**NOTE TO CRITERIA ARCHITECT & DCS PROJECT MANAGER:**

**This version is for a Major Capital Project authorized by the Commissioner to be a Design-Build Project.**

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. The below blue text are project specific information that must be completed by the Criteria Architect 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 Criteria Architect 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 AND FOOTERS: The header and 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 header and footer shown herein. The header of each page shall contain the Division 01 General Requirements, and the page number & number of pages as shown herein. The footer shall contain the project number in the right hand side as shown herein. Division 00 and 01 contain a revision date in the left side of the footer. This date is to remain as it is for DCS informational purposes only and should not be altered by the Criteria Architect.

SECTIONS, SUBSECTIONS, PARAGRAPHS: If a Section is not part of the project scope, delete the Section in the General Requirements, then check “NOT USED” in the Table of Contents. DO NOT delete the Section title from the Table of Contents.

If a Sub-Section is not applicable to the project, DO NOT delete the Sub-Section title from the General Requirements OR from the Table of Contents. Check “NOT USED” in the Table of Contents, and then state “NOT USED” beneath the Sub-Section Title in the General Requirements. Delete the contents of the Sub-Section.

Edit Paragraphs carefully to reflect specific project requirements, or delete them if they do not apply. DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE.

DIVISION 00 SECTIONS contain the bidding documents as required by the Connecticut Department of Administrative Services (CT DAS) Procurement Services Unit and the Connecticut General Statutes. Any and all revisions to this section are the sole responsibility of the CT DAS Procurement Services Unit, and the Criteria Architect shall under no circumstances change these documents. The Criteria Architect is responsible to list these sections in the Project Manual Table of Contents.

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 Criteria Architect. Division 01 must be closely coordinated with Division 00, Division 02 through 49, the Drawings, and Available Information.

LEED REQUIREMENTS: The “Division 01 General Requirements - Design -Build Capital Projects” include the Requirements for LEED & Commissioning. For D-B Capital Projects that DO NOT require LEED & Commissioning, the DCS PM and Criteria Architect must delete LEED & Commissioning sections designated in the Edit Notes, and then check “NOT USED” in the Table of Contents. DO NOT delete the Section title from the Table of Contents.

NOTES TO CRITERIA ARCHITECT, DCS PROJECT MANAGER, & USER AGENCY: The DCS PM, Criteria Architect, and User Agency must determine whether this Project must comply with the following requirements of CGS § 16a-38k:

1. Project is approved and funded on or after January 1, 2008;
2. New construction of a state facility that is projected to cost not less than five million dollars;
3. renovation of a state facility that is projected to cost not less than two million dollars, that is financed with state funds and is approved and funded on or after January 1, 2008,

**01 70 00 EXECUTION AND CLOSEOUT REQUIREMENTS**

1. **Summary:** Section 01 70 00 Execution and Closeout Procedures contains the following subsections:

|  |  |
| --- | --- |
| **01 71 23** | **Field Engineering** |
| **01 73 29** | **Cutting and Patching** |
| **01 74 13** | **Progress Cleaning** |
| **01 74 19** | **Construction Waste Management & Disposal NOTE:** If the specific project **does not require** LEED and/or Commissioning then state **“NOT USED”** in *this* Table of Contents and **delete the Section** from the General Requirements. |
| **01 75 00** | **Starting And Adjusting** |
| **01 77 00** | **Closeout Procedures** |
| **01 78 23** | **Operation And Maintenance Data** |
| **01 78 30** | **Warranties And Bonds** |

**01 71 23 FIELD ENGINEERING**

NOTE: The Section 01 71 23 "Field Engineering” includes requirements for Design-Builder provision of survey and field engineering services for a project.”. If multiple contracts, responsibility for Work of this section should be identified in Section 01 11 00 “Summary of Work”. Delete them if they do not apply.

