**NOTES TO ARCHITECT/ENGINEER (A/E) & DAS/CS PROJECT MANAGER:**

This version of the Division 01 General Requirements is for **ALL** CT Department of Administrative Services (DAS) Construction Services (CS) **Design-Bid-Build (DBB) AND Construction Manager at Risk (CMR) Capital Construction Projects.**

IMPORTANT NOTE: Section 01 57 30 Indoor Environmental Control includes requirements for indoor air quality management during construction. Coordinate with requirements of other sections and verify that products and installation methods specified in other sections are environmentally appropriate. Edit to suit location and project.

IMPORTANT NOTE: Section 01 81 13 Sustainable Design Requirements includes general sustainable design requirements such as participation in a green building rating program. It includes a specific credits/points targeted in the designated green building rating program. Specific project requirements, including submittal requirements related to a green building rating program, should be identified in the appropriate technical sections. To cite project requirements in two locations (i.e. in a Technical Section and in a Division 01 Section) risks redundancies and conflicts that could cause significant cost impacts, design impacts, performance impacts, and/or scheduling impacts for the project. To cite technical project requirements, such as VOC limitations for paint, only in a Division 01 Section risks oversight of the project requirements by the affected trades. Further, it tends to isolate the sustainable design requirements rather than integrating them into the project and design process. Edit paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

**EDITING:** To Show the Editing Notes in this MS Word document the show/hide symbol (¶) button must be must turned on in the MS Word Toolbar. To print this document show/hide symbol (¶) must be turned off in the MS Word Toolbar, this will enable the document to indicate the correct number of total pages.

**TEXT:** The below **blue text** are project specific information that must be completed by the A/E as applicable to the specific project. When complete change **blue text** to **black text.** The ***bold and italicized text*** is for example purposes only and must be modified and edited by the A/E to make it project specific. For **text boxes**, left click on **Insert** and then insert project specific information over the word **Insert** in the underlined space.

**TABLES:** To view the Table Grid in this MS Word document, click inside any table, then go to the **Table Tools > Layout** tab, **Table** group, and click **View Gridlines.**

**HEADERS: The header** for each page of the Project Manual shall match the format, font (Arial), size (9 pt), font style (BOLD & CAPITALIZED) and line borders, of the header shown herein. The header of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein.

**FOOTERS: The footer** for each page of the Project Manual shall match the format, font (Arial), size (9 pt), font style (BOLD & CAPITALIZED) and line borders, of the footer shown herein. The footer shall contain the project number in the right hand side as shown herein. The revision date in the left side of the footer is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

**SECTIONS AND PARAGRAPHS:** If a **Section** is not part of the project scope, **do not use** the Section in the General Requirements. Check “**NOT USED**” in the Table of Contents. **DO NOT delete** the Section title from the Table of Contents.

If a **Paragraph** is not applicable to the project, **delete the contents** of the Paragraph and renumber the subsequent Paragraphs. Edit **Paragraphs** carefully to reflect specific project requirements. DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE and re-number as necessary.

**GENERAL CONDITIONS:** Please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

**DIVISION 01 SECTIONS** are the organizational key of the Project Manual. All revisions to this Division are the responsibility of the A/E. Division 01 must be closely coordinated with Division 00, Divisions 02 through 49, Division 50 (Project-Specific Available Information), the Drawings, and the Department’s Consultant Bid Data Statement (Form 6005, to be filled out by the A/E for bidding).

**IMPORTANT NOTE REGARDING “HIDDEN TEXT”:**

Each document contains Editing Notes in the form of “hidden text”. The Editing Notes assist the Architect in modifying and editing the document to make it project-specific. In order to show the “hidden text”, click the **Home** tab, and in the **Paragraph** group, click the **Show/Hide** symbol (¶). **Turn off** the Show/Hide symbol (¶) **before printing the document** in order to indicate the correct number of pages. **DELETE THIS NOTE.**

**IMPORTANT NOTE REGARDING FORMATTING:**

Insert a blank page at the end of all *odd numbered* specification sections that states “THIS PAGE INTENTIONALLY LEFT BLANK”. **DELETE THIS NOTE.**

PART 1- GENERAL

## 1.1 RELATED DOCUMENTS

#### **A.** Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 specification sections, apply to this section.

## 1.2 SUMMARY

#### **A.** **Section Includes:**

#### 1. General requirements and procedures for compliance with certain **[High Performance Building (HPB) regulations prerequisites]** [**USGBC LEED for Building Design and Construction (LEED BD+C) prerequisites and credits needed for project to obtain LEED** [**Silver**] [**Gold**] [**Platinum**] **certification using the latest version of LEED BD+C**] [**GBI Green Globes points needed for project to obtain** [**two (2)**] [**three (3)**] [**four (4)**] **Globes certification using Green Globes Version 1.0**].

##### a. Other **[HPB regulations prerequisites]** [**LEED prerequisites and credits**] [**Green Globes points**] needed to obtain certification depend on material selections and may not be specifically identified as [**LEED**] [**Green Globes**] requirements. Compliance with requirements needed to obtain [**LEED prerequisites and credits**] [**Green Globes points**] may be used as one (1) criterion to evaluate substitution requests and comparable product requests.

##### b. Additional **[HPB regulations prerequisites]** [**LEED prerequisites and credits**] [**Green Globes points**] needed to obtain the indicated certification depend on Architect's design and other aspects of project that are not part of the Work of the Contract.

### **B. Related Sections:** The following Sections contain requirements that relate to this Section:

#### 1. Divisions 01 through 49 sections for **[HPB regulations]** [**LEED**] [**Green Globes**] requirements specific to the work of each of these sections. Requirements may or may not include reference to **[HPB regulations]** [**LEED**] [**Green Globes**].

## 1.3 DEFINITIONS

#### **A.** **Chain-of-Custody Certificates:** Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship." Certificates shall include evidence that manufacturer is certified for chain of custody by an FSC-accredited certification body.

#### **B. LEED:** Leadership in Energy & Environmental Design.

#### **C.** **Rapidly Renewable Materials:** Materials made from plants that are typically harvested within a 10-year or shorter cycle. Rapidly renewable materials include products made from bamboo, cotton, flax, jute, straw, sunflower seed hulls, vegetable oils, or wool.

#### **D.** **Regional Materials:** Materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of project site. If only a fraction of a product or material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value.

#### **E.** **Recycled Content:** The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.

##### **F.** "Post-consumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.

##### **G.** "Pre-consumer" material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

## 1.4 SUBMITTALS

#### **A.** Submit under provisions of Division 01 Section 01 33 00 "Submittal Procedures.”

#### **B.** **General:** Submit additional **[HPB regulations]** [**LEED**] [**Green Globes**] submittals required by other specification sections.

#### **C.** **[HPB regulations]** [**LEED**] [**Green Globes**] submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated **[HPB regulations]** [**LEED**] [**Green Globes**] requirements.

#### **D. Project Materials Cost Data:** Provide statement indicating total cost for building materials used for project, excluding mechanical, electrical, and plumbing components, and specialty items such as elevators and equipment. [**Include statement indicating total cost for wood-based materials used for project.**]

#### **E.** **[HPB regulations]** [**LEED**] [**Green Globes**] **Action Plans:** Provide preliminary submittals within [**seven (7)**] [**14**] [**30**] [**60**] days of date established for [**commencement of the Work**] [**the Notice to Proceed**] [**the Notice of Award**] indicating how the following requirements will be met:

##### 1. Waste Management Plan complying with Division 01 Section 01 74 19 "Construction Waste Management and Disposal."

##### 2. Salvaged and Refurbished Materials List: Identify each material that will be salvaged or refurbished, including its source and cost.

##### 3. Recycled Content Materials List: Indicate cost, post-consumer recycled content, and pre-consumer recycled content for each product having recycled content.

##### 4. Certified Wood Products List: Indicate each product containing certified wood, including its source and cost of certified wood products.

##### 5. Construction Indoor-air-quality Management Plan complying with Division 01 Section 01 57 40 "Construction IAQ Management Plan."

#### **F.** **[HPB regulations]** [**LEED**] [**Green Globes**] **Progress Reports:** Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with **[HPB regulations]** [**LEED**] [**Green Globes**] action plans for the following:

##### 1. Waste Reduction Progress Reports complying with Division 01 Section 01 74 19 "Construction Waste Management and Disposal."

##### 2. Salvaged and refurbished materials.

##### 3. Recycled content.

##### 4. Regional materials.

##### 5. Certified wood products.

#### **G.** **[HPB regulations]** [**LEED**] [**Green Globes**] **Documentation Submittals:**

##### 1. Product data and wiring diagrams for sensors and data collection system used to provide continuous metering of building energy-consumption performance over [**time**] [**a period of time of not less than one (1) year of post-construction occupancy**].

##### 2. Waste Management Plan: Comply with Division 01 Section 01 74 19 "Construction Waste Management and Disposal."

##### 3. Salvaged and Refurbished Materials: Receipts for salvaged and refurbished materials used for project, indicating sources and costs for salvaged and refurbished materials.

##### 4. Recycled Content: Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.

##### 5. Regional Materials: Product data indicating location and distance from project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

##### 6. Certified Wood Products: Product data and chain-of-custody certificates for products containing certified wood. Include statement indicating cost for each certified wood product.

##### 7. Indoor Environmental Quality:

###### a. Construction indoor-air-quality management plan.

###### b. Product data for temporary filtration media.

###### c. Product data for filtration media used during occupancy.

###### d. Construction Documentation: **Six (6)** photographs at **three (3)** 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.

##### 8. Indoor Environmental Quality:

###### a. Signed statement describing the building air flush-out procedures including the dates when flush-out was begun and completed and statement that filtration media was replaced after flush-out.

###### b. Product data for filtration media used during flush-out and during occupancy.

###### c. Report from testing and inspecting agency indicating results of indoor-air-quality testing and documentation showing compliance with indoor-air-quality testing procedures and requirements.

##### 9. Adhesives and Sealants: Product data for adhesives and sealants used inside the weatherproofing system indicating VOC content of each product used. Indicate VOC content in g/L.

##### 10. Paints and Coatings: Product data for paints and coatings used inside the weatherproofing system indicating VOC content of each product used. Indicate VOC content in g/L.

##### 11. Carpet Systems: Product data for carpet and carpet cushion installed in the building interior indicating that the product complies with the CRI Green Label Plus testing program. Product data for carpet adhesives used in the building indicating VOC content in g/L.

##### 12. Composite Wood, Agrifiber or Wood Glues: Product data for products containing composite wood or agrifiber products or wood glues indicating that they do not contain urea-formaldehyde resin.

PART 2 - PRODUCTS

## 2.1 SALVAGED AND REFURBISHED MATERIALS

#### **A. Salvaged or Refurbished Materials:** Provide salvaged or refurbished materials for [**five (5)**] [**10**] percent of building materials (by cost). The following materials may be salvaged or refurbished materials:

##### 1. [**Insert list of materials**].

## 2.2 RECYCLED CONTENT OF MATERIALS

#### **A. Recycled Content Materials:** Provide building materials with recycled content such that post-consumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum of [**10**] [**20**] percent of cost of materials used for project.

##### 1. Cost of post-consumer recycled content of an item shall be determined by dividing weight of post-consumer recycled content in the item by total weight of the item and multiplying by cost of the item.

##### 2. Cost of post-consumer recycled content plus one-half of pre-consumer recycled content of an item shall be determined by dividing weight of post-consumer recycled content plus one-half of pre-consumer recycled content in the item by total weight of the item and multiplying by cost of the item.

##### 3. Do not include mechanical and electrical components in the calculation.

## 2.3 REGIONAL MATERIALS

#### **A. Regional Materials:** Provide [**10**] [**20**] percent of building materials (by cost) that are regional materials.

## 2.4 CERTIFIED WOOD

#### **A. Certified Wood Products:** Provide a minimum of 50 percent (by cost) of wood-based materials that are 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 Forest Stewardship."

##### 1. Wood-based materials include, but are not limited to, the following materials when made from wood, engineered wood products, or wood-based panel products:

###### a. Rough carpentry.

###### b. Miscellaneous carpentry.

###### c. Heavy timber construction.

###### d. Wood decking.

###### e. Metal-plate-connected wood trusses.

###### f. Structural glued-laminated timber.

###### g. Finish carpentry.

###### h. Architectural woodwork.

###### i. Wood paneling.

###### j. Wood veneer wall covering.

###### k. Wood flooring.

###### l. Wood lockers.

###### m. Wood cabinets.

## 2.5 LOW-EMITTING MATERIALS

#### **A. Adhesives, Sealants, and Sealant Primers:** For field applications that are inside the weatherproofing system, use adhesives, sealants, and sealant primers that comply with the South Coast Air Quality Management District (SCAQMD) Rule #1168 effective July 1, 2005 and the rule amendment dated January 7, 2005.

##### 1. Aerosol Adhesives: Comply with the requirements of the Green Seal Standard for Commercial Adhesives GS-36 in effect on October 19, 2000.

#### **B. Paints and Coatings:** For field applications that are inside the weatherproofing system, use paints and coatings that comply with the following limits for VOC content:

##### 1. Architectural Paints, Coatings, and Primers Applied to Interior Walls and Ceilings: Do not exceed the VOC content limits established in Green Seal Standard GS-11, Paints, First Edition dated May 20, 1993:

###### a. Flats: 50 g/L.

###### b. Non-flats: 150 g/L.

##### 2. Anti-corrosive and Anti-rust Paints Applied to Ferrous Metal Substrates: Do not exceed the VOC content limit of 250 g/L established in Green Seal Standard GC-03, Anti-Corrosive Paints, Second Edition dated January 7, 1997.

##### 3. Clear Wood Finishes, Floor Coatings, Stains, Sealers, and Shellacs Applied to Interior Elements: Do not exceed the VOC content limits established in the South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings in effect on January 1, 2004:

###### a. Clear Wood Finishes: Varnish - not more than 350 g/L; Lacquer - not more than 550 g/L.

###### b. Floor Coatings: VOC not more than 100 g/L.

###### c. Sealers: Waterproofing sealers - not more than 250 g/L; Sanding sealers - not more than 275 g/L; All other sealers - not more than 200 g/L.

###### d. Shellacs, Clear: VOC not more than 730 g/L.

###### e. Shellacs, Pigmented: VOC not more than 550 g/L.

###### f. Stains: VOC not more than 250 g/L.

#### **C. Carpet Systems:**

##### 1. Carpet: Meet the requirements of the Carpet and Rug Institute’s (CRI) Green Label Plus Program.

##### 2. Carpet Cushion: Meet the requirements of CRI’s Green Label Program.

##### 3. Carpet Adhesive: VOC content of not more than 50 g/L.

#### **D. Composite Wood and Agrifiber Products:** Do not use composite wood or agrifiber products or adhesives that contain added urea-formaldehyde resin.

PART 3 - EXECUTION

## 3.1 [REFRIGERANT] [AND] [CLEAN-AGENT FIRE-EXTINGUISHING-AGENT] REMOVAL

#### **A. Fundamental Refrigerant Management:** Remove CFC-based refrigerants from existing HVAC&R equipment indicated to remain and replace with refrigerants that are not CFC based. Replace or adjust existing equipment to accommodate new refrigerant as described in Division 23 sections.

#### **B. Enhanced Refrigerant Management:** Remove clean-agent fire-extinguishing agents that contain HCFCs or halons and replace with agent that does not contain HCFCs or halons. Refer to Division 21 sections additional requirements.

## 3.2 MEASUREMENT AND VERIFICATION

#### **A. Measurement and Verification:** Implement measurement and verification plan consistent with [**Option B - Energy Conservation Measure Isolation**] [**Option D - Calibrated Simulation, Savings Estimation Method 2**] in the EVO's "International Performance Measurement and Verification Protocol (IPMVP) Volume III: Concepts and Options for Determining Energy Savings in New Construction," and as further defined by the following:

##### 1. [**Insert measurement and verification plan that has been submitted for credit**].

#### **B.** If not already in place, install metering equipment to measure energy usage. Monitor, record, and trend log measurements.

#### **C.** Evaluate energy performance and efficiency by comparing actual to predicted performance.

#### **D.** Measurement and verification period shall cover at least one year of post-construction occupancy.

## 3.3 CONSTRUCTION WASTE MANAGEMENT

#### **A. Construction Waste Management:** Comply with Division 01 Section 01 74 19 "Construction Waste Management and Disposal."

## 3.4 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

#### **A. Construction IAQ Management Plan During Construction:** Comply with SMACNA's "SMACNA IAQ Guideline for Occupied Buildings under Construction."

##### 1. If Owner authorizes use of permanent heating, cooling, and ventilating systems during construction period as specified in Division 01 Section 01 50 00 "Temporary Facilities and Controls", install filter media having a MERV 8 according to ASHRAE 52.2 at each return-air inlet for the air-handling system used during construction.

##### 2. Replace all air filters immediately prior to occupancy.

#### **B. Construction IAQ Management Plan Before Occupancy:** [**Comply with one of the following requirements:**]

##### 1. After construction ends, prior to occupancy and with all interior finishes installed, perform a building flush-out by supplying a total volume of 14000 cu ft of outdoor air per sq ft of floor area while maintaining an internal temperature of at least 60 degrees F and a relative humidity no higher than 60 percent.

###### a. [**Insert operating requirements**].

##### 2. If occupancy is desired prior to flush-out completion, the space may be occupied following delivery of a minimum of 3500 cu ft of outdoor air per sq ft of floor area to the space. Once a space is occupied, it shall be ventilated at a minimum rate of 0.30 cfm per sq ft of outside air or the design minimum outside air rate determined in Sections 4 through 7 of ASHRAE Standard 62.1-2004, whichever is greater. During each day of the flush-out period, ventilation shall begin a minimum of three (3) hours prior to occupancy and continue during occupancy. These conditions shall be maintained until a total of 14000 cu ft/sq ft of outside air has been delivered to the space.

###### b. [**Insert operating requirements**].

##### **E. 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 "LEED-NC Reference Guide."

###### 2. Demonstrate that the contaminant maximum concentrations listed below are not exceeded:

a. Formaldehyde: 50 ppb.

b. Particulates (PM10): 50 micrograms/cu. m.

c. Total Volatile Organic Compounds (TVOC): 500 micrograms/cu. m.

d. 4-Phenylcyclohexene (4-PH): 6.5 micrograms/cu. m.

e. 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 non-complying building areas, take samples from same locations as in the first test.

###### 4. Air-sample testing shall be conducted as follows:

a. 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.

b. Building shall have all interior finishes installed including, but not limited to, millwork, doors, paint, carpet, and acoustic tiles. Non-fixed furnishings such as workstations and partitions are encouraged, but not required, to be in place for the testing.

c. Number of sampling locations will vary 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** or for each contiguous floor area, whichever is larger, and shall include areas with the least ventilation and greatest presumed source strength.

d. Air samples shall be collected between **three (3)** and **six (6)** feet from the floor to represent the breathing zone of occupants, and over a minimum **four (4)** hour period.

END OF SECTION 01 81 13