

**AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT**

1. CONTRACT ID CODE

PAGE OF PAGES

1 3

2. AMENDMENT/MODIFICATION NO.  
0001

3. EFFECTIVE DATE  
09 SEP 99

4. REQUISITION/PURCHASE REQ. NO.

5. PROJECT NO. (If applicable)

6. ISSUED BY CODE

7. ADMINISTERED BY (If other than Item 6)

CODE

Department of the Army  
Corps of Engineers  
Fort Worth District

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

(✓)

9A. AMENDMENT OF SOLICITATION NO.  
DACA63-99-B-0071

(X)

9B. DATED (SEE ITEM 11)  
18 AUGUST 1999

10A. MODIFICATION OF CONTRACTS/ORDER NO.

10B. DATED (SEE ITEM 13)

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 tended.

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 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

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

(✓) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) 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 (such as changes in paying office, appropriation date, etc.) 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 (Specify type of modification and authority)

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

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

The Solicitation for TECHNOLOGY AND GENERAL REHABILITATION, FORT KNOX, KENTUCKY, is amended as follows:  
See Continuation Sheets.

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 (Type or print)

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

15B. CONTRACTOR/OFFEROR

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA

16C. DATE SIGNED

(Signature of person authorized to sign)

BY

(Signature of Contracting Officer)

Item 14. Continued.

**a. CHANGES TO BID OPENING DATE, Standard Form 1442, First Page, Item No. 13.A.**- In the second line, change the bid opening date from "17 SEPTEMBER 1999" to "21 SEPTEMBER 1999". Bid opening time will be 2 p.m. local time.

**b. CHANGES TO THE SPECIFICATIONS**

Replacement Sections - Replace the following sections with the accompanying new sections of the same number and title, bearing the notation "**AM #0001**:"

SECTION 01000 CONSTRUCTION SCHEDULE  
SECTION 01010 CONTRACT CONSIDERATIONS  
SECTION 01320 PROJECT SCHEDULE  
SECTION 01700 CONTRACT CLOSEOUT  
SECTION 09510 ACOUSTICAL CEILINGS

**c. CHANGES TO THE DRAWINGS**

Replacement Drawings.- Replace the drawings listed below with the attached new drawings(s) of the same number, bearing the notation "**AM #0001**:"

n11 1.cal Seq 11 N1.1 LAN ZONE KEY PLAN  
n14 1.cal Seq 14 N1.4 DATA NETWORK PLAN C  
n21 1.cal Seq 22 N2.1 LAN ZONE KEY PLAN  
n22 1.cal Seq 23 N2.2 DATA NETWORK PLAN A  
n24 1.cal Seq 25 N2.4 DATA NETWORK PLAN C  
n25 1.cal Seq 26 N2.5 DATA NETWORK PLAN D  
n31 1.cal Seq 33 N3.1 LAN ZONE KEY PLAN  
n33 1.cal Seq 35 N3.3 DATA NETWORK PLAN B  
n34 1.cal Seq 36 N3.4 DATA NETWORK PLAN C  
n41 1.cal Seq 38 N4.1 DATA NETWORK PLAN  
n51 1.cal Seq 43 N5.1 LAN ZONE KEY PLAN  
n52 1.cal Seq 44 N5.2 DATA NETWORK PLAN A  
n61 1.cal Seq 50 N6.1 LAN ZONE KEY PLAN  
n62 1.cal Seq 51 N6.2 DATA NETWORK PLAN A  
n63 1.cal Seq 52 N6.3 DATA NETWORK PLAN B  
n64 1.cal Seq 53 N6.4 DATA NETWORK PLAN C&D  
n65 1.cal Seq 54 N6.5 DATA NETWORK PLAN E  
n71 1.cal Seq 59 N7.1 LAN ZONE KEY PLAN  
n72 1.cal Seq 60 N7.2 DATA NETWORK PLAN A  
n73 1.cal Seq 61 N7.3 DATA NETWORK PLAN B  
n74 1.cal Seq 62 N7.4 DATA NETWORK PLAN C  
n81 1.cal Seq 68 E8.1 LAN ZONE KEY PLAN  
n82 1.cal Seq 69 E8.2 DATA NETWORK PLAN A  
n83 1.cal Seq 70 E8.3 DATA NETWORK PLAN B  
n84 1.cal Seq 71 E8.4 DATA NETWORK PLAN C  
n85 1.cal Seq 72 E8.5 DATA NETWORK PLAN D  
n92 1.cal Seq 79 N9.2 DATA NETWORK PLAN B  
n93 1.cal Seq 80 N9.3 DATA NETWORK PLAN C  
n101 1.cal Seq 86 N10.1 LAN ZONE KEY PLAN

n103 1.cal Seq 88 N10.3 DATA NETWORK PLAN B  
n104 1.cal Seq 89 N10.4 DATA NETWORK PLAN C  
n106 1.cal Seq 91 N10.6 DATA NETWORK PLAN E  
n107 1.cal Seq 92 N10.7 DATA NETWORK PLAN F&G

END OF AMENDMENT

## SECTION 01000

## CONSTRUCTION SCHEDULE

05/1998

AM #0001

## PART 1 GENERAL

## 1.1 SCHEDULE

Commence, prosecute, and complete the work under this contract in accordance with the following schedule and Section 00800 SPECIAL CONTRACT REQUIREMENT 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
(1) ALL WORK	Within 10 days after receipt of Notice to Proceed	365	\$ 300

## 1.1.1 Testing of Heating and Air-Conditioning Systems

[AM #0001] The time stated for completion of this project includes all required testing specified in appropriate specification section of heating, air conditioning, and ventilation systems including HVAC Commissioning. Exceptions, boiler combustion efficiency test, boiler full load tests, or cooling tower performance tests, and refrigeration equipment full load tests, as specified in the applicable specifications, shall be performed in the appropriate heating/cooling season as determined by the Contracting Officer.

## 1.2 CONSTRUCTION PHASING

See Section 01001, General Requirements.

## 1.3 WORK RESTRICTIONS

See Section 01001, General Requirements.

## 1.3.1 Working Hours

See Section 01001, General Requirements.

## 1.4 UTILITIES

## 1.4.1 Outages

The Contractor shall coordinate all requests for utility outages with the Contracting Officer in writing 17 days prior to date of requested outage:

- a. Water, gas, steam, 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. All utility outages shall be scheduled only on Saturdays, Sundays, or holidays unless specific approval is otherwise received.

1.5 STREET CLOSINGS

No streets will be closed.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

## SECTION 01010

## CONTRACT CONSIDERATIONS

**AM #0001**

## PART 1 GENERAL

## 1.1 CONTRACTOR ACCESS AND USE OF THE PREMISES

## 1.1.1 Commencement of Work

The Contractor should duly note that commencement of work as indicated in section 01000 CONSTRUCTION SCHEDULE does not necessarily indicate that the facility will be available for normal construction operations. Reference the remainder of these specifications for phasing, and availability of work criteria.

## 1.1.2 Station and Activity Regulations

Ensure that Contractor personnel employed on the Station become familiar with and obey Station and Activity regulations. Keep within the limits of the work areas and avenues of ingress and egress. Do not enter restricted areas unless required to do so and until cleared for such entry. The Contractor's equipment shall be clearly marked for identification.

## 1.1.3 Working Hours

## 1.1.3.1 Access Allowed

In facilities where Contractor will be permitted access to selected area inside the occupied facility, regular working hours shall consist of an 8.5 hour period between 7:30 and 4:00 pm, Monday through Friday, excluding Government holidays unless otherwise specified herein.

## 1.1.3.2 No Access Allowed

[AM #0001]In facilities where Contractor will not be allowed access inside the occupied facility, regular working hours shall consist of an 8.0 hour period between 3:00 and 11:00 pm, Monday through Friday, excluding Government holidays unless otherwise specified herein.

## 1.1.4 Work Outside Regular Hours

Work performed during hours outside of regular hours is subject to Contracting Officer approval. Contractor shall make application 7 calendar days prior to such work to facilitate arrangements to be made by the Government for inspecting work in progress. Application shall give the specific dates, hours, locations, type of work to be performed, contract number and project title.

## 1.1.5 Utility Cutovers

Contractor shall make effort to exact any required utility cutovers outside of regular working hours to minimize any impact in occupied facilities.

## 1.2 SPECIAL REQUIREMENTS FOR OCCUPIED BUILDINGS

The work under this contract requires special attention to the scheduling and conduct of the work in connection with existing building operations.

#### 1.2.1 Interruptions

Contractor shall identify on the construction schedule any activity or factor with potential to create interruption to the normal operation of the building.

#### 1.2.2 Life Safety and Egress

During any time the building is occupied, all code requirements for life safety and building egress/evacuation must be maintained.

#### 1.2.3 Security

The existing buildings and their contents must be kept secure at all times. Contractor will provide and install temporary closures as required to maintain physical security of the building and contents as directed by the Contracting Officer.

#### 1.2.4 Noise

The Contractor shall be aware of and recognize the fact that when he is working in occupied building facilities, he should apply conscientious effort to minimize noise in areas where it could be detrimental to building operations (e.g. adjacent to occupied classrooms). If it is judged that normal contractor operations would create noise of a level that would be detrimental to these operations, that portion of the work should be performed outside the hours of building occupancy.

#### 1.2.5 Dust Covers

Contractor shall provide temporary dust covers or protective enclosures to protect any furnishings, equipment or materials that are not required to be relocated during construction in any area. Covers or enclosures shall also be provided to protect existing construction that is to remain.

#### 1.2.6 Furnishings and Equipment

In areas where furniture or equipment relocation that will not be performed by the user is required to perform the required work, Contractor shall relocate movable items away from the working area, protect the furniture or equipment, or replace items damaged. The areas that users will facilitate furniture relocation are identified elsewhere in these specifications. Items shall be relocated to their original position following the completion of the work. Leave attached items in place and protect them from damage, or temporarily disconnect, relocate, protect and reinstall them upon completion of the work. All items must be fully operational as certified by the appropriate authority upon completion of the work.

#### 1.2.7 Conduct and Dress

Workers shall be properly attired at all times. Full length pants (no shorts), shirts (tee-shirt minimum), and proper shoes (no thongs, flip-flops or open toed sandals) are required. These criteria do not release Contractor responsibility from more stringent safety and dress criteria, however. Logos, slogans or other adornment of clothing that

could be considered to be offensive to minors are prohibited. No smoking will be permitted in the buildings. Smoking will be permitted only in designated outdoor areas. The contractor shall ensure that all lunch and breaktime debris are contained and removed from the project site at the end of each break or lunch period and disposed of properly. The contractor shall confine his personnel to the area within which the work is being performed. Profanity is strictly forbidden. The utmost courtesy shall be extended to the building occupants at all times. Conversation with occupants shall be limited to and pertain to the work at hand. All privately owned vehicles shall be parked in the contractor storage and staging area. Lights shall be turned off and doors and windows shall be locked after work in buildings following regular work hours.

#### 1.2.8 Use of Building Facilities and Equipment

No items in the facility are to be used by the Contractor's personnel. Brooms, vacuums, cleaning supplies, telephones, restrooms, cafeteria facilities, vending machines, etc. shall not be used by the Contractor's personnel.

#### 1.2.9 Restoration of Occupied Spaces

In the event that work has been performed in occupied spaces outside of regular work hours, the Contractor shall restore the space to its prior, occupiable and usable condition prior to conclusion of the days work. The space shall be available for use without restriction or interference the following day. All tools, supplies, materials, and equipment shall either be removed from the premises, or stored in such a manner as not to interfere with the facilities normal operations, subject to prior approval of the Contracting Officer. All dust and debris shall be removed from occupied spaces prior to the conclusion of work for the day.

### PART 2 PRODUCTS

NOT USED

### PART 3 EXECUTION

NOT USED

-- End of Section --

## SECTION 01320

## PROJECT SCHEDULE

06/97

AM #0001

## PART 1 GENERAL

## 1.1 REFERENCES

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

## ENGINEERING REGULATIONS (ER)

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

## 1.2 QUALIFICATIONS

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

## PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

## 3.1 GENERAL REQUIREMENTS

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

## 3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate Contractor's progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

### 3.3 PROJECT SCHEDULE

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

#### 3.3.1 Use of the Critical Path Method

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

#### 3.3.2 Level of Detail Required

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

##### 3.3.2.1 Activity Durations

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

##### 3.3.2.2 Procurement Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, and delivery.

##### 3.3.2.3 Government Activities

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

##### 3.3.2.4 Responsibility

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

##### 3.3.2.5 Work Areas

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

#### 3.3.2.6 Modification or Claim Number

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

#### 3.3.2.7 Bid Item

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

#### 3.3.2.8 Phase of Work

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

#### 3.3.2.9 Category of Work

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

#### 3.3.2.10 Feature of Work

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

### 3.3.3 Scheduled Project Completion

[AM #0001] Delete Paragraph.

#### 3.3.3.1 Project Start Date

[AM #0001] Delete Paragraph.

#### 3.3.3.2 Constraint of Last Activity

[AM #0001] Delete Paragraph.

#### 3.3.3.3 Early Project Completion

[AM #0001] Delete Paragraph.

### 3.3.4 Interim Completion Dates

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

#### 3.3.4.1 Start Phase

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

#### 3.3.4.2 End Phase

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

#### 3.3.4.3 Phase X

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

### 3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features which calculate one of these parameters from the other shall be disabled.

### 3.3.6 Out-of-Sequence Progress

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

### 3.3.7 Negative Lags

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

### 3.4 PROJECT SCHEDULE SUBMISSIONS

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

#### 3.4.1 Preliminary Project Schedule Submission

The Preliminary Project Schedule, defining the Contractor's planned operations for the first 60 calendar days shall be submitted for approval within 20 calendar days after the NTP is acknowledged. The approved preliminary schedule shall be used for payment purposes not to exceed [AM #0001] 90 calendar days after NTP.

#### 3.4.2 Initial Project Schedule Submission

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

#### 3.4.3 Periodic Schedule Updates

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

#### 3.4.4 Standard Activity Coding Dictionary

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

### 3.5 SUBMISSION REQUIREMENTS

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

#### 3.5.1 Data Disks

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

##### 3.5.1.1 File Medium

Required data shall be submitted on 3.5 disks, formatted to hold 1.44 MB of data, under the MS-DOS Version 5. or 6.x, unless otherwise approved by the Contracting Officer.

##### 3.5.1.2 Disk Label

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

#### 3.5.1.3 File Name

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

#### 3.5.2 Narrative Report

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

#### 3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

#### 3.5.4 Schedule Reports

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

##### 3.5.4.1 Activity Report

A list of all activities sorted according to activity number.

##### 3.5.4.2 Logic Report

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

##### 3.5.4.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall

not be shown on this report.

#### 3.5.4.4 Earnings Report

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

#### 3.5.5 Network Diagram

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

##### 3.5.5.1 Continuous Flow

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

##### 3.5.5.2 Project Milestone Dates

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

##### 3.5.5.3 Critical Path

The critical path shall be clearly shown.

##### 3.5.5.4 Banding

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

##### 3.5.5.5 S-Curves

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

#### 3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly onsite meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the

project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

#### 3.6.1 Meeting Attendance

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

#### 3.6.2 Update Submission Following Progress Meeting

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

#### 3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost-to-Date shall be subject to the approval of the Contracting Officer. As a minimum, the Contractor shall address the following items on an activity by activity basis during each progress meeting. [AM #0001] Once a week, meetings shall be scheduled by the Contractor with the COE.

##### 3.6.3.1 Start and Finish Dates

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

##### 3.6.3.2 Time Completion

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

##### 3.6.3.3 Cost Completion

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

##### 3.6.3.4 Logic Changes

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

##### 3.6.3.5 Other Changes

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

### 3.7 REQUESTS FOR TIME EXTENSIONS

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

#### 3.7.1 Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request.

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

#### 3.7.2 Submission Requirements

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

- a. A list of affected activities, with their associated project schedule activity number.
- b. A brief explanation of the causes of the change.
- c. An analysis of the overall impact of the changes proposed.
- d. A sub-network of the affected area.

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

#### 3.7.3 Additional Submission Requirements

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

### 3.8 DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The

Contractor shall include these revisions in the project schedule until revisions are submitted, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

### 3.9 OWNERSHIP OF FLOAT

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

-- End of Section --

## SECTION 01700

## CONTRACT CLOSEOUT

01/1997

AM #0001

## PART 1 GENERAL

## 1.1 PAYMENT

Contract closeout activities such as, but not limited to, operation and maintenance manuals, record drawings, warranty requirements, equipment warranty identification tags, and inventories, payrolls, and shop drawing submittals, are subsidiary activities of the contract work; separate payment will not be made for any activity unless otherwise specified. Final contract payment will not be made until completion and approval of all contract closeout activities.

[AM #0001] "Testing of Heating and Air Conditioning Systems" of Section 01000 has a value to the Government of 10% of the value of the equipment to be tested. The contractor will assign that amount to any equipment that will require testing after substantial completion pursuant to the above referenced specification paragraph.

## 1.2 OPERATION AND MAINTENANCE MANUALS

The Contractor shall be responsible for the preparation, coordination, execution and submittal of all operation and maintenance manuals (O & M Manuals), including spare parts lists, special tools, inventories of equipment manuals and maintenance instructions, and shall conduct all training for operating and service personnel. Operation and maintenance manuals shall cover all system installations provided in this contract and shall be in sufficient detail to facilitate normal maintenance and troubleshooting by persons with minimum experience with the installed equipment.

## 1.2.1 Submittal Requirements

All of the above listed items required in the technical specifications shall be submitted to the Contracting Officer not less than 90 days prior to the scheduled contract completion date. Fully developed and approved operation and maintenance manuals shall be provided 30 days prior to scheduling training for operating and service personnel. The Contractor shall coordinate the content of each instruction period required in the technical specifications with the Contracting Officer's Representative prior to the actual start of the training period.

## 1.2.1.1 Video taping of Training for Operating and Service Personnel

Each instruction or training period as discussed above, shall be video taped in VHS FORMAT by the Contractor. The taping shall include the entire session(s). The original video tape(s) shall be labeled and turned over to the Contracting Officer. The video camera and tapes utilized by the Contractor, shall be of a quality to enable clear and understandable playbacks of the recorded events.

## 1.2.1.2 Draft O &amp; M Manuals

On those systems where complete and comprehensive operation and maintenance manuals cannot be fully developed until the system(s) is checked, tested, and/or balanced, and the checking, testing, and/or balancing has not been done when submittals are required, a proposed draft of those system manual(s) shall be submitted. 10 percent of the each subsequent scheduled progress payment will be retained until the complete O & M Manuals submittal package have been submitted and approved. Submit fully developed O & M Manuals of the drafts for approval after the systems have been checked, tested, and/or balanced.

#### 1.2.1.3 Commencement of Warranty of Construction

Failure to submit all specified O & M manuals, spare parts listings, spare parts, special tools, inventories of installed property, and training video tapes in a timely manner will be considered as delaying substantial completion of the work. Commencement of warranty under the Contract Clause WARRANTY OF CONSTRUCTION will not occur until all these items are delivered and approved by the Contracting Officer, but not earlier than the date of final acceptance of the work by the Government. When the O & M Manuals with drafts are approved they will not constitute a reason for delaying the start of the warranty period.

#### 1.2.2 Government Possession of Work

The Government may take possession of any completed or partially completed work as provided for under Contract Clause entitled "USE AND POSSESSION PRIOR TO COMPLETION." If the installed equipment and/or systems thereto, have not been accepted by the Government due to the Contractor's failure to submit the above specified items, the Contractor shall operate and maintain such plant or system at no additional cost to the Government until such time that the specified items have been received, approved and any subsequent testing, check-out and/or training has been completed.

### 1.3 PREPARATION AND SUBMISSION OF OPERATION AND MAINTENANCE MANUALS

This paragraph establishes general requirements for the preparation and submission of equipment operating, maintenance, and repair manuals as called for in the various sections of the specifications. Specific instruction(s) relating to a particular system or piece of equipment shall be incorporated into the manuals in accordance with the applicable technical specification.

#### 1.3.1 General Requirements

##### 1.3.1.1 Hard Cover Binders

The manuals shall be permanently bound and have a hard cover. The following identification shall be inscribed on the cover: the words "EQUIPMENT OPERATING, MAINTENANCE, AND REPAIR MANUAL:" and the name, building number, location, and indication of utility or systems covered. Manuals shall be approximately 8-1/2 by 11 inches with large sheets folded in and capable of being easily pulled out for reference. All manuals for a single facility must be similar in appearance.

##### 1.3.1.2 Warning Page

A warning page shall be provided to warn of potential dangers (if they exist), such as high voltage, toxic chemicals, flammable liquids, explosive

materials, carcinogens, or high pressures. The warning page shall be placed inside the front cover, in front of the title page.

#### 1.3.1.3 Title Page

The title page shall show the name of the preparing firm (designer or contractor) and the date of publication.

#### 1.3.1.4 Table of Contents

Provide in accordance with standard commercial practice.

### 1.3.2 Equipment Operating, Maintenance, and Repair Manuals

#### 1.3.2.1 General

Separate manuals shall be provided for each utility system as defined hereinafter. Manuals shall be provided in the number of copies specified in the applicable technical section. Manuals shall include, in separate sections, the following information for each item of equipment:

a. Performance sheets and graphs showing capacity data, efficiencies, electrical characteristics, pressure drops, and flow rates. Marked-up catalogs or catalog pages do not satisfy this requirement. Performance information shall be presented as concisely as possible and contain only data pertaining to equipment actually installed.

b. Catalog cuts showing application information.

c. Installation information showing minimum acceptable requirements.

d. Operation and maintenance requirements. Include adequate illustrative material to identify and locate operating controls, indicating devices and locations of areas or items requiring maintenance.

(1) Describe, in detail, starting and stopping procedures for components, adjustments required to obtain optimum equipment performance, and corrective actions for malfunctions.

(2) Maintenance instructions describing the nature and frequency of routine maintenance and procedures to be followed. Indicate any special tools, materials, and test equipment that may be required.

e. Repair information including diagrams and schematics, guidance for diagnosing problems, and detailed instructions for making repairs. Provide troubleshooting information that includes a statement of the indication or symptom of trouble and the sequential instructions necessary. Include test hookups to determine the cause, special tools and test equipment, and methods for returning the equipment to operating conditions. Information may be in chart form or in tabular format with appropriate headings.

f. Parts lists and names and addresses of closest parts supply agencies.

g. Names and addresses of local manufacturers representatives.

#### 1.3.2.2 Facility Heating Systems

Information shall be provided on the following equipment: Boilers, water

treatment, chemical feed pumps and tanks, converters, heat exchangers, pumps, unit heaters, fin-tube radiation, air handling units (both heating only and heating and cooling), and valves (associated with heating systems).

#### 1.3.2.3 Air-Conditioning Systems

Provide information on chillers, packaged air-conditioning equipment, towers, water treatment, chemical feed pumps and tanks, air-cooled condensers, pumps, compressors, air handling units, and valves (associated with air-conditioning systems).

#### 1.3.2.4 Temperature Control and HVAC Distribution Systems

a. Provide the information described for the following equipment:

Valves, fans, air handling units, pumps, boilers, converters, and heat exchangers, chillers, water cooled condensers, cooling towers, and fin-tube radiation.

b. Provide all information described for the following equipment:

Control air compressors, control components (sensors, controllers, adapters, and actuators), and flow measuring equipment.

#### 1.3.2.5 District Heating Distribution Systems

Provide the information described for the following equipment: Valves, fans, pumps, converters and heat exchangers, steam traps, tanks (expansion, flash, etc.) and piping systems.

#### 1.3.2.6 Exterior Electrical Systems

Information shall be provided on the following equipment: Power transformers, relays, reclosers, breakers, and capacitor bank controls.

#### 1.3.2.7 Interior Electrical Systems

Information shall be provided on the following equipment: Relays, motor control centers, switchgear, solid state circuit breakers, motor controller, and EPS lighting systems, control systems (wire diagrams and troubleshooting flow chart), and special grounding systems.

#### 1.3.2.8 Energy Management and Control System

The maintenance manual shall include descriptions of maintenance for all equipment, including inspection, periodic preventative maintenance, fault diagnosis, and repair or replacement of defective components.

### 1.4 RECORD DRAWINGS

Record drawings shall be a record of the construction as installed and completed by the Contractor. They include all the information shown on the contract set of drawings and a record of all deviations, modifications, or changes from those drawings, however minor, which were incorporated in the work; all additional work not appearing on the contract drawings; and all changes which are made after final inspection of the contract work and the location and size of all uncharted existing utilities encountered. In event the Contractor accomplishes additional work which changes the as-built conditions of the facility after submission of the record

drawings, the Contractor shall furnish revised and/or additional drawings, hard copy and CADD files, as required to depict as-built conditions. The requirements for these additional drawings will be the same as for the record drawings included in the original submission. CADD files shall conform to the CADD requirements of the Contracting Officer and shall be demonstrated to work on the designated Government computer systems. CADD files shall be error- and virus-free.

#### 1.4.1 Submittals of Preliminary and Final Record Drawings

##### 1.4.1.1 Contracts Having Multiple Items of Work

A copy of the preliminary record drawings which the Contractor has reproduced from the approved preliminary record drawing sepias, shall be furnished to the Contracting Officer's representative at the time of the final inspection on each interim item of work.

##### 1.4.1.2 Contracts Having a Single Item of Work and the Chronologically Last Item of Work on Contracts Having Multiple Items of Work

At the time of final inspection on the last or only item of work, the Contractor shall deliver a copy of the approved preliminary record drawing sepias and blue lines to the Contracting Officer's Representative.

##### 1.4.1.3 All Contracts, Final Record Drawings

Final record drawing submittal requirements are as stated later in this specification.

#### 1.4.2 Preliminary Record Drawings

The Contractor shall mark up both a sepia set and a blue line set of prints to show as-built conditions. These two sets, hereafter called preliminary record drawings, or singly, sepias or blue lines, shall be kept current and available on the jobsite at all times, except as noted below. A member of the Contractor's Quality Control Organization shall be assigned responsibility for the maintenance and currency of the preliminary record drawings. This assignment and any reassignment of duties concerning the maintenance of the record drawings shall be promptly reported to the Contracting Officer's representative for approval. All changes from the contract drawings which are made in the work or additional information which might be uncovered in the course of construction, including uncharted utilities, shall be accurately and neatly recorded as they occur by means of details and notes. All changes and/or required additions to the preliminary record drawings shall be clearly identified in a color contrasting to blue and which is compatible with reproduction of the preliminary record drawing sepias. During periods when the sepias are being copied and are therefore not available at the jobsite, the Contractor shall continue posting all required data to the blue lines. The Contractor shall minimize the time that the sepias are away from the jobsite and he shall update them with all as-built data immediately upon their return. The sepias and blue lines will be jointly inspected for accuracy and completeness by the Contracting Officer's representative and the assigned representative of the Contractor's Quality Control Organization prior to submission of each monthly pay estimate. (See paragraph, "Withholding for Preliminary Record Drawings.") The record drawings shall show the following information, but not be limited thereto:

- a. The location and description of any utility lines or other

installation of any kind or description known to or found to exist within the construction area. The location of exterior utilities includes actual measured horizontal distances from utilities to permanent facilities/features. These measurements shall be within an accuracy range of mm6 inches and shall be shown at sufficient points to permit easy location of utilities for future maintenance purposes. Measurements shall be shown for all change of direction points and all surface or underground components such as valves, manholes, drop inlets, cleanouts, meter, etc. The general depth range of each underground utility line shall be shown (i.e., 3 to 4 feet in depth). The description of exterior utilities includes the actual quantity, size, and material of utility lines.

b. The location and dimensions of any changes within the building or structure.

c. Correct grade or alinement of roads, structures or utilities if any changes were made from contract drawings.

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

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

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

g. Options

Where contract drawings or specifications allow options, only the option selected for construction shall be shown on the record drawings.

#### 1.4.2.1 Blue Line or Black Line Prints

Blue line or black line prints shall be half size, 15" by 21" . All blue or black line prints shall exhibit good readable print with clear, sharp, dark lines, and shall not be smeared, faded, double imaged, or have torn or ragged edges.

#### 1.4.2.2 Prefinal Inspection For Each Item of Work

As part of the prefinal inspection for each item of work, the preliminary record drawings will be reviewed. They shall comply with this specification prior to scheduling the final inspection, and/or prior to substantial completion of the item of work.

#### 1.4.2.3 Preliminary Record Drawing Final Submittal

Prior to scheduling the final acceptance inspection of the last or only bid schedule item of work, the preliminary record drawings shall be completed and delivered to the Contracting Officer's Representative for review and approval. If upon review, the drawings are found to contain errors and/or omissions, they will be returned to the Contractor for corrections. Failure of the Contractor to make timely delivery of the preliminary record drawings on any or all items of work will be cause for the Government to delay substantial completion and to assess liquidated damages in accordance with the terms and conditions of the contract.

#### 1.4.2.4 Withholding for Preliminary Record Drawings

Failure by the Contractor to maintain current and satisfactory preliminary record drawings in accordance with these requirements will result in withholding from progress payments 10 percent of the progress payment amount. This unearned amount will be indicated on monthly payment estimates until the Contractor has fulfilled these contract requirements.

#### 1.4.3 Final Record Drawings

Upon approval of the preliminary record drawings, the Contracting Officer will furnish the Contractor the approved blue lines and the computer generated graphics files (CADD files) of the contract drawings. The CADD files will be provided to the Contractor in Autodesk's AutoCADD Version 14.

The Contractor will then modify these original drawings, tracings, and CADD files as may be necessary to correctly show all the features of the project as it was constructed by bringing the contract set into agreement with the preliminary record drawings, including adding additional drawings and CADD files as may be necessary. The original drawings, tracings, and CADD files are part of the permanent records of this project and the Contractor shall be responsible for the protection and safety thereof until returned to the Contracting Officer. Drawings, tracings, or CADD files damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at the Contractor's expense. If additional drawings are required, they shall be prepared on blank sheets furnished by the Government and added to the CADD files.

Upon approval of preliminary record drawings, the Contractor shall modify the CADD files of the contract drawings as may be necessary to correctly show all the features of the project as it was constructed by bringing the contract set into agreement with the preliminary record drawings, including adding additional drawings and CADD files as may be necessary. The CADD files are part of the permanent records of this project and the Contractor shall be responsible for the protection and safety thereof until returned to the Contracting Officer. Any CADD files damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at the Contractor's expense. If additional drawings are required, they shall be added to the CADD files.

##### 1.4.3.1 Drafting

Only personnel proficient in the preparation of engineering drawings and CADD shall be employed to modify the original contract drawings, prepare additional new drawings, and modify the CADD files. **Furnish for approval the qualifications and experience of the personnel, and types of equipment and software, to be used for this work. Modification of CADD files will not proceed until the resulting CADD files have been acceptably demonstrated to work on the Corps of Engineers' [Area] [Resident] Office and the user's CADD systems.** All additions and corrections to the contract drawings shall be neat, clean, and legible and shall match the adjacent existing linework and/or lettering being annotated in type, density, size, and style. All modifications and new drawings shall, in addition to the above, conform to applicable requirements of the Southwestern Division Architectural and Engineering Instruction Manual and the Fort Worth District CADD Operating Procedures Manual available from the Area or Resident Engineer's Office. The Contracting Officer will review all record drawings for accuracy and conformance to the above specified drafting and CADD standards. The Contractor will make all corrections, changes,

additions, and deletions required to meet these standards.

#### 1.4.3.2 Final Revisions

When final revisions have been completed, place the words "REVISED RECORD DRAWING," in letters at least mm3/16 inch high, and the date of completion in the revision block above the latest existing revision notation on each drawing CADD file.

#### 1.4.3.3 Title Blocks

The title block to be used for any new record drawings shall be similar to that used on the original drawings.

#### 1.4.3.4 Copies of the Final Record Drawings

Blue line or black line prints shall be half size, sheet 15" by 21" . All blue or black line prints shall exhibit good readable print with clear, sharp, dark lines, and shall not be smeared, faded, double imaged, or have torn or ragged edges.

#### 1.4.3.5 Submittal Requirements

The Contractor shall submit to the Contracting Officer the final record drawings, consisting of one set of full size blue line or black line prints; two sets of corrected CADD files in AutoCadd, version 14, one for the District and one for the user on the media as determined by the Contracting officer; verification that the CADD files have been loaded and work on the designated computer systems and are error free; the approved preliminary blue lines; and all required reproduced items. All paper prints, reproducible drawings, and CADD files will become the property of the Government upon final approval.

#### 1.4.4 Final Record Drawings

Upon approval of the preliminary record drawings, the Contractor shall prepare one additional set, marked in the same color(s) as the preliminary sets, and submit these three sets (at least one shall be a reproducible) of final, corrected record drawings to the Contracting Officer. Include CADD files for Contractor-original preliminary record drawings that were drawn using CADD such as subcontractor submittals (e.g. fire protection) and approved Contractor's solutions to problems. CADD files shall conform to the CADD requirements of the Contracting Officer, have been demonstrated to work on the designated Government computer systems, and be error- and virus-free. Upon approval and acceptance of final record drawing sets, the Contracting Officer will distribute the 3 copies as follows:

- a. one reproducible copy will be furnished to the customer within 30 days of completion of construction;
- b. one copy will be retained by the Corps of Engineers' field office; and
- c. one copy will be forwarded to the designer for use in updating the CADD files.

#### 1.5 ADDITIONAL WARRANTY REQUIREMENTS

The warranty requirements specified in this paragraph are in addition to

those specified in the Contract Clause WARRANTY OF CONSTRUCTION in Section 00700 CONTRACT CLAUSES.

#### 1.5.1 Performance Bond

It is understood that the Contractor's Performance Bond will remain effective throughout the life of all warranties and warranty extensions. This paragraph is applicable to the Contractor's Warranty of Construction only and does not apply to manufacturers' warranties on equipment, roofing, and other products.

(a) In the event the Contractor or the Contractor's designated representative fails to commence and diligently pursue any work required under the Warranty of Construction Paragraph within a reasonable time after receipt of written notification pursuant to the requirements thereof, the Contracting Officer shall have a right to demand that said work be performed under the Performance Bond by making written notice on the surety. If the surety fails or refuses to perform the obligation it assumed under the Performance Bond, the Contracting Officer shall have the work performed by others, and after completion of the work, shall make demand for reimbursement of any or all expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

(b) Warranty repair work which arises to threaten the health or safety of personnel, the physical safety of property or equipment, or which impairs operations, habitability of living spaces, etc., will be handled by the Contractor on an immediate basis as directed verbally by the Contracting Officer or the Contracting Officer's authorized representative. Written verification will follow verbal instructions. Failure of the Contractor to respond as verbally directed will be cause for the Contracting Officer or the Contracting Officer's authorized representative to have the warranty repair work performed by others and to proceed against the Contractor as outlined in the paragraph (a) above.

#### 1.5.2 Pre-Warranty Conference

Prior to contract completion and at a time designated by the Contracting Officer or Contracting Officer's authorized representative, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of Contract Clause WARRANTY OF CONSTRUCTION. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer or Contracting Officer's authorized representative for the execution of the construction warranty shall be established/reviewed at this meeting.

In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue warranty work action on behalf of the Contractor. This single point of contact will be located within the local service area of the warrantied construction, will be continuously available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of Contractor's responsibilities in connection with Contract Clause WARRANTY OF CONSTRUCTION.

### 1.5.3 Equipment Warranty Identification Tags

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

## 1.6 EQUIPMENT WARRANTY IDENTIFICATION TAGS

### 1.6.1 General Requirements

The Contractor shall provide warranty identification tags on all Contractor and Government furnished equipment which he has installed.

#### 1.6.1.1 Tag Description and Installation

The tags shall be similar in format and size to the exhibits provided by this specification, they shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure-sensitive adhesive back, and they shall be installed in a position that is easily (or most easily) noticeable. Contractor furnished equipment that has differing warranties on its components will have each component tagged.

#### 1.6.1.2 Sample Tags

Sample tags shall be submitted to the Contracting Officer's Authorized Representative for review and approval. These tags shall be filled out representative of how the Contractor will complete all other tags.

#### 1.6.1.3 Tags for Warranted Equipment

The tag for this equipment shall be similar to the following. Exact format and size will be as approved by the Contracting Officer's Authorized Representative. The Contractor warranty expires (warranty expiration date) and the final manufacturer's warranty expiration dates will be determined as specified by the Paragraph "WARRANTY OF CONSTRUCTION."

EQUIPMENT WARRANTY CONTRACTOR FURNISHED EQUIPMENT	
MFG _____	MODEL NO. _____
SERIAL NO. _____	
CONTRACT NO. _____	
CONTRACTOR NAME _____	
CONTRACTOR WARRANTY EXPIRES _____	
MFG WARRANTY(IES) EXPIRE _____	

EQUIPMENT WARRANTY GOVERNMENT FURNISHED EQUIPMENT	
MFG _____	MODEL NO. _____
SERIAL NO. _____	
CONTRACT NO. _____	
DATE EQUIP PLACED IN SERVICE _____	
MFG WARRANTY(IES) EXPIRE _____	

1.6.1.4 Duplicate Information

If the manufacturer's name (MFG), model number and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag.

1.6.2 Execution

The Contractor will complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment. The Contractor will schedule this activity in the Contractor progress reporting system. The final acceptance inspection is scheduled based upon notice from the Contractor, thus if the Contractor is at fault in this inspection being delayed, the Contractor will, at the Contractor's own expense, update the in-service and warranty expiration dates on these tags.

1.6.3 Payment

The work outlined above is a subsidiary portion of the contract work, and has a value to the Government approximating 5% of the value of the Contractor furnished equipment. The Contractor will assign up to that amount, as approved by the Contracting Officer's Authorized Representative.

1.6.4 Equipment Warranty Tag Replacement

Under the terms of this contract, the Contractor's warranty with respect to work repaired or replaced shall run for one year from the date of repair or replacement. Such activity shall include an updated warranty identification tag on the repaired or replaced equipment. The tag shall be furnished and installed by the Contractor, and shall be identical to the original tag, except that the Contractor's warranty expiration date will be one year from the date of acceptance of the repair or replacement.

## 1.7 INVENTORY OF CONTRACTOR FURNISHED AND INSTALLED EQUIPMENT

### 1.7.1 Equipment Identification Number

There are two separate Equipment ID numbering systems. One is for Real Property installed equipment. The other is for Equipment in Place. Only spaces filled with significant digits will be used. Do not add zeros or blanks to fill extra spaces.

#### a. Real Property Installed Equipment (RFIE)

The equipment ID Number, for use with RPIE, is made of 4 parts. These parts represent the building number, the equipment type suffix, the floor the equipment is located on, and the sequence number of that type of equipment on that floor in the building.

(1) The first part is the building number.

(2) The second part, the equipment type suffix, is a 1 digit alpha-character based on IFS-M. Acceptable codes are:

(a) A - Air Conditioning Plant: Includes chillers, condensing units, etc., excludes air conditioning plants that directly support user end item equipment, such as a separate package unit to chill a computer room equipment space. Excludes window air conditioning units.

(b) B - Compressed Air/Vacuum: Note, only those that are part of the building systems such as pneumatic controls for Energy Management and Control Systems (EMCS). Does not include compressed air and vacuum systems that directly support user end items.

(c) C - Evaporative cooling and mechanical equipment.

(d) D - Dehumidification Equipment: Applies to equipment whose sole purpose is dehumidification of facilities. Excludes dehumidification that directly support user and item equipment.

(e) E - Electrical Generating Plants: Includes permanently installed generators and switch gear associated with prime power and emergency generator plants. Excludes uninterruptable power systems (UPS) equipment.

(f) F - Transformers: Does not include transformers that directly support user end items or equipment.

(g) G - Other Heating Support: Includes air handlers, circulating pumps, etc., associated with heating systems. Also includes dual (heating/cooling) air handlers, etc. Includes specialized central energy management systems EMCS, exclusive of CPU's and peripherals.

(h) H - Heating Plants: Limited to direct fired, fuel burning

heating plants. Does not apply to electrical fired heaters, heat pumps, or associated equipment. See Suffixes A, G, or M.

(i) I - Substation and Switching Station: Associates with stepdown from incoming primary voltage to secondary voltage or lower voltage primary voltage.

(j) J - Sewage Pumping Plants: Includes grinder pump type sewage lift systems as well as conventional sewage lift stations, associated controls and equipment.

(k) M - Miscellaneous Utilities: Includes gas generators, cooling towers and other facility systems not otherwise identified. Excludes systems associates with and in support of user end items.

(l) N - Liquid Fuel Dispensing: Includes pumps, controls.

(m) P - Cold Storage and Refrigeration Plants: Excludes portable and prefabricated refrigeration systems which can be removed from the facility.

(n) R - Fire Extinguishing Systems: Includes standpipe and sprinkler systems, as well as fixed gas and/or chemical extinguishing systems intended for protection of the facility. Excludes portable extinguishing systems and fixed gas and/or chemical extinguishing systems intended for protection of user and item equipment. Includes specialized systems such as Engineer Smoke Control systems (ESCS) other than CPU's and associated peripherals of such systems.

(o) S - Water Pumping Plants: Applies to potable and nonpotable water pumping systems only. Excludes storm waste pumping systems which should be includes under Equipment Suffix M.

(p) T - Fire and other Alarm Systems: Excludes security alarm systems and alarm systems associated with user and item equipment such as medical refrigerators and commissary display cases. Does not include 'pumpout' and 'overflow' alarms associates with water and sewage lift stations and other similar facilities.

(q) W - Water Sources: Includes potable and non-potable well equipment and storage tanks.

(r) X - Water Treatment and Filtration Plants: Includes water softeners and deionization equipment in support of facility systems, as well as systems for processing raw water to potability standards. Excludes systems that directly support user and item equipment.

(s) Y - Industrial Waste and Sewage Treatment Plants: Includes grease, oil, and other waste separators.

(t) Z - Special Purpose: Assigned by installation a case by case basis.

(3) The third part, the floor, is a 1 to 2 alphanumeric character. The system for defining floor number is:

(a) Floors, above and including the ground floor, are numbered in ascending order with the ground floor being equal to 1.

(b) Interstitial floors and spaces are identified by the letter 'I' and the number of the occupied floor below the interstitial space. For example, the interstitial space above the third floor of a building would be identified as: I3. Attic spaces are numbered as interstitial space.

(c) Crawl space, below the first floor, is identified as: CS.

(d) Basements and lower level floors are numbered, in descending order, with a 2 character identified. The first character is the letter 'L' and the second character is the number of the floor with the floor immediately under the ground floor being: L1.

(e) Where equipment, associates with a facility is mounted on the ground outside the physical perimeter of the facility, such as a condensing unit, the floor is identified a: G.

(4) The fourth part, the sequence number, is a 2 to 4 digit character. The first digit shall always be a slash (/). The second through fourth character is the sequential numbering (1 thru 999) of items of equipment with identical first 3 parts of the equipment ID number. For existing facilities, this will normally be given to the activity installing the equipment by the O&M Division. For new facilities, this is assigned by the activity installing the equipment.

b. For "Equipment In Place" Equipment

The equipment ID number, for use with equipment in place (i.e., end item equipment which is not an integral part of the building but which is installed in the building under this contract,) is made of 2 parts. These parts represent the Department of Defense Activity Code (DODAC) of the unit or equipment in the activity.

(1) The first part, the DODAC, is a 6 digit alpha-numeric character representing the primary user or responsible organization. It will be provided to the contractor upon request from the Contracting Officer.

(2) The second part, the sequence number, is a 1 to 4 digit character. It is the sequential numbering (1 thru 9999), of equipment in that building, belonging to the DODAC. Questions, with respect to sequence numbers, should be addressed to the O&M Division.

#### 1.7.2 Equipment Data

List shall include on each item as applicable: Description, Manufacturer, Model or Catalog No., Serial No., Input (power voltage, BTU, etc.), Output (power, voltage, BTU, tons, etc.). Size or Capacity (tanks), and net inventory costs; any other data necessary to describe item and shall list all warrantors and warranty periods for each item of equipment.

#### 1.8 INVENTORY OF CONTRACTOR FURNISHED AND INSTALLED EQUIPMENT

A list of equipment or units of equipment that require electrical power or fuel, or may require removal or replacement such as AHUs, fans, air conditioners, compressors, condensers, boiler, thermal exchangers, pumps, cooling towers, tanks, fire hydrants, sinks, water closets, lavatories, urinals, shower stalls, and any other large plumbing fixtures, light

fixtures, etc., shall be made and kept up to date as installed. The list shall be reviewed periodically by the Government to insure completeness and accuracy. Partial payment will be withheld for equipment not incorporated in the list. List shall include on each item as applicable: Description, Manufacturer, Model or Catalog No., Serial No., Input (power, voltage, BTU, etc.), Output (power, voltage, BTU, tons, etc.), Size or Capacity (tanks), and net inventory costs; any other data necessary to describe item and shall list all warrantors and warranty periods for each item of equipment. Final list shall be turned over to the Authorized Representative of the Contracting Officer at the time of the Contractor's quality control completion inspection.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

## SECTION 09510

## ACOUSTICAL CEILINGS

08/96

AM #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.

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 635	(1995) Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings
ASTM C 636	(1996) Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels
ASTM E 1264	(1990) Standard Classification for Acoustical Ceiling Products

## 1.2 GENERAL REQUIREMENTS

Existing acoustical treatment shall consist of sound controlling units mechanically mounted on a ceiling suspension system. The unit size, texture, finish, and color shall match the existing units. The type and height of existing ceilings is indicated on the drawings. It is anticipated that during the course of performing the work of this project, some of the ceiling panels and grid will be damaged. Damaged panels and grid shall be replaced as indicated on the drawings and in conformance with this section.

## 1.3 DELIVERY AND STORAGE

Materials shall be delivered to the site in the manufacturer's original unopened containers with brand name and type clearly marked. Materials shall be carefully handled and stored in dry, watertight enclosures. Immediately before installation, acoustical units shall be stored for not less than 24 hours at the same temperature and relative humidity as the space where they will be installed in order to assure proper temperature and moisture acclimation.

## 1.4 ENVIRONMENTAL REQUIREMENTS

A uniform temperature of not less than 60 degrees F nor more than 85 degrees F and a relative humidity of not more than 70 percent shall be maintained before, during, and after installation of acoustical units.

## 1.5 SCHEDULING

Mechanical, electrical, and other work above the ceiling line shall be

completed and heating, ventilating, and air conditioning systems shall be installed and operating in order to maintain temperature and humidity requirements.

#### 1.6 WARRANTY

Manufacturer's standard performance guarantees or warranties that extend beyond a one year period shall be provided.

### PART 2 PRODUCTS

#### 2.1 ACOUSTICAL UNITS

Acoustical units shall conform to ASTM E 1264, Class A, and the following requirements:

##### 2.1.1 Units for Exposed-Grid System

Units shall be type III (mineral fiber with painted finish) pattern to match existing units.

#### 2.2 SUSPENSION SYSTEM

New suspension system components shall match existing standard exposed-grid standard width flange, and shall conform to ASTM C 635 for intermediate-duty systems. Surfaces exposed to view shall be aluminum or steel with a factory-applied white baked-enamel finish. Wall molding shall have a flange of not less than 15/16 inch. Corners shall be provided to match existing.

#### 2.3 HANGERS

Hangers shall be galvanized steel wire [AM #0001] and shall conform to ASTM A 641, Class 3 zinc coating and be a minimum of No. 12 gage wire. Hangers and attachment shall support a minimum 300 pound ultimate vertical load without failure of supporting material or attachment.

#### 2.4 FINISHES

Acoustical units and suspension system members shall have manufacturer's standard textures, patterns and finishes as specified. Ceiling suspension system components shall be treated to inhibit corrosion.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

Acoustical work shall be provided complete with necessary fastenings, clips, and other accessories required for a complete installation. Mechanical fastenings shall not be exposed in the finished work. Hangers shall be laid out for each individual room or space. Hangers shall be placed to support framing around beams, ducts, columns, grilles, and other penetrations through ceilings. Main runners and carrying channels shall be kept clear of abutting walls and partitions. At least two main runners shall be provided for each ceiling span. Wherever required to bypass an object with the hanger wires, a subsuspension system shall be installed, so that all hanger wires will be plumb.

##### 3.1.1 Suspension System

Suspension system shall be installed in accordance with ASTM C 636 and as specified herein. There shall be no hanger wires or other loads suspended from underside of steel decking.

#### 3.1.1.1 Plumb Hangers

Hangers shall be plumb and shall not press against insulation covering ducts and pipes.

#### 3.1.1.2 Splayed Hangers

Where hangers must be splayed (sloped or slanted) around obstructions, the resulting horizontal force shall be offset by bracing, countersplaying, or other acceptable means.

#### 3.1.2 Wall Molding

Wall molding shall be provided where ceilings abut vertical surfaces. Wall molding shall be secured not more than 3 inches from ends of each length and not more than 16 inches on centers between end fastenings. Wall molding springs shall be provided at each acoustical unit in semi-exposed or concealed systems.

#### 3.1.3 Acoustical Units

Acoustical units shall be installed in accordance with the approved installation instructions of the manufacturer. Edges of acoustical units shall be in close contact with metal supports, with each other, and in true alignment. Acoustical units shall be arranged so that units less than one-half width are minimized. Units in exposed-grid system shall be held in place with manufacturer's standard hold-down clips, if units weigh less than 1 psf or if required for fire resistance rating.

#### 3.2 CLEANING

Following installation, dirty or discolored surfaces of acoustical units shall be cleaned and left free from defects. Units that are damaged or improperly installed shall be removed and new units provided as directed.

-- End of Section --