on the floor or on the rolling scaffold to all above ceiling areas.

Nozzle attachments shall include those as required by the Contractor to adequately remove all dust. As a minimum, nozzle attachments shall include crevice and extended bristle brush nozzles.

### 3.8.2 HEPA-Filtered Vacuum Cleaners in Level I Containments

At least three HEPA-filtered vacuum cleaners designed for continuous operation must be present per work area during microbial remediation in Level I containment. Locations shall include:

- Inside enclosed work area

- In the clean room of the decontamination unit

- In the building spaces immediately outside containment areas and available to remove any spores and particulate released from the enclosed work area.

Additional HEPA-filtered vacuum cleaners shall be present in enclosed work areas during remediation or cleaning work as required by the size (area) of the containment and to maintain timely progress of the work.

HEPA vacuum cleaners must be left in these sites after hours to allow the (AM#1) Designated Industrial Hygienist or designated representative(s) to access work areas when demolition is not in progress.

## 3.9 ENVIRONMENTAL CONSULTANT'S INITIAL INSPECTION

Before microbial remediation, the Contractor shall notify the (AM#1) Designated Industrial Hygienist and request a visual inspection of the enclosed work area preparation. The following shall be completed before inspection:

- Sealing of work area including stationary objects systems and placement of barriers

- Decontamination enclosure systems

- Temporary power and lighting

- Placement of operating AFDs

- Building exhaust air system isolated.

- Placement of air pressure differential monitoring system(s). System must be operating for inspection.

- Placement or storage inside the enclosed work area for all equipment necessary for project, including HEPA vacuums

- Placement of warning signs outside the containment and decontamination unit

## 4.0 WORK PROCEDURES FOR MICROBIAL REMEDIATION

### 4.1 GENERAL

All material scheduled for removal shall be demolished and removed either under Level I containment.

The Contractor at all times shall keep the site and work area free from accumulations of bagged dust material or rubbish caused by its operations and free from any flammable materials or other source of fire hazard. During the performance of the work, the Contractor shall remove all bagged material from and about the work site in strict accordance with the specifications and applicable codes and regulations

## 4.2 CONTAINMENT REMOVALS

### 4.2.1 Level I Containment

All microbially contaminated material in occupied areas shall be removed under full containment in Level I work areas unless specified otherwise.

All demolished material shall be single bagged in 6-mil polyethylene bags or wrapped in 6-mil polyethylene sheeting. Construction debris which does not have visible mold does not have to be wrapped or bagged prior to removal from the containment. The second and third floor of the building have only limited mold growth. The Contractor is responsible to verify quantities of mold growth present in the building.

### 4.2.3 Local Removal

If a hidden fungally contaminated area is discovered after the start of work and is (1) isolated and (2) covers an area of 4 square feet or less, the (AM#1) Designated Industrial Hygienist, at his/her option, may direct the Contractor to use a local removal technique to remove the contaminated material.

Contractor shall place a double layer of polyethylene sheeting over an area slightly larger than the contamination and secure it with duct tape. One worker will then cut out the contaminated area beyond the duct tape while a second worker uses the nozzle of a HEPA vacuum next to the cut. The contaminated piece will be double bagged as previously described. Workers will wear the same personal protective equipment as in the case of the mini-containment.

If a greater area of contamination on the hidden side of the removed materials is discovered during local removal, then work shall stop for assessment and direction by the (AM#1) Designated Industrial Hygienist and the Contracting Officer.

## 4.3 MATERIAL REMOVAL AND BAGGING

### 4.3.1 Sheetrock and HVAC Systems

The Contractor shall remove the sheetrock and HVAC by cutting and removing in large intact pieces and cutting out materials as one piece to reduce the amount of spores released during demolition.

In Level I containments, mini-containments, and local removals, the Contractor shall wrap manageable sections of contaminated sheetrock or HVAC systems in one layer of 6-mil polyethylene sheeting securely taped to form an airtight seal. Debris and small pieces shall be placed in 6-mil polyethylene bags, sealed.

Remove and bag all insulation, such as fiberglass batt or rigid foam insulation that may be contained in wall cavities of Level I work areas.

### 4.3.2 Daily Removal

At the end of each workday, the Contractor must bag all debris in containments for removal and remove all visible settled dust by HEPA vacuuming.

## 4.4 USE OF WATER

Limited use of water for removal of dust is allowed if relative humidity in the work areas and adjacent interior areas is below 60 percent. Surfaces to be cleaned should be damp wiped but not soaked. Plain potable tap water shall be used for cleaning. The Contractor shall monitor the relative humidity in the work areas.

#### 4.5 USE OF DISINFECTANT

##### 4.5.1 Procedures for Disinfection

Diluted disinfectant shall be applied with hand powered 1- to 2 1/2-gallon liquid sprayers on selected non-porous materials and surfaces, as directed by the (AM#1) Designated Industrial Hygienist or designated representative(s). The disinfectant shall consist of Foster's 40-80 Antimicrobial, OXINE or equivalent. The (AM#1) Designated Industrial Hygienist must approve any other chemicals used at the facility

The disinfectant shall be carefully applied to selected non-porous surfaces to prevent wetting of adjacent porous surfaces. Sufficient amounts of disinfectant shall be applied or reapplied to keep surfaces continuously wetted for 30 minutes, the appropriate residence time for the disinfectant. Reapply disinfectant as required during the 30-minute period as required to keep the surface wetted.

Remove residual liquid disinfectant with a wet/dry HEPA-filtered vacuum and/or damp mopping. If mops are used, replace daily or before starting work in another work area. Surfaces should not be left wet after disinfection.

The Contractor shall consult with the disinfectant manufacturer to determine if selected surfaces are safe for application. Certain metal surfaces (such as aluminum framing), plastics, and masonry (such as brick) may react adversely to the disinfectant chemical. The Contractor shall test suspect materials with a spot application of the disinfectant at the direction of the Contracting Officer and/or (AM#1) Designated Industrial Hygienist.

The Contractor shall submit information (including MSDSs) on proposed substitutions for the Foster's 40-80 or OXINE and the method of application to the Contracting Officer and (AM#1) Designated Industrial Hygienist. The Contracting Officer reserves the right to reject any and all substitutions.

##### 4.5.2 Areas to be Disinfected

All exposed concrete and concrete block surfaces, including floor slabs, columns, and walls in Level I containment shall be disinfected using the procedure specified in Section 4.5.1 after all other removal work is complete. After all surfaces have been disinfected and cleaned, the entire remaining structure should be sprayed with *Aegis Microshield* or equivalent. The Designated Industrial Hygienist must approve any substitutions for *Aegis Microshield*.

#### 4.6 UNCOVERING OF HIDDEN CONTAMINATION

##### 4.6.1 Outside Project Site Area

If the Contractor, the (AM#1) Designated Industrial Hygienist, the Government's maintenance staff, or other contractors employed by the Government discover microbial contamination during routine maintenance work in a designated "clean" area, the Contractor, maintenance staff, or other contractor shall immediately leave the area, close all doors to adjacent areas, and notify the (AM#1) Designated Industrial Hygienist or designated representative(s). The (AM#1) Designated Industrial Hygienist or designated representative(s) shall collect air samples for spore count or tape slide samples for direct microscope examination. The (AM#1) Designated Industrial Hygienist or designated representative(s) will then inform the Contracting Officer on the type and extent of containment required for removal, by others or by the Contractor under a change order, of newly discovered microbial contamination.

##### 4.6.2 Within Level I Containments

If visible microbial contamination is discovered, for example, in wall systems or beyond the scope of work in Level I containments, the Contractor shall stop all work in that area and notify the (AM#1) Designated Industrial Hygienist or designated representative(s). The (AM#1) Designated Industrial Hygienist or designated representative(s) shall inspect the contamination and then inform the Contracting Officer on

the type and extent of containment required for removal, by others or by the Contractor under a change order, of newly discovered microbial contamination.

#### 4.7 CONTAMINATION OF ADJACENT AREAS

##### 4.7.1 General

If any building or other areas adjoining the enclosed project areas become or are suspected of becoming contaminated with spores as a result of the Contractor's work, the Contractor shall thoroughly and totally decontaminate (for example, use separate HEPA vacuum in occupied space) the affected areas at the Contractor's cost. These areas shall be subject to detailed visual inspection and final clearance sampling at the (AM#1) Contracting Officer and Designated Industrial Hygienist's request.

##### 4.7.2 Occupied Areas

The (AM#1) Designated Industrial Hygienist or designated representative(s) shall spot-check the particulate levels in occupied areas adjacent to or within the same building as containment areas using a laser particle counter. If total particulate counts in the occupied areas significantly exceed a baseline concentration established by the (AM#1) Designated Industrial Hygienist or designated representative(s), the Contractor shall be directed to stop all work until the source of the particulate is determined.

If the source of particulate is from Contractor's remediation activities, the (AM#1) Designated Industrial Hygienist or their designated representative(s) will direct the Contractor to correct the leak and decontaminate the occupied area, as previously specified.

#### 5.0 CLEANUP, VISUAL INSPECTION, AND CLEARANCE SAMPLING OF REMEDIATION AREAS

##### 5.1 GENERAL

The Contractor, at all times, shall keep the project site and work area free from accumulations of dust, waste materials, or rubbish caused by its operations and from any flammable materials or other fire hazards. During the project, the Contractor shall remove all waste materials and rubbish from and about the work site in strict accordance with the specifications and applicable codes and regulations.

##### 5.2 USE OF WATER DURING CLEANUP

Limited use of water for cleanup and containment of dust is allowed, with prior consent by the (AM#1) Designated Industrial Hygienist, if relative humidity in the work areas and adjacent interior areas is below 60 percent. Surfaces to be cleaned should be damp wiped but not soaked.

If water sprayers are utilized, the Contractor shall use only manually operated sprayers with a maximum capacity of 1 to 2 1/2 gallon. Plain tap water shall be used for cleaning.

##### 5.3 POLYETHYLENE BARRIER CLEANING AND REMOVAL

Clean all work area side surfaces of polyethylene barrier sheeting with a HEPA vacuum before removal. If use of water is allowed, as specified in paragraph 5.2\_USE OF WATER DURING CLEANUP, damp wipe all polyethylene sheeting before removal by using a spray bottle and damp cloth. Change cloth frequently to minimize redepositing contaminants on the sheeting.

##### 5.4 POST-DEMOLITION CLEANUP

###### 5.4.1 General

The Contractor shall HEPA vacuum and wet wipe the first layer of polyethylene sheeting in Level I containment areas as specified in paragraph 5.3 POLYETHYLENE BARRIER CLEANING AND

REMOVAL. The Contractor shall remove this layer after demolition is complete, all demolished materials are removed from the containment, and all surfaces within the containment have been thoroughly cleaned with a HEPA-filtered vacuum cleaner.

At least 24 hours after all contaminated materials have been removed and cleaning is completed final air testing will be performed.

The negative air machines shall remain on.

## 5.5 DESIGNATED INDUSTRIAL HYGIENIST'S POST-DEMOLITION INSPECTIONS

### 5.5.1 General

After cleanup, the (AM#1) Designated Industrial Hygienist or designated representative(s) will perform a post-demolition inspection of the work area. If during this inspection any microbial contamination is observed, the Contractor shall remove the contaminated surfaces. If any visible dust or debris is observed, using the criteria stated in paragraph 5.9 CRITERIA FOR CLEANUP, the Contractor shall re-clean the work area(s) at no expense to the government.

The Contractor shall not remove containment barriers and AFDs until the (AM#1) Designated Industrial Hygienist or designated representative(s) approves the area on the basis of the post-demolition inspection. One or more AFDs shall remain operating, as directed by the (AM#1) Designated Industrial Hygienist or designated representative(s), until the work area passes the final clearance inspection and air sampling specified in paragraph 5.6 FINAL CLEARANCE AND BARRIER REMOVAL - LEVEL I CONTAINMENT.

### 5.5.2 Air Sampling

In work areas, the (AM#1) Designated Industrial Hygienist or designated representative(s) will conduct clearance air sampling by using volumetric spore traps or Zefon-Air-Cell. Air sampling for spores will be performed in Level I work areas only after the (AM#1) Designated Industrial Hygienist or designated representative(s) determines that construction dusts generated during demolition have settled (generally 24 hours required). The (AM#1) Designated Industrial Hygienist or designated representative(s) will analyze air samples within a 24 hour period.

If air in the work area is atypical (for example, spores of *Aspergillus*/*Penicillium* dominate; or total spore concentration in the work area are significantly elevated relative to outdoor air concentrations), the Contractor shall re-clean that area.

The (AM#1) Designated Industrial Hygienist or designated representative(s) will perform additional clearance air sampling (and the Contractor will perform additional re-cleaning, if necessary) until the total spore concentration and kinds of spores found in the work area are typical (total concentration of spores in the work area is similar to or less than that in typical outdoor air; similar kinds of spores are found in the work area and in outdoor air).

If the work area passes the post-demolition inspection and clearance air sampling, the Contractor will remove the second (outer) layer of polyethylene sheeting for Level I containments and HEPA vacuum all Level I work area surfaces.

### 5.5.3 Local Removal Inspection

As applicable, and after local removal is completed, the (AM#1) Designated Industrial Hygienist or designated representative(s) will conduct a clearance inspection. Before the inspection, the Contractor will clean all interior surfaces within 10 feet of the local removal site with a HEPA vacuum.

## 5.6 FINAL CLEARANCE AND BARRIER REMOVAL - LEVEL I CONTAINMENT

If the work area passes the post-demolition inspection and clearance sampling, the Contractor will remove the second (outer) layer of polyethylene sheeting for Level I containments and HEPA vacuum all work area surfaces. The Contractor will also HEPA vacuum all surfaces in adjacent interior spaces within 10 feet of the former location of containment barriers.

## 5.7 FINAL INSPECTIONS

After all polyethylene sheeting and all visible accumulations of material and debris are removed from the final containment, the Contractor shall notify the (AM#1) Designated Industrial Hygienist or designated representative(s) for a final clearance visual inspection. The Contractor, (AM#1) the Contracting Officer or their designated representative, and (AM#1) Designated Industrial Hygienist shall conduct a thorough visual inspection of the work area. If during this inspection any visible dust or debris is observed, using the criteria stated in paragraph 5.9 CRITERIA FOR CLEANUP, the Contractor shall reclean the work area (AM#1) at no expense to the Government.

## 5.8 CLEANUP OF AREAS OUTSIDE CONTAINMENT WORK AREAS

The Contractor shall clean up all debris (including wrappers, food packaging, bottles) and dust in interior spaces outside containment areas resulting from the Contractor's remediation work.

## 5.9 CRITERIA FOR CLEANUP

Criteria for completeness of cleanup shall be defined by ASTM Standard E1368-90 (Standard Practice for Visual Inspection of Asbestos Abatement Projects): "No dust, dirt, or debris should be visually detectable on the final inspection of the work area."

## 6.0 DISPOSAL OF MATERIAL

### 6.1 WASTE MATERIAL PACKAGING

As waste is removed, the Contractor must place it into a disposal container promptly. Disposal containers, at a minimum, shall consist of wrapping 6-mil polyethylene sheeting around manageable sections of demolished material or bagging in 6-mil polyethylene bags. The Contractor will tape bags and sheeting to form an airtight seal. One layer of wrapping or single bagging shall be used in Level I containments and local removals. In areas where no visible mold is observed on sheetrock (second and third floor, bagging of the construction debris is not required.

### 6.2 DECONTAMINATION AND STORAGE

The Contractor shall remove all wastes (for example, microbially damaged gypsum board or plaster) promptly from the interior of the buildings and stored in a secure dumpster provided by the Contractor on the Project Site before disposal.

The Contractor shall coordinate the location of dumpster(s) on the Project Site with the (AM#1) Contracting Officer.

### 6.3 LABELING

Bags that contain contaminated material from Level I containments that are handled by personnel other than the Remediation Contractor shall have warning labels affixed to them. The labels should have black characters on a yellow background written in both English and Spanish as follows:

WARNING- DO NOT OPEN

CONTENTS CONTAIN FUNGAL SPORES  
(CONTENTS DO NOT CONTAIN ASBESTOS)

#### 6.4 TRANSPORTATION

All material transport activities must meet United States Department of Transportation (USDOT), state, and local regulations, as applicable. The Contractor shall have the responsibility to determine current material handling, transporting, and disposal regulations for the work site.

#### 6.5 DISPOSAL

Bags containing contaminated materials must be disposed in a landfill authorized to receive construction debris. Bags must not be opened and must be buried in the landfill. Bags shall not be delivered to waste recycling facilities where unauthorized opening of bags could occur.

#### 6.6 DISPOSAL RECORDS

The Contractor shall fully document the actual disposal of each load of material delivered to the designated landfill.

The Contractor shall maintain documentation evidencing that all required permits, site locations, and arrangements for transport and disposal of materials, supplies, and the like have been obtained.

The Contractor shall obtain receipts from the landfill operator(s) that acknowledge the Contractor's delivery of waste material. All receipts shall be signed by the landfill operator or his authorized representative.

End of Section