## A. Related Documents: All Volumes of the Design-Build Request for Proposals for this Project, including, but not limited to, the D-B Agreement General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

### The Design-Builder shall provide field engineering services to establish and record grades, lines, and elevations.

### The Design-Builder shall retain a Professional Engineer or Land Surveyor registered by the State of Connecticut to lay out the building, underground utility lines, and other site work from the horizontal and vertical control information furnished by the Owner and to establish and record the necessary elevations, at no additional cost to the State.

### The Design-Builder shall forward a letter from his Land Surveyor or Professional Engineer stating that the control information furnished by the Owner is accurate or shall identify inaccuracies, if they exist. The Design-Builder shall not take advantage of errors, which may be included in the control information. Stakes and markings shall be preserved.

**End Section 01 71 23**

**Field Engineering**

**01 73 29 CUTTING AND PATCHING**

NOTE: This Section 01 73 29 "Cutting and Patching” includes requirements for incidental cutting, fitting and patching required to complete the Work or to make its several parts fit together properly. This section is NOT intended to be as comprehensive as may be required for an extensive alteration or renovation project. Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

### **Related Documents:** All Volumes of the Design-Build Request for Proposals for this Project, including, but not limited to, the D-B Agreement General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

### It is the responsibility of the Design-Builder to provide chases, channels or openings where needed.

### The Design-Builder shall install sleeves, inserts, and hangers furnished by the trades needing same.

### After installing work into openings, channels, and/or chases, the Design-Builder shall close same. If finishes are to be restored, the new work shall match the original and shall be done by the trade customarily responsible for the particular kind of work.

### Written permission shall be obtained from the Design-Builder before cutting beams, arches, lintels or other structural members.

### **Requirements for Structural Work:** Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.

#### The Design-Builder shall obtain **written** approval from their Architect/Engineer of the cutting and patching proposal before cutting and shall submit all of the Design-Builder’s A/E approval letters to the Construction Administrator before patching the following structural elements:

NOTE: Revise the listed examples below to reflect the project's structural elements.

##### **1.1 Foundation construction.**

##### **1.2 Bearing and retaining walls.**

##### **1.3 Structural concrete.**

##### **1.4 Structural steel.**

##### **1.5 Lintels.**

##### **1.6 Structural decking.**

##### **1.7 Miscellaneous structural metals.**

##### **1.8 Exterior curtain-wall construction.**

##### **1.9 Equipment supports.**

##### **1.10 Piping, ductwork, vessels, and equipment.**

##### **1.11 Structural systems of special construction in Division 13 Sections.**

### Do cutting and patching to integrate all elements of the work. Provide penetrations of existing surfaces. Provide samples for testing. Seal penetrations through floors, walls, ceilings, and roofs, as applicable; restore or preserve fire-rated and smoke-barrier construction. Construction and finishes shall match original work.

### The Design-Builder shall verify dimensions for built-in work and/or work adjoining that of other trades before ordering any material or doing any work. Discrepancies shall be submitted to the Construction Administrator before proceeding with the work.

### **Existing Warranties:** Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

##### Also see Division 00 General Conditions **Article 21 “Cutting, Fitting, Patching, and Digging”.**

**End Section 01 73 29**

**Cutting and Patching**

**01 74 13 PROGRESS CLEANING**

## A. Related Documents: All Volumes of the Design-Build Request for Proposals for this Project, including, but not limited to, the D-B Agreement General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

**B.** **This Section includes:**

**1.** Cleaning requirements during construction operations.

**2.** Final cleaning prior to turning the project over to the Owner.

**C.** **Quality Assurance**

**1.** Coordinate with **Section 01 57 19 – Temporary Environmental Controls.**

**2.** Coordinate with **Section 01 77 00– Close out Procedures.**

**2.1** Design-Builder shall provide progress cleaning that minimizes sources of food, water, and harborage available to pests.

**D.** Utilize non-toxic cleaning materials and methods.

**1.** Use natural cleaning materials where feasible. Natural cleaning materials include:

**1.1** abrasive cleaners: substitute 1/2 lemon dipped in borax.

**1.2** ammonia: substitute vinegar, salt and water mixture, or baking soda and water.

**1.3** disinfectants: substitute 1/2 cup borax in gallon water.

**1.4** drain cleaners: substitute 1/4 cup baking soda and 1/4 cup vinegar in boiling water.

**1.5** upholstery cleaners: substitute dry cornstarch.

### Maintain areas under the Design-Builder’s control free of waste materials, debris, and rubbish. Maintain in a clean and orderly condition.

### Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces before closing the space.

### Periodically clean interior areas before start of surface finishing and continue cleaning on an as-needed basis.

### The Design-Builder shall control cleaning operations so that dust and other particulates will not adhere to wet or newly-coated surfaces.

### Remove waste materials, debris, and rubbish from site daily and dispose of legally off-site. No scrap/debris shall remain inside the building or anywhere on site upon final acceptance of the project.

**J. Final Cleaning:**

**1.** At completion of Work, remove all remaining waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces; leave Project clean and ready for occupancy.

**1.1** After review of trees to remain by Architect and Owner, remove tree tags.

**1.2** Provide final cleaning in accordance with ASTM E1971 and the approved Integrated Pest management (IPM) plan.

### **K.** See also **Division 00 General Conditions, Article 22 “Cleaning Up”.**

**End Section 01 74 13**

**Progress Cleaning**

#### **01 74 19 CONSTRUCTION WASTE MANAGEMENT & DISPOSAL**

**NOTE:** If the specific project **does not require** LEED Certification and Commissioning then **delete** this Section from this document.

NOTE: This Section 01 74 19 "Construction Waste Management” includes administrative and procedural requirements for Construction Waste Management as required by the Design-Builder’s Contract Documents,

##### **NOTE:** Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

**A. Related Documents:**  All Volumes of the Design-Build Request for Proposals for this Project, including, but not limited to, the D-B Agreement General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## Summary: This Section includes requirements for waste management goals, waste management plan and waste management plan implementation.

NOTE: Edit Related Section

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

#### **1.** Division 01 **Section 01 11 00 "Summary of Work".**

#### **2.** Division 01 **Section 01 20 00 "Price and Payment Procedures".**

#### **4.** Division 01 **Section 01 31 19 "Project Meetings".**

#### **5.** Division 01 **Section 01 33 00 "Submittal Procedures".**

#### **6.** Division 01 **Section 01 45 00 "Quality Control".**

#### **7.** Division 01 **Section 01 50 00 "Temporary Facilities and Controls".**

#### **8.** Division 01 **Section 01 60 00 "Product Requirements".**

#### **9.** Division 01 **Section 01 77 00 "Closeout Procedures".**

#### **10.** Division 01 **Section 01 81 13 "Sustainable Design Requirements".**

**D. Definitions:**

### **1.** **Construction Waste:** Solid wastes such as building materials, packaging and rubble resulting from construction, paving and infrastructure.

### **E. Demolition Waste:** Solid wastes such as concrete, wood, brick, plaster, roofing materials, wallboard, metals, carpeting, insulation, and clean fill resulting from demolition or selective demolition of structures.

### **Recyclable Materials:** Products and materials that can be recovered and remanufactured into a new product. Recyclable materials include, but are not limited to, the following:

#### **1.** Metals (ferrous and non-ferrous), including banding, metal studs, ductwork, and piping.

#### **2.** Asphaltic concrete paving.

#### **3.** Portland cement concrete.

#### **4.** Gypsum products.

#### **5.** Paper and cardboard.

#### **6.** Wood products, including structural, finish, crates, and pallets.

#### **7.** Brick and masonry.

#### **8.** Carpet and padding.

#### **9.** Plastics.

#### **10.** Copper wiring.

### **Recycling Facility:** A business that specializes in collecting, handling, processing, distributing, or remanufacturing waste materials generated by new construction projects, into products or materials that can be used for this project or by others.

### **Salvage and Reuse:** Existing usable product or material that can be saved and reused in some manner on the project site. Materials for reuse must be approved by the Construction Administrator. Materials that can be salvaged and reused must comply with applicable technical specifications and include, but are not limited to, the following:

#### **1.** Dimensional lumber and other wood products.

#### **2.** Structural steel.

#### **3.** Soil.

#### **4.** Masonry products.

#### **5.** Plants.

### **Salvage for Resale:** Existing usable product that can be saved and removed intact (as is) from the project site to another site for resale to others without remanufacturing.

**J. Waste Management Goals:**

### **1.** The Owner has established that this Project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.

### **2.** The Design-Builder shall use all means available to divert the greatest extent practical and economically feasible, construction waste from landfills and incinerators.

### **3.** Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.

### **4.** Recycle and/or salvage a minimum of **[50] [75]** percent of non-hazardous construction **[and demolition]** waste by weight of the total solid waste generated by the Project.

### **5.** With regard to these goals the Design-Builder shall develop, for the Owner and Construction Administrator’s review, a Waste Management Plan for this Project.

### **6.** Take a pro-active, responsible role in management of construction waste and require all of the Design-Builder’s subcontractors, vendors, and suppliers to participate in the effort. Establish a construction waste management program that includes the following categories:

#### **6.1** Minimizing packaging waste.

#### **6.2** Salvage and reuse.

#### **6.3** Salvage for resale or donation.

#### **6.4** Recycling.

#### **6.5** Disposal.

**K. Submittals:**

### **Draft Waste Management Plan:** Within **thirty (30)** Calendar days after receipt of Notice of Award of Bid, or prior to any waste removal, whichever occurs sooner, the general Design-Builder shall submit **three (3)** copies of a Draft Waste Management Plan to the Construction Administrator.

### **Final Waste Management Plan:** Once the Owner has determined which of the recycling options addressed in the Draft Waste Management Plan are acceptable, the Design-Builder shall submit within **ten (10)** Calendar days **three (3)** copies of a Final Waste Management Plan.

### **Progress Reports:** Submit **three (3)** copies of monthly progress reports, at the same time as the Application for Payment, documenting the following:

#### **3.1 Material category.**

#### **3.2 Point of waste generation.**

#### **3.3 Total quantity of waste in tons.**

#### **3.4 Quantity of waste salvaged, in tons.**

#### **3.5 Quantity of waste recycled, in tons.**

#### **3.6 Total quantity of waste recovered (salvaged plus recycled) in tons.**

#### **3.7 Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.**

### **4. Calculations:** Submit **three (3)** copies of calculations indicating the end-of-project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Project prior to Substantial Completion.

### **5. Record Submittals:**

#### **5.1 Donations:** Indicate which salvageable materials were donated, who they were donated to, and whether the recipient is tax exempt. Submit documentation indicating receipt of donations.

#### **5.2** **Sales:** Indicate which salvageable materials were sold, who they were sold to, and whether the recipient is tax exempt. Submit documentation indicating receipt of materials.

#### **5.3 Recycling:** Indicate which materials were recycled and the name of the facility licensed to accept them. Submit documentation such as manifests, weight tickets, receipts, and invoices.

#### **5.4 Waste Disposal:** Indicate which materials were accepted as waste by landfills and incinerator facilities licensed to accept them. Submit documentation indicating receipt of materials.

**L. Quality Assurance:**

### **Regulatory Requirements:** Comply with regulations of State of Connecticut Department of Energy and Environmental Protection, Waste Management Bureau Recycling Program, (860) 424-3366.

### **Waste Management Conference:** Review and discuss the waste management plan, requirements for documenting quantities of each type of waste and its disposition, procedures for materials separation, procedures for periodic collection and transportation to recycling and disposal facilities. Review waste management requirements for each trade. Verify availability of containers and bins needed to avoid delays.

**M. Waste Management Plan:**

### **1. Draft Waste Management Plan:** Include the following in the Draft Plan:

NOTE: Modify list below to comply with specific project requirements.

#### **1.1** Analysis of the proposed jobsite waste to be generated, including types and quantities.

#### **1.2** **Landfill Options:** The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).

#### **1.3** **Alternatives to Landfilling:** A list of each material proposed to be salvaged, reused, or recycled during the course of the Project, the proposed local market for each material, and the estimated net cost savings or additional costs resulting from separating and recycling (versus landfilling) each material. "Net" means that the following have been subtracted from the cost of separating and recycling:

##### **1.3.1** Revenue from the sale of recycled or salvaged materials and

##### **1.3.2** Landfill tipping fees saved due to diversion of materials from the landfill. The list of these materials is to include, at a minimum, the following materials:

NOTE: Modify list below to comply with specific project requirements.

###### .1 Cardboard.

**.2 Clean dimensional wood.**

###### .3 Beverage containers.

###### .4 Land clearing debris.

###### .5 Concrete.

###### .6 Bricks.

###### .7 Concrete Masonry Units (CMU).

###### .8 Asphalt.

###### .9 Metals from banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.

**1.4 Resources for Development of Waste Management Plan:** The following sources may be useful in developing the Draft Waste Management Plan:

**1.4.1 Recycling Haulers and Markets:** Local haulers and markets for recyclable materials. For more information, contact the State of Connecticut Department of Energy and Environmental Protection, Waste Management Bureau Recycling Program, (860) 424-3366

#### [**http://www.ct.gov/deep/cwp/view.asp?a=2714&q=324884&depNav\_GID=1645&deepNav=|**](http://www.ct.gov/deep/cwp/view.asp?a=2714&q=324884&depNav_GID=1645&deepNav=|)

### **Final Waste Management Plan:** The Final Waste Management Plan shall contain the following:

#### Analysis of the proposed jobsite waste to be generated, including types and quantities.

#### **Landfill Options:** The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).

#### **Alternatives to Landfilling:** A list of the waste materials from the Project that will be separated for reuse, salvage, or recycling.

#### **Meetings:** A description of the regular meetings to be held to address waste management. Refer to **Section 01 31 19 "Project Meetings".**

#### **Materials Handling Procedures:** A description of the means by which any waste materials identified in item (3) above will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.

#### **Transportation:** A description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site) and destination of materials.

**N. Waste Management Plan Implementation:**

### **1. Manager:** The Design-Builder shall designate an on-site party (or parties) responsible for instructing workers and overseeing and documenting results of the Waste Management Plan for the Project.

### **2. Distribution:** The Design-Builder shall distribute copies of the Waste Management Plan to the Design-Builder’s, Job Site Foreman, each of their Subcontractors, the Owner, and the Construction Administrator.

### **3. Instruction:** The Design-Builder shall provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the Project.

### **4. Separation Facilities:** The Design-Builder shall lay out and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.

### **5.** **Hazardous Wastes:** Hazardous wastes shall be separated, stored, and disposed of according to local regulations.

### **6. Application for Progress Payments:** The Design-Builder shall submit with each Application for Progress Payment a Summary of Waste Generated by the Project. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payment. The Summary shall be submitted on a form acceptable to the Owner and shall contain the following information:

#### **6.1** The amount (in tons or cubic yards) of material landfilled from the Project, the identity of the landfill, the total amount of tipping fees paid at the landfill, and the total disposal cost. Include manifests, weight tickets, receipt, and invoices.

#### **6.2** For each material recycled, reused, or salvaged from the Project: the amount (in tons or cubic yards), the date removed from the jobsite, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or savings of salvage or recycling of each material shall be indicated. Attach manifests, weight tickets, receipts, and invoices.

## O. Plan Implementation:

### **1.** Implement the waste management plan as approved by Owner and Construction Administrator.

### **2.** Provide training of Design-Builder’s workers, contractors, subcontractors, and suppliers on proper waste management procedures.

#### **2.1** Distribute waste management plan to all parties involved in the Project within **three (3)** Calendar Days of submittal return.

#### **2.2** Distribute plan to parties when they first begin working on the Project site. Review plan procedures and locations established for salvage, recycling, and disposal.

## P. Separation Of Recyclable Waste Materials:

### **1.** Provide the necessary containers and bins, to facilitate the waste management program, that are clearly and appropriately marked. Prevent contamination of recyclable materials from incompatible products and materials. Separate construction waste at the project site by one of the following methods:

#### **1.1** **Source Separated Method:** Waste products and materials, that are recyclable, are separated from trash and sorted into appropriately marked separate containers and then transported to the respective recycling facility for further processing. Trash is transported to a landfill or incinerator.

#### **1.2** **Co-Mingled Method:** All construction waste is placed into a single container and then transported to a recycling facility where the recyclable materials are sorted and processed and the remaining trash is transported to a landfill or incinerator.

#### **1.3** Other methods proposed by the Design-Builder and approved by the Owner, Construction Administrator.

**End Section 01 74 19**

**Construction Waste Management and Disposal**

#### **01 75 00 STARTING AND ADJUSTING**

NOTE: The Section 01 75 00 "Starting And Adjusting” includes detailed procedural requirements for building system start up and system demonstration. Provide direct reference to individual product specification sections.

Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

### **A.** **Related Documents:** All Volumes of the Design-Build Request for Proposals for this Project, including, but not limited to, the D-B Agreement General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## B. Summary:

### **1.** This Section includes administrative and procedural requirements for handling requests for building system start up and system demonstration and includes the following:

NOTE: Edit the following listing depending on whether the relevant article is contained within the final edited section or not

#### **1.1 Starting Systems.**

#### **1.2 Demonstration and instructions.**

#### **1.3 Testing, adjusting, and balancing.**

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

#### Division 01 **Section 01 45 00 "Quality Control"** specifies quality assurance and inspecting services.

NOTE: Edit the following references if the Sections below are included in this project.

#### Division 01 **Section 01 77 00 "Closeout Procedures"** specifies requirements for contract close out requirements for system operation and maintenance data and extra materials.

#### Division 01, **Section 01 91 00 "Commissioning"** specifies process requirements for system commissioning.

#### **Design-Builder’s Division 23,** **Section 23 08 00 "Commissioning of HVAC**" specifies requirements HVAC&R system commissioning or the equivalent Section on Commissioning of HVAC provided by the **Design-Builder**.

**D. Starting Systems:**

### Coordinate schedule for start-up of various equipment and systems.

NOTE: Insert the required number of day for notification prior to start-up of any systems.

### Provide written notification to the Owner’s Construction Administrator **thirty (30)** Calendar Days prior to start-up of each item.

### Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, and control sequence for other conditions that may cause damage.

### Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

### Verify that wiring and support components are complete and tested.

NOTE: Include paragraphs below if it is considered an advantage of requiring the Design-Builder to have the manufacturers field services in relationship to scope and complexity of project. Edit or delete paragraphs that are not applicable to project.

### Execute the start-up under supervision of manufacturer’s representative, in accordance with manufacturer’s instructions.

### When referenced in individual specification sections, require manufacturer to provide an authorized representative to be present at the site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

NOTE: Section 01 45 00 “Quality Control” describes administrative procedures associated with the following paragraph.

### Submit a written report in accordance with Division 01 **Section 01 45 00 "Quality Control**" that the equipment or system has been properly installed and is functioning properly.

**E. Demonstration and Instructions:**

NOTE: Revise subparagraph below if necessary to allow more or less time to than the 14 calendar days notification specified.

### Demonstrate operation and maintenance of Products to Owner and Agency Personