
USACE / NAVFAC / AFCEA / NASA UFGS-01 78 00 (May 2009)

Preparing Activity: USACE Superseding
UFGS-01 78 00 (January 2008)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated October 2009

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 78 00

CLOSEOUT SUBMITTALS

05/09

PART 1 GENERAL

- 1.1 REFERENCES
- 1.2 SUBMITTALS
- 1.3 PROJECT RECORD DOCUMENTS
 - 1.3.1 Record Drawings
 - 1.3.1.1 Government Furnished Materials
 - 1.3.1.2 Working Record and Final Record Drawings
 - 1.3.1.3 Drawing Preparation
 - 1.3.1.4 Computer Aided Design and Drafting (CADD) Drawings
 - 1.3.1.5 Manually Prepared Drawings
 - 1.3.1.6 Payment
 - 1.3.2 As-Built Record of Equipment and Materials
 - 1.3.3 Final Approved Shop Drawings
 - 1.3.4 Construction Contract Specifications
 - 1.3.5 Real Property Equipment
- 1.4 SPARE PARTS DATA
- 1.5 PREVENTATIVE MAINTENANCE
- 1.6 CERTIFICATION OF EPA DESIGNATED ITEMS
- 1.7 WARRANTY MANAGEMENT
 - 1.7.1 Warranty Management Plan
 - 1.7.2 Performance Bond
 - 1.7.3 Pre-Warranty Conference
 - 1.7.4 Contractor's Response to Construction Warranty Service Requirements
 - 1.7.5 Warranty Tags
- 1.8 MECHANICAL TESTING AND BALANCING
- 1.9 OPERATION AND MAINTENANCE MANUALS
 - 1.9.1 Configuration
 - 1.9.2 Training and Instruction
- 1.10 CLEANUP
 - 1.10.1 Extraordinary Cleanup Requirements
- 1.11 REAL PROPERTY RECORD

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section Table of Contents --

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SECTION 01 78 00

CLOSEOUT SUBMITTALS 05/09

NOTE: This guide specification covers the requirements for closeout submittals including: revised project documents, warranty management, testing, adjusting and balancing, O & M manuals, and final cleaning.

Comments and suggestions on this guide specification are welcome and should be directed to the technical proponent of the specification. A listing of technical proponents, including their organization designation and telephone number, is on the Internet.

Recommended changes to a UFGS should be submitted as a Criteria Change Request (CCR).

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

PART 1 GENERAL 1.1 REFERENCES

NOTE: Issue (date) of references included in project specifications need not be more current than provided by the latest guide specification. Use of SpecsIntact automated reference checking is recommended for projects based on older guide specifications.

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

ASTM INTERNATIONAL (ASTM)

ASTM E 1971

(2005) Stewardship for the Cleaning of
Commercial and Institutional Buildings

GREEN SEAL (GS)

GS-37

(2000; R 2005) Industrial and
Institutional Cleaners

U.S. ARMY CORPS OF ENGINEERS (USACE)

TR-06-X

(2006; R 3.0) Architectural, Engineering,
and Construction (A/E/C) CADD Standard

NOTE: Coordinate with the customer regarding
special warranty requirements and options.

1.2 SUBMITTALS

NOTE: Review submittal description (SD) definitions
in Section 01 33 00 SUBMITTAL PROCEDURES and edit
the following list to reflect only the submittals
required for the project. Submittals should be kept
to the minimum required for adequate quality control.

A "G" following a submittal item indicates that the
submittal requires Government approval. Some
submittals are already marked with a "G". Only
delete an existing "G" if the submittal item is not
complex and can be reviewed through the Contractor's
Quality Control system. Only add a "G" if the
submittal is sufficiently important or complex in
context of the project.

For submittals requiring Government approval on Army
projects, a code of up to three characters within
the submittal tags may be used following the "G"
designation to indicate the approving authority.
Codes for Army projects using the Resident
Management System (RMS) are: "AE" for
Architect-Engineer; "DO" for District Office
(Engineering Division or other organization in the
District Office); "AO" for Area Office; "RO" for
Resident Office; and "PO" for Project Office. Codes
following the "G" typically are not used for Navy,
Air Force, and NASA projects.

Choose the first bracketed item for Navy, Air Force
and NASA projects, or choose the second bracketed
item for Army projects.

Government approval is required for submittals with a "G" designation;
submittals not having a "G" designation are for [Contractor Quality Control
approval.][information only. When used, a designation following the "G"
designation identifies the office that will review the submittal for the

Government.] Submit the following in accordance with Section 01 33 00
SUBMITTAL PROCEDURES:

SD-03 Product Data

As-Built Record of Equipment and Materials

[Two] [_____] copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

Warranty Management Plan

[One set] [[_____] sets] of the warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. Furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.

Warranty Tags

[Two] [_____] record copies of the warranty tags showing the layout and design.

Final Cleaning

[Two] [_____] copies of the listing of completed final clean-up items.

Spare Parts Data

[Two] [_____] copies of list that indicates manufacturer's name, part number, nomenclature, and stock level recommended for maintenance and repair. List those items that may be standard to the normal maintenance of the system.

SD-08 Manufacturer's Instructions

Preventative Maintenance and Condition Monitoring (Predictive Testing) and Inspection schedules with instructions that state when systems should be retested.

Define within the schedule the anticipated length of each test, test apparatus, number of personnel identified by responsibility, and a testing validation procedure permitting the record operation capability requirements. On each test feature; e.g., liter per second, rpm, kilopascal gpm, rpm, psi, provide a signoff blank for the Contractor and Contracting Officer. Within a remarks column of the testing validation procedure include references to operating limits of time, pressure, temperature, volume, voltage, current, acceleration, velocity, alignment, calibration, adjustments, cleaning, or special system notes. Delineate procedures for preventative maintenance, condition monitoring (predictive testing) and inspection, adjustment, lubrication and cleaning necessary to prevent failure.

Posted Instructions

SD-10 Operation and Maintenance Data

Submit Operation and Maintenance Manuals in accordance with paragraph entitled, "Operation and Maintenance," of this section.

SD-11 Closeout Submittals

Record Drawings

Drawings showing final as-built conditions of the project. [The final CADD record drawings must consist of one set of electronic CADD drawing files in the specified format, one set of mylar drawings, 2 sets of blue-line prints of the mylars, and one set of the approved working Record drawings.] [The manually prepared drawings must consist of 1 set of completed final as-built original transparency drawings, 2 sets of blue-line prints of the transparencies, and the approved marked working as-built prints.]

[Certification of EPA Designated Items; G

Form DD1354; G

Checklist for Form DD1354; G

1.3 PROJECT RECORD DOCUMENTS

1.3.1 Record Drawings

NOTE: The USACE policy on Record (As-Built) drawings is as follows:

a. Method of Preparation for DoD Projects. The construction Contractor will prepare the final Record drawings, whether in manual or CADD format.

b. Method of Preparation for Civil Works Projects. The preferred method of preparing the final Record drawings is by the construction Contractor. The management plan for the project must justify the preparation of the final Record drawings by any other method, such as by in-house personnel. Two such exceptions are "emergency construction" and operations work performed with hired labor. Revise the following specification paragraphs if as-builts are not to be done by the Contractor.

c. Customer Coordination. The method of producing the record drawings and their format will be discussed with the customer at the beginning of a project, reflected in the Memorandum of Understanding with the customer (if applicable) and the management plan for the project, and confirmed with the customer before issuing the construction solicitation.

This paragraph covers record drawings complete, as a requirement of the

contract. The terms "drawings," "contract drawings," "drawing files," "working record drawings" and "final record drawings" refer to contract drawings which are revised to be used for final record drawings showing as-built conditions.

1.3.1.1 Government Furnished Materials

**NOTE: Edit this paragraph to specify manually
prepared drawings or CADD files compatible with the
customers CADD system.**

One set of [mylar drawings revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for projects requiring manually prepared record drawings] [electronic CADD files in the specified software and format revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for projects requiring CADD file record drawings].

