

SECTION 01 33 30

SUSTAINABILITY REQUIREMENTS

11/14

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-
CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 189.1 (2011; Errata 1-2 2012; INT 1 2013; Errata3-8 2013) Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings

GREEN BUILDING INITIATIVE (GBI)

Green Globes (2004) Green Globes(tm) US Green Building Rating System

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION
(SMACNA)

ANSI/SMACNA 008 (2007) IAQ Guidelines for Occupied Buildings Under Construction, 2nd Edition

U.S. DEPARTMENT OF ENERGY (DOE)

ISWG Guiding Principles (2008) High Performance and Sustainable Buildings Guidance

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED (2002; R 2005) Leadership in Energy and Environmental Design(tm) Green Building Rating System for New Construction (LEED-NC)

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 247 Comprehensive Procurement Guideline for Products Containing Recovered Materials

1.2 SUMMARY

This specification includes general requirements and procedures for this project to be constructed and documented per the federally mandated "Guiding Principles" (GP), Third Party Certification (TPC) requirements (if applicable), UFC 1-200-02, High Performance and Sustainable Building Requirements, and other requirements identified in this specification.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submittals with an "S" are for Government Approval and for inclusion in the Sustainability Notebook. Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REQUIREMENTS. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Preliminary Sustainability Notebook; G

Preliminary High Performance and Sustainable Building Checklist

SD-07 Certificates

Third Party Certification (TPC)

SD-11 Closeout Submittals

Final Sustainability Notebook; G

Final High Performance and Sustainable Building Checklist; G

Amended Final Sustainability Notebook; G

Third Party Certification Plaque and Certificates; G

1.4 GUIDING PRINCIPLES VALIDATION (GPV)

Provide construction related sustainability documentation to verify achievement of ISWG Guiding Principles Validation (GPV).

Provide the following for GPV:

- a. Refer to Attachment 1, HPSB Checklist at the end of this specification section.
- b. Obtain approval of any changes to the HPSB Checklist from the Contracting Officer at the Preconstruction Conference. Contracting Officer's approval establishes identified ISWG Guiding Principles Requirements as the project's

sustainability goals.

No variations or substitutions to the HPSB Checklist are allowed without written consent from the Contracting Officer. Immediately bring to the attention of the Contracting Officer any changes that impact meeting the approved **ISWG Guiding Principles** Requirements for this project and demonstrate that change will not incur additional construction cost or increase the life cycle cost.

c. Include all work required to incorporate the applicable **ISWG Guiding Principles** Requirements indicated on the HPSB Checklist and in this contract.

d. Include construction related documentation to maintain an up-to-date Sustainability Notebook. Supplement construction related documentation containing the following components;

- (1) HPSB Checklist
- (2) Sustainability Action Plan
- (3) Documentation illustrating Guiding Principle (GP) Requirements compliance
- (4) Commissioning Plan and Reports

1.4.1 Sustainability Action Plan

Include the following information in the Sustainability Action Plan:

- a. Contractor's planned method to achieve each construction relate GP requirement.
- b. For each designated construction related **ISWG Guiding Principles** Requirements that is not achieved, provide narrative explaining how mission or activity precludes achieving specific sustainability requirement or goal. Provide analysis of particular requirement and level to which project is able to comply.
- c. Name and contact information for: Contractor's Sustainability POC and other sustainability professional on the Contractor's Staff responsible for ensuring sustainability goals are accomplished and documentation is assembled.

1.4.2 Costs

Contractor is responsible for all costs associated with constructing and demonstrating that project complies with approved **ISWG Guiding Principles** Requirements.

1.4.3 Calculations

Provide calculations, product data, and certifications required in this section to demonstrate compliance with the **ISWG Guiding Principles** Requirements.

1.4.4 Third Party Certification (TPC) Documentation

This project has been designed for, and shall be developed for a target sustainable rating of gold and a minimum sustainable rating of silver in accordance with LEED NC Version 2009. This project is already registered with the TPC Organization. Provide construction related sustainability documentation, in the format required by the TPC Organization, to the Contracting Officer for approval, and for final approval by the TPC organization.

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Include the following:

- a. Refer to Attachment 2, TPC Checklist at the end of this specification section.
- b. Obtain approval of the TPC Checklist from the Contracting Officer at the Pre-Construction Conference.

No variations or substitutions to the approved TPC checklist are allowed without written consent from the Contracting Officer. Immediately bring to the attention of the Contracting Officer any project changes that impact meeting the approved TPC Requirements for this project. Demonstrate that change will not: incur additional construction cost; increase the life cycle cost; impact previous TPC Design Review; or impact required TPC certification level.

- c. Complete all work required to incorporate the applicable TPC Requirements.

- d. Maintain the construction related information, and provide replacement pages, in the Sustainability Notebook pertaining to additions and changes to the approved sustainability requirements. The Sustainability Notebook is in electronic format and is explained in paragraph SUSTAINABILITY NOTEBOOK. The Sustainability Notebook contains the following components in addition to the GPV components above:

- (1) TPC Checklist

- (2) Sustainability Action Plan

- (3) Completed TPC documentation for each identified prerequisite and credit. Forward to the Contracting Officer for approval.

- (4) Copy of all correspondence with the TPC organization.

- (5) Commissioning Plan

- e. Include the following information in the Sustainability Action Plan. Provide this TPC information in addition to the GPV Action Plan items above:

- (1) Contractor's planned method to achieve each TPC requirement.

- (2) For each required TPC credit that is attempted but not achieved, provide narrative explaining how mission or activity precludes achieving specific sustainability requirement or goal. Provide analysis of particular requirement and level to which project is able to comply.

- (3) Provide the commissioning plan and schedule for performance testing, and data collection to take place during first year of facility usage.

- (4) Name and contact information for: Contractor's Sustainability POC and other names of sustainability professionals on the Contractor's Staff responsible for ensuring TPC sustainability goals are accomplished and

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documentation is assembled.

f. Contractor is responsible for all costs associated with constructing and demonstrating that project complies with approved TPC requirements, including but not limited to:

(1) TPC coordination with Government's AE and other consultants, TPC website requirements, and management for construction related documentation.

(2) Construction work required to incorporate TPC prerequisites and credits.

(3) Submittals required to demonstrating compliance with Government approved TPC checklists.

g. Provide all calculations, product data, and certifications required in this contract to demonstrate compliance with the TPC Requirements of this section.

1.4.5 Third Party Certification (TPC)

Contractor is responsible for meeting all requirements to achieve Third Party Certification (TPC) level of LEED Silver, minimum, or other Government-approved equivalent TPC sustainability certification. An equivalent TPC organization must demonstrate equivalency for Government consideration, prior to use on the project. Third Party Certification is met when Government receives TPC organization certificate and plaque.

The TPC Certification requires the following:

a. Refer to Attachment 2, TPC Checklist at the end of this specification section.

b. Obtain approval of the TPC Checklist from the Contracting Officer at the Pre-Construction Conference.

No variations or substitutions to the approved TPC checklist are allowed without written consent from the Contracting Officer. Immediately bring to the attention of the Contracting Officer any project changes that impact meeting the approved TPC Requirements for this project. Demonstrate that change will not: incur additional construction cost; increase the life cycle cost; impact previous TPC Design Review; or impact required TPC certification level.

c. Complete all work required to incorporate the applicable TPC Requirements.

d. Maintain the construction related information, and provide replacement pages, in the Sustainability Notebook pertaining to additions and changes to the approved sustainability requirements. The Sustainability Notebook is in electronic format and is explained in paragraph SUSTAINABILITY NOTEBOOK. The Sustainability Notebook contains the following components in addition to the GPV components above:

(1) TPC Checklist

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(2) Completed TPC Online forms for each identified prerequisite and credit

(3) Copy of all correspondence with the TPC organization including proof of TPC registration

(4) Documentation illustrating compliance with TPC requirements

(5) TPC Award Certificate

(6) Commissioning Plan

e. Include the following information in the Sustainability Action Plan. Provide this TPC information in addition to the GPV Action Plan items above:

(1) Contractor's planned method to achieve each TPC requirement.

(2) For each required TPC credit that is attempted but not achieved, provide narrative explaining how mission or activity precludes achieving specific sustainability requirement or goal. Provide analysis of particular requirement and level to which project is able to comply.

(3) Name and contact information for: Contractor's Sustainability POC and other names of sustainability professionals on the Contractor's Staff responsible for ensuring TPC sustainability goals are accomplished and documentation is assembled

(4) Provide the plan and schedule for performance testing, data collection, and commissioning to take place during first year of facility usage.

f. Contractor is responsible for all costs associated with constructing and demonstrating that project complies with approved TPC requirements, including but not limited to:

(1) Final TPC review, certification and plaque fees

(2) Online (or offline with secure facilities) TPC management and documentation.

(3) Obtaining TPC certification based on Government-approved sustainability goals.

(4) Construction work required to incorporate TPC prerequisites and credits.

(5) Submittals required to demonstrate compliance with Government approved TPC checklists.

g. Provide all calculations, product data, and certifications required in this specification to demonstrate compliance with the TPC Requirements.

h. Provide all online (or offline, with secure facilities) TPC management and documentation.

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- i. Contractor is responsible for all required responses to TPC.
- j. Provide TPC Plaque and Certificates. Use format below to create the Plaque, Certificate and Letter of Congratulations. Forward to parties designated by Contracting Officer:

(1) Plaque:

Name: Final Building Name. If unknown, provide Form DD1391 Project Name.

(2) Certificate:

Project Title, first line: P-(X); Form DD1509 Project Name).

Project Title, second line: UIC (Installation code)

(3) Letter Congratulations:

Address letter to Facility's Installation commander Name. Address the letter to an individual person.

1.5 SUSTAINABILITY SUBMITTALS

Provide documentation in the Sustainability Notebook and the HPSB Checklist to indicate compliance with the sustainability requirements of the project.

Submit the GPV and TPC sustainability documentation required in this specification as "S" submittals. Highlight GPV and TPC compliance data in "S" submittal.

1.5.1 SUSTAINABILITY NOTEBOOK

Provide and maintain a comprehensive Sustainability Notebook to document compliance with the sustainability requirements identified in the approved HPSB and TPC Checklist. Sustainability Notebook must contain all required data to support full compliance with the **ISWG Guiding Principles** Requirements and TPC requirements. Sustainability Notebook is in the form of an Adobe PDF file; bookmarked at each **ISWG Guiding Principles** Requirement, TPC requirement, and sub-bookmarked at each document. Match format to **ISWG Guiding Principles** numbering system indicated herein. Maintain up to date information, spreadsheets, templates, etc. with each current submittals. For TPC projects, provide a second Table of contents using TPC numbering system. Locate documentation unique to TPC here. Where TPC documentation would repeat GP documentation, insert note referring reviewer to GP documentation.

Contracting Officer may deduct from the monthly progress payment accordingly if Sustainability Notebook information is not current, until information is updated and on track per project goals.

1.5.1.1 Sustainability Notebook Submittal Schedule

Provide Sustainability Notebook Submittals at the following milestones of the project:

- a. **Preliminary Sustainability Notebook**

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Submit preliminary Sustainability Notebook for approval at the Pre-construction conference. Include [Preliminary High Performance and Sustainable Building Checklist](#).

b. Construction Progress Meetings. Update GP and TPC documentation in the Sustainability Notebook and TPC Online tool for each meeting.

c. [Final Sustainability Notebook](#)

Submit updated Sustainability Notebook within 60 days after the Beneficial Occupancy Date (BOD). Final progress payment retainage maybe held by Contracting Officer until final sustainability documentation is complete. Submit three (3) electronic copies of the Final Sustainability Notebook on DVDs to the Government. Include [Final High Performance and Sustainable Building Checklist](#).

d. [Amended Final Sustainability Notebook](#)

Amend and resubmit the Final Sustainability Notebook to include commissioning, testing and balancing, and collection of performance requirements. Submit three (3) final electronic copies of the Amended Final Sustainability Notebook Submittal on DVDs to the Government no longer than 30 days after the GP, TPC designated data collection period.

1.5.2 HIGH PERFORMANCE SUSTAINABLE BUILDING (HPSB) CHECKLIST

Provide construction documentation that provides proof of and supports compliance with the completed HBSP Checklist.

Submit an updated copy of the HPSB Checklist with each Sustainability Notebook submittal. Attach HPSB Checklist to **NEED # 4** Real Property Record Submittal.

1.6 DOCUMENTATION REQUIREMENTS

Third Party Certification requirements or credits are mandatory when they have requirements that match a Guiding Principle Requirement. Documentation used to demonstrate TPC compliance may be used to demonstrate GP compliance.

Incorporate each of the following [ISWG Guiding Principles](#) Requirements into project construction; and provide documentation that proves compliance with each listed requirement. Items below are organized according to the [ISWG Guiding Principles](#). For projects that require TPC, refer to Third Party Certifier's reference manuals for TPC requirements.

1.6.1 Commissioning

Work with the Government's Commissioning Authority (CxA) to achieve requirements of the Commissioning plan and other construction document requirements at each stage of commissioning. Maintain up-to-date records of commissioning activities in the Sustainability Notebook.

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Using a qualified commissioning authority, develop and incorporate commissioning requirements into the construction documents. Develop and implement a commissioning plan. Verify the installation and performance of the systems to be commissioned, including no less than: HVAC&R systems and associated controls, lighting and daylighting controls, domestic hot water systems, and renewable energy systems. Complete a summary commissioning report.

Provide the following documentation:

- a. Commissioning Authority certifications
- b. Commissioning Authority qualifications
- c. Commissioning meeting minutes during construction
- d. Commissioning Plan, updated at each project stage
- e. For each commissioned system, completed pre-startup checklist, completed functional verification checklist and performance verification test report.
- f. Final commissioning report and narrative demonstrating project's fundamental commissioning requirements have been successfully executed

1.6.2 Energy Efficient Equipment

Provide only energy-using equipment that is Energy Star rated, or has the Federal Energy Management Program (FEMP) recommended efficiency. Where Energy Star or FEMP recommendations have not been established, provide equipment with efficiency in the top 25 percent for the type of equipment procured. Provide only energy using equipment that meets FEMP requirements for low standby power consumption. Energy efficient equipment can be found at: <http://www1.eere.energy.gov/femp/> and <http://www.energystar.gov/>.

Provide the following documentation:

Proof that equipment is energy efficient and complies with the cited requirements.

1.6.3 Benchmarking

Provide report of initial actual energy performance with the energy design targets.

Provide the following documentation:

Prefinal Performance Report with data collected from the first 60 days of operation of the facility after Beneficial Occupancy Date (BOD). Submit this information with the Final Sustainability Notebook Submittal.

1.6.4 Reduce Volatile Organic Compounds (VOC)

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Provide materials and products with low pollutant emissions, including composite wood products, adhesives, sealants, interior paints and finishes, carpet systems, and furnishings. Meeting the requirements of LEED BD&C Manual v2009 demonstrates compliance, including:

a. Adhesives and sealants applied within the weatherproofing system shall comply with SCAQMD Rule #1168 VOC limits.

b. Paints and coatings applied within the weatherproofing system shall comply with GS-11, GC-03, and SCAQMD Rule #1113 VOC limits.

c. Flooring systems, including applicable adhesives, shall comply with the following:

(1) Carpets - CRI's Green Label Plus program; carpet pads - CRI's Green Label program

(2) hard surface flooring - FloorScore; sealers, stains, and floor finishes - SCAQMD Rule #1113; tile setting adhesives SCAQMD Rule #1168

d. All composite wood, agrifiber products, and wood glues are not to contain added urea formaldehyde resins.

Provide the following documentation:

a. Demonstrate that materials do not exceed maximum VOC emissions of cited standards. VOC averaging is allowed where coatings are subject to human contact or harsh environmental conditions.

b. Demonstrate that flooring materials comply with VOC emissions of cited standards.

c. Demonstrate that composite wood and agrifiber products and associated laminating adhesives contain no added urea-formaldehyde.

d. Demonstrate that furniture and seating is third-party certified for low emissions.

e. Create and maintain a list of above listed products used on the project within the building vapor barrier. Demonstrate how product meets cited standards.

1.6.5 Indoor Air Quality During Construction

Prior to construction, create indoor air quality plan. Implement IAQ plan during construction and flush building air before occupancy.

a. Construction submittal documentation required:

(1) Provide IAQ management plan for the construction and preoccupancy phases of the building. For renovation of occupied existing buildings, the plan

must be developed and implemented in accordance with ANSI/SMACNA 008-2008 IAQ Guidelines for Occupied Buildings Under Construction.

(2) Provide required documentation showing that after construction ends and prior to occupancy, new HVAC filters were installed, and building air was flushed out in accordance with UFC 1-200-02, with maximum outdoor air consistent with achieving relative humidity no greater than 60 percent.

Construction Documentation: Six photographs of each SMACNA measure at three different times during the construction period, along with a brief description of the SMACNA approach employed, documenting implementation of the indoor-air quality management measures, such as protection of ducts and on-site stored or installed absorptive materials.

b. Air-Quality Testing:

(1) Conduct baseline indoor-air-quality testing, after construction ends and prior to occupancy, using testing protocols consistent with the EPA's "Compendium of Methods for the Determination of Air Pollutants in Indoor Air," and as additionally detailed in the USGBC's "Green Building Design and Construction Reference Guide."

(2) Demonstrate that the contaminant maximum concentrations listed below are not exceeded:

- 1) Formaldehyde: 27 ppb.
- 2) Particulates (PM10): 50 micrograms/cu. m.
- 3) Total Volatile Organic Compounds (TVOC): 500 micrograms/cu. m.
- 4) 4-Phenylcyclohexene (4-PH): 6.5 micrograms/cu. m.
- 5) Carbon Monoxide: 9 ppm and no greater than 2 ppm above outdoor levels.

(3) For each sampling point where the maximum concentration limits are exceeded, conduct additional flush-out with outside air and retest the specific parameter(s) exceeded to indicate the requirements are achieved. Repeat procedure until all requirements have been met. When retesting noncomplying building areas, take samples from same locations as in the first test.

(4) Air-sample testing shall be conducted as follows:

- 1) All measurements shall be conducted prior to occupancy but during normal occupied hours, and with building ventilation system starting at the normal daily start time and operated at the minimum outside air flow rate for the occupied mode throughout the duration of the air testing.
- 2) Building shall have all interior finishes installed including, but not limited to, millwork, doors, paint, carpet, and acoustic tiles. Nonfixed furnishings such as workstations and partitions are encouraged, but not required, to be in place for the testing.
- 3) Number of sampling locations varies depending on the size of building and number of ventilation systems. For each portion of building served by a separate ventilation system, the number of

sampling points shall not be less than one per 25,000 sq. ft. (2300 sq. m) or for each contiguous floor area, whichever is larger, and shall include areas with the least ventilation and greatest presumed source strength.

4) Air samples shall be collected between 3 and 6 feet (0.9 and 1.8m) from the floor to represent the breathing zone of occupants, and over a minimum four-hour period.

1.6.6 Recycled Content

Provide materials on this project such that post-consumer recycled content plus one-half pre-consumer recycled content for the Project constitutes a minimum of 20% of cost of materials used for the Project. In addition, comply with 40 CFR 247. Refer to <http://www.epa.gov/cpg/products.htm> for assistance identifying products cited in 40 CFR 247.

Provide the following documentation:

a. Total amount of recycled content contained in building materials as a percentage of total cost of all building materials on the project (mechanical, electrical, and plumbing components, and specialty items such as elevators excluded).

b. Substitutions: In case of conflict between project's recycled content goals and individual technical section requirements, Contractor may submit for Government approval, proposed alternative products or systems that provide equivalent performance and appearance and have greater contribution to project recycled content requirements. For all such proposed substitutions, submit with the Sustainability Action Plan accompanied by product data demonstrating equivalence.

c. Provide materials on this project such that a minimum of 10% of the cost of materials used for the Project are manufactured and extracted within 500 miles of the project site.

1.6.7 Bio-Based Products

Utilize products and material made from biobased materials to the maximum extent possible without jeopardizing the intended end use or detracting from the overall quality delivered to the end user. Use only supplies and materials of a type and quality that conform to applicable specifications and standards.

Biobased products that are designated for preferred procurement under the USDA BioPreferred Program must meet the required minimum biobased content. Refer to <http://www.biopreferred.gov> for the product categories and BioPreferred Catalog.

Provide the following documentation:

a. For biobased products used on this project, provide biobased content and biobased source of material. Indicate name of the manufacturer, cost of each product and the use of each product on this project.

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b. Provide materials on this project such that a minimum of 50% of the cost of woodbased materials shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC-STD-01-001, "FSC Principles and Criteria for ForestStewardship.

1.6.8 Landfill Disposal

Divert construction debris from landfill disposal in accordance with Section 01 74 19 Construction and Demolition Waste Management of the Federal Green Construction Guide for Specifiers, available at <http://fedgreenspecs.wbdg.org>

Provide the following documentation:

Documentation showing total amount of construction debris diverted from landfill as 75 percent of all construction debris on the project.

Include project's Construction Waste Management Plan and all dumpster haul tickets.

1.6.9 Ozone Depleting Substances

Eliminate the use of ozone depleting substances during and after construction where alternative environmentally preferable products are available and in accordance with either the Montreal Protocol and Title VI of the Clean Air Act Amendment of 1990 or equivalent overall air quality benefits that take into account lifecycle impacts. Meet the requirements of ASHRAE 189.1 Section 9.3.3 Refrigerants (except for fire suppression system requirements covered elsewhere in this specification).

Provide the following documentation:

a. MSDS sheets for all refrigerants provided

b. Products that meet the criteria of U.S. EPA Significant New Alternatives Policy, available at <http://www.epa.gov/ozone/snap/index.html>.

1.6.10 Validation and Certification Restrictions

The purchase of renewable energy credits (RECs) to meet project sustainability goals is prohibited.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 SUSTAINABILITY COORDINATION

3.1.1 Coordinating Sustainability Documentation Progress

Provide sustainability focus and coordination at the following meetings to achieve sustainability goals. Contractor's designated TPC accredited sustainability professional responsible for GP and TPC documentation must

participate in the following meetings to coordinate documentation completion.

a. Pre-Construction Conference: Discuss the following: TPC and HPSB Checklists, Sustainability Action Plan, Construction submittal requirements and schedule, individuals responsible for achieving each Guiding Principle Requirement and TPC prerequisite and credit.

b. Construction Progress Meetings: Review GP and TPC sustainability requirements with project team including contractor and sub-contractor representatives. Demonstrate GP and TPC documentation is being collected and updated to the Sustainability Notebook and TPC Online tool.

(1) Facility Turnover Meetings: Review Sustainability Notebook, and TPC Online submission for completeness and identify any outstanding issues relating to final documentation requirements.

(2) Final Sustainability Notebook Review

3.2 SUSTAINABILITY AWARD

Finalize the sustainability certification process and obtain the TPC Certification Plaque and Certificates, indicating completion of the projects sustainability goals.

3.2.1 Third Party Certification Plaque and Certificates

Obtain and install plaque and provide one original framed copy of the certificate. Mount certificates in 1 inch deep metal frames, with double matt, and wire hangers. Obtain three additional certificates, and deliver to Contractor Officer, unless otherwise instructed. Hang the Plaque in a prominent interior location approved by the Contracting Officer.

-- End of Section -