1.3.1.2 Working Record and Final Record Drawings

Revise [2] [_____] sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. Kept these working as-built marked drawings current on a weekly basis and at least one set available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction must be accurately and neatly recorded as they occur by means of details and notes. Prepare final record (as-built) drawings after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final record (as-built) drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final record drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the record drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. Show on the working and final record drawings , but not limited to, the following information:

- a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, show by offset dimensions to two permanently fixed surface features the end of each run including each change in direction on the record drawings. Locate valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Also record the average depth below the surface of each run.
- b. The location and dimensions of any changes within the building structure.
- c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from

contract plans.

- d. 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.
- e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.
- f. Changes or modifications which result from the final inspection.
- g. Where contract drawings or specifications present options, show only the option selected for construction on the final as-built prints.
- h. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, furnish a contour map of the final borrow pit/spoil area elevations.
- i. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.
- j. Modifications (include within change order price the cost to change working and final record drawings to reflect modifications) and compliance with the following procedures.
 - (1) Follow directions in the modification for posting descriptive changes.
 - (2) Place a Modification [Circle][Delta] at the location of each deletion.
 - (3) For new details or sections which are added to a drawing, place a Modification [Circle][Delta] by the detail or section title.
 - (4) For minor changes, place a Modification [Circle][Delta] by the area changed on the drawing (each location).
 - (5) For major changes to a drawing, place a Modification [Circle][Delta] by the title of the affected plan, section, or detail at each location.
 - (6) For changes to schedules or drawings, place a Modification [Circle][Delta] either by the schedule heading or by the change in the schedule.
 - (7) The Modification [Circle][Delta] size shall be 13 mm 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.3.1.3 Drawing Preparation

Modify the record drawings as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints must be neat, legible and accurate. These drawings are part of the permanent records of this project and must be returned to the Contracting

Officer after approval by the Government. Any drawings damaged or lost by the Contractor must be satisfactorily replaced by the Contractor at no expense to the Government.

[1.3.1.4 Computer Aided Design and Drafting (CADD) Drawings

NOTE: Edit this paragraph to specify CADD drawings compatible with the costumer's CADD system, providing the version where applicable.

Omit this paragraph if manually prepared drawings are required for the project.

Only employ personnel proficient in the preparation of CADD drawings to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings must be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols must be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, prepare them using the specified electronic file format applying [the same graphic standards specified for original drawings][~~TR-06-X~~]. The title block and drawing border to be used for any new final record drawings must be identical to that used on the contract drawings. Accomplish additions and corrections to the contract drawings using CADD files. The Contractor will be furnished "as-designed" drawings in [AutoCad Release [14] [2000i] [2004] [____]] [Microstation [J] [V8] [____]] format compatible with a [[Windows XP] [Windows NT] [____]] operating system. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). Provide all program files and hardware necessary to prepare final record drawings. The Contracting Officer will review final record drawings for accuracy and return them to the Contractor for required corrections, changes, additions, and deletions.

- a. Provide CADD "base" colors of red, green, and blue. Color code for changes as follows:
 - (1) Deletions (Red) - Over-strike deleted graphic items (lines), lettering in notes and leaders.
 - (2) Additions (Green) - Added items, lettering in notes and leaders.
 - (3) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes.
- b. Rename the Contract Drawing files in a manner related to the contract number (i.e., 98-C-10.DGN) as instructed in the Pre-Construction conference. Use only those renamed files for the Marked-up changes. All changes shall be made on the layer/level as the original item.
- c. When final revisions have been completed, show the wording "RECORD DRAWINGS / AS-BUILT CONDITIONS" followed by the name of the Contractor in letters at least ~~5 mm~~ ~~3/16 inch~~ high on the cover sheet drawing. Mark all other contract drawings either "Record" drawing denoting no revisions on the sheet or "Revised Record" denoting one or more revisions. Date original contract drawings in the revision block.
- d. Within [[10] [____]] days for contracts less than \$5 million] [20 days

for contracts \$5 million and above] after Government approval of all of the working record drawings for a phase of work, prepare the final CADD record drawings for that phase of work and submit two sets of blue-lined prints of these drawings for Government review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within [[7] [_____] days for contracts less than \$5 million] [10 days for contracts \$5 million and above] revise the CADD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within [[10] [_____] days for contracts less than \$5 million] [20 days for contracts \$5 million and above] of substantial completion of all phases of work, submit the final record drawing package for the entire project. Submit one set of electronic files on compact disc, read-only memory (CD-ROM), one set of mylars, two sets of blue-line prints and one set of the approved working record drawings. They must be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final record drawing files and marked prints as specified will be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final record drawings must be accomplished before final payment is made to the Contractor.

][1.3.1.5 Manually Prepared Drawings

NOTE: Edit this paragraph to specify manually prepared drawings.

Omit this paragraph if CADD drawings are required for the project.

Employ only personnel proficient in the preparation of manually prepared drawings to modify the original contract drawing or prepare additional new drawings. Additions and corrections to the contract drawings must be neat, clean and legible, shall be done to the same level of detail, and match the adjacent existing line work, and lettering being annotated in type, density, size and style. Drafting work must be done using the same medium (pencil, plastic lead or ink) that was employed on the original contract drawings and with graphite lead on paper base material. The Contracting Officer will review record drawings for accuracy and conformance to the above specified drafting standards. Corrections, changes, additions, and deletions required must meet these standards. The title block to be used for any new record drawings must be similar to that used on the original drawings.

- a. When final revisions have been completed, Letter or stamp each drawing with the words "RECORD DRAWINGS / AS-BUILT CONDITIONS" followed by the name of the Contractor in letters at least 5 mm 3/16 inch high. Mark original contract drawings either "Record" drawings denoting no revisions on the sheet or "Revised Record" denoting one or more revisions Date all original contract drawings in the revision block.
- b. Within [[10] [_____] days for contracts less than \$5 million] [20 days

for contracts \$5 million and above] after Government approval of all of the working record drawings for a phase of work, prepare the final record drawings for that phase of work and submit two sets of blue-line prints of these drawings for Government review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within [[7] [_____] days for contracts less than \$5 million] [10 days for contracts \$5 million and above] revise the drawings accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within [[10] [_____] days for contracts less than \$5 million] [20 days for contracts \$5 million and above] of substantial completion of all phases of work, submit the final record drawing package for the entire project. Submit two blue-line prints of these drawings and the return of the approved marked record prints, complete in all details. Paper prints and reproducible drawings will become the property of the Government upon final approval. Failure to submit final record drawings and marked prints, as required herein, will be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final record drawings must be accomplished before final payment is made to the Contractor.

1.3.1.6 Payment

No separate payment will be made for record drawings required under this contract, and all costs accrued in connection with such drawings are considered a subsidiary obligation of the Contractor.

1.3.2 As-Built Record of Equipment and Materials

NOTE: This paragraph is intended to provide data on equipment and materials incorporated in the construction of the project that cannot readily be determined after completion of construction. The data is expected to be of value for future maintenance, alteration, and repair work. The designer should predetermine the items on which data is required and list them in the DESCRIPTION column of the following form. A typical list of items would include such things as: roofing, insulation, and special wall coverings.

Furnish [one copy] [[_____]copies] of preliminary record of equipment and materials used on the project [15] [_____] days prior to final inspection. This preliminary submittal will be reviewed and returned [2] [_____] days after final inspection with Government comments. Submit [Two] [_____] sets of final record of equipment and materials [10] [_____] days after final inspection. Key the designations to the related area depicted on the contract drawings. List the following data:

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA

Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size	Where Used
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1.3.3 Final Approved Shop Drawings

Furnish final approved project shop drawings [30] [_____] days after transfer of the completed facility.

1.3.4 Construction Contract Specifications

Furnish final record (as-built) construction contract specifications, including modifications thereto, [30] [_____] days after transfer of the completed facility.

1.3.5 Real Property Equipment

Furnish a list of installed equipment furnished under this contract. Include all information usually listed on manufacturer's name plate. In the "EQUIPMENT-IN-PLACE LIST" include, as applicable, the following for each piece of equipment installed: description of item, location (by room number), model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. Furnish a draft list at time of transfer. Furnish the final list [30] [_____] days after transfer of the completed facility.

1.4 SPARE PARTS DATA

- a. Indicate manufacturer's name, part number, nomenclature, and stock level required for maintenance and repair. List those items that may be standard to the normal maintenance of the system.
- b. Supply [_____] items of each part for spare parts inventory. Provision of spare parts does not relieve the Contractor of responsibilities listed under the contract guarantee provisions.

1.5 PREVENTATIVE MAINTENANCE

Submit [Preventative Maintenance](#) and [Condition Monitoring \(Predictive Testing\)](#) and [Inspection](#) schedules with instructions that state when systems should be retested.

- a. Define the anticipated length of each test, test apparatus, number of personnel identified by responsibility, and a testing validation procedure permitting the record operation capability requirements within the schedule. Provide a signoff blank for the Contractor and Contracting Officer for each test feature; e.g., [liter per second](#), [rpm](#), [kilopascal](#) [gpm](#), [rpm](#), [psi](#). Include a remarks column for the testing validation procedure referencing operating limits of time, pressure, temperature, volume, voltage, current, acceleration, velocity, alignment, calibration, adjustments, cleaning, or special system notes. Delineate procedures for preventative maintenance, inspection, adjustment, lubrication and cleaning necessary to minimize corrective maintenance and repair.
- b. Repair requirements must inform operators how to check out, troubleshoot, repair, and replace components of the system. Include electrical and mechanical schematics and diagrams and diagnostic techniques necessary to enable operation and troubleshooting of the system after acceptance.

1.6 CERTIFICATION OF EPA DESIGNATED ITEMS

Submit the [Certification of EPA Designated Items](#) as required by FAR 52.223-9, "Certification and Estimate of Percentage of Recovered Material Content for EPA Designated Items". Include on the certification form the following information: project name, project number, Contractor name, license number, Contractor address, and certification. The certification will read as follows and be signed and dated by the Contractor. ["I hereby certify the information provided herein is accurate and that the requisition/procurement of all materials listed on this form comply with current EPA standards for recycled/recovered materials content. The following exemptions may apply to the non-procurement of recycled/recovered content materials: 1) The product does not meet appropriate performance standards; 2) The product is not available within a reasonable time frame; 3) The product is not available competitively (from two or more sources); 4) The product is only available at an unreasonable price (compared with a comparable non-recycled content product)."] [_____] Record each product used in the project that has a requirement or option of containing recycled [or biobased] content in accordance with Section [01 62 35](#) RECYCLED/RECOVERED MATERIALS, noting total price, total value of post-industrial recycled content, total value of post-consumer recycled content, [total value of biobased content,] exemptions (1, 2, 3, or 4, as indicated), and comments. Recycled [and biobased] content values may be determined by weight or volume percent, but must be consistent throughout.

1.7 WARRANTY MANAGEMENT

**NOTE: A warranty package based on a cost/benefit
determination will be established with the customer
at the beginning of a project.**

1.7.1 [Warranty Management Plan](#)

Develop a warranty management plan which contains information relevant to the clause Warranty of Construction in [_____] . At least 30 days before the planned pre-warranty conference, submit the warranty management plan for Government approval. Include within the warranty management plan all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan must be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due date and whether item has been submitted or was accomplished. Warranty information made available during the construction phase must be submitted to the Contracting Officer for approval prior to each monthly pay estimate. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period will begin on the date of project acceptance and continue for the full product warranty period. A joint 4 month and 9 month warranty inspection will be conducted, measured from time of acceptance, by the Contractor, Contracting Officer and the Customer Representative. Include within the warranty management plan , but not limited to, the following:

- a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subContractors,

manufacturers or suppliers involved.

- b. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.
- c. A list for each warranted equipment, item, feature of construction or system indicating:
 - (1) Name of item.
 - (2) Model and serial numbers.
 - (3) Location where installed.
 - (4) Name and phone numbers of manufacturers or suppliers.
 - (5) Names, addresses and telephone numbers of sources of spare parts.
 - (6) Warranties and terms of warranty. Include one-year overall warranty of construction. Items which have extended warranties must be indicated with separate warranty expiration dates.
 - (7) Cross-reference to warranty certificates as applicable.
 - (8) Starting point and duration of warranty period.
 - (9) Summary of maintenance procedures required to continue the warranty in force.
 - (10) Cross-reference to specific pertinent Operation and Maintenance manuals.
 - (11) Organization, names and phone numbers of persons to call for warranty service.
 - (12) Typical response time and repair time expected for various warranted equipment.
- d. The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.
- e. Procedure and status of tagging of all equipment covered by extended warranties.
- f. Copies of [instructions](#) to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

1.7.2 Performance Bond

The Contractor's Performance Bond [must remain effective throughout the construction period] [_____].

- a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.
- b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.
- c. Following oral or written notification of required construction warranty repair work, respond in a timely manner. Written verification will follow oral instructions. Failure of the Contractor to respond

will be cause for the Contracting Officer to proceed against the Contractor.

1.7.3 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction 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 for the execution of the construction warranty will be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, be continuously available, and be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.7.4 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. Submit a report on any warranty item that has been repaired during the warranty period. Include within the report the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframes specified, the Government will perform the work and backcharge the construction warranty payment item established.

- a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.
- b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.
- c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.
- d. The "Construction Warranty Service Priority List" is as follows:

Code 1-Life Safety Systems

- (1) Fire suppression systems.
- (2) Fire alarm system(s) in place in the building.

Code 1-Air Conditioning Systems

- (1) Recreational support.
- (2) Air conditioning leak in part of building, if causing damage.
- (3) Air conditioning system not cooling properly.

Code 1-Doors

- (1) Overhead doors not operational, causing a security, fire, or

safety problem.

- (2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors

- (1) Overhead doors not operational.
- (2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical

- (1) Power failure (entire area or any building operational after 1600 hours).
- (2) Security lights
- (3) Smoke detectors

Code 2-Electrical

- (1) Power failure (no power to a room or part of building).
- (2) Receptacle and lights (in a room or part of building).

Code 3-Electrical

Street lights.

Code 1-Gas

- (1) Leaks and breaks.
- (2) No gas to family housing unit or cantonment area.

Code 1-Heat

- (1) Area power failure affecting heat.
- (2) Heater in unit not working.

Code 2-Kitchen Equipment

- (1) Dishwasher not operating properly.
- (2) All other equipment hampering preparation of a meal.

Code 1-Plumbing

- (1) Hot water heater failure.
- (2) Leaking water supply pipes.

Code 2-Plumbing

- (1) Flush valves not operating properly.
- (2) Fixture drain, supply line to commode, or any water pipe leaking.
- (3) Commode leaking at base.

Code 3 -Plumbing

Leaky faucets.

Code 3-Interior

- (1) Floors damaged.
- (2) Paint chipping or peeling.
- (3) Casework.

Code 1-Roof Leaks

Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks

Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)
No water to facility.

Code 2-Water (Hot)
No hot water in portion of building listed.

Code 3-All other work not listed above.

1.7.5 Warranty Tags

At the time of installation, tag each warranted item with a durable, oil and water resistant tag approved by the Contracting Officer. Attached each tag with a copper wire and spray with a silicone waterproof coating. The date of acceptance and the QC signature must remain blank until the project is accepted for beneficial occupancy. Show the following information on the tag.

- a. Type of product/material_____.
- b. Model number_____.
- c. Serial number_____.
- d. Contract number_____.
- e. Warranty period_____from_____to_____.
- f. Inspector's signature_____.
- g. Construction Contractor_____.
- Address_____.
- Telephone number_____.
- h. Warranty contact_____.
- Address_____.
- Telephone number_____.
- i. Warranty response time priority code_____.

j. WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

[1.8 MECHANICAL TESTING AND BALANCING

**NOTE: Use for projects as directed by the
Government.**

All contract requirements of Section [23 09 53.00 20 SPACE TEMPERATURE CONTROL SYSTEMS] [23 09 23.13 20 BACnet DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC] must be fully completed, including all testing, prior to contract completion date. In addition, all contract requirements of Section 23 05 93 TESTING, ADJUSTING AND BALANCING must be fully completed, including testing and inspection, prior to contract completion date, except as noted

otherwise in Section 23 05 93. The time required to complete all work and testing as prescribed by Sections [23 09 53.00 20] [23 09 23.13 20], 23 05 93 and [_____] is included in the allotted calendar days for completion.

1.9 OPERATION AND MAINTENANCE MANUALS

Submit [6] [_____] copies of the project operation and maintenance manuals 30 calendar days prior to testing the system involved. Update and resubmit data for final approval no later than 30 calendar days prior to contract completion.

1.9.1 Configuration

Operation and Maintenance Manuals must be consistent with the manufacturer's standard brochures, schematics, printed instructions, general operating procedures, and safety precautions. Bind information in manual format and grouped by technical sections. Test data must be legible and of good quality. Light-sensitive reproduction techniques are acceptable provided finished pages are clear, legible, and not subject to fading. Pages for vendor data and manuals must have 10 millimeter 0.3937-inch holes and be bound in 3-ring, loose-leaf binders. Organize data by separate index and tabbed sheets, in a loose-leaf binder. Binder must lie flat with printed sheets that are easy to read. Caution and warning indications must be clearly labeled.

1.9.2 Training and Instruction

Submit classroom and field instructions in the operation and maintenance of systems equipment where required by the technical provisions. These services must be directed by the Contractor, using the manufacturer's factory-trained personnel or qualified representatives. Contracting Officer will be given 7 calendar days written notice of scheduled instructional services. Instructional materials belonging to the manufacturer or vendor, such as lists, static exhibits, and visual aids, must be made available to the Contracting Officer.

1.10 CLEANUP

NOTE: Natural cleaning materials include:
a. abrasive cleaners: substitute 1/2 lemon dipped in borax.
b. ammonia: substitute vinegar, salt and water mixture, or baking soda and water.
c. disinfectants: substitute 1/2 cup borax in gallon water.
d. drain cleaners: substitute 1/4 cup baking soda and 1/4 cup vinegar in boiling water.
e. upholstery cleaners: substitute dry cornstarch.

Provide final cleaning in accordance with ASTM E 1971. Leave premises "broom clean." Comply with GS-37 for general purpose cleaning and bathroom cleaning. Use only nonhazardous cleaning materials, including natural cleaning materials, in the final cleanup. Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition.

[Clean] [Replace] filters of operating equipment and comply with the Indoor Air Quality (IAQ) Management Plan. Clean debris from roofs, gutters, downspouts and drainage systems. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site. Recycle, salvage, and return construction and demolition waste from project in accordance with the Waste Management Plan. Promptly and legally transport and dispose of any trash. Do not burn, bury, or otherwise dispose of trash on the project site.

[1.10.1 Extraordinary Cleanup Requirements

NOTE: Do not add information related to facility regulations which are of a routine nature. Include unusual cleanup requirements.

The following cleanup requirements apply: [_____].

]1.11 REAL PROPERTY RECORD

NOTE: All DoD projects require Form DD1354 to be completed, made final, and submitted for entry into the applicable service database of real property. The Designer of Record must complete and attach a draft version of Form DD1354 (with cost data deleted) to the end of this section for subsequent revision by the construction Contractor, or US Naval Construction Forces, whichever is appropriate. Complete procedural instructions for design and construction government forces are provided at the checklist url below.

NOTE: Modify paragraph below if Command requires the activity contracting office to complete the form instead of the Contractor.

Near the completion of Project, but a minimum of 60 days prior to final acceptance of the work, complete, update draft attached to this section, and submit an accounting of all installed property on Form DD1354 "Transfer and Acceptance of Military Real Property." Contact the Contracting Officer for any project specific information necessary to complete the DD Form 1354. For information purposes, a blank DD Form 1354 (fill-able) in ADOBE (PDF) may be obtained at the following web site:

<http://www.dtic.mil/whs/directives/infomgt/forms/eforms/dd1354.pdf>

Submit the completed Checklist for Form DD1354 of Government-Furnished and Contractor-Furnished/Contractor Installed items. Attach this list to the updated DD Form 1354. Instructions for completing the form and a blank checklist (fill-able) in ADOBE (PDF) may be obtained at the following web site:

http://www.wbdg.org/ccb/DOD/UFC/ufc_1_300_08.pdf

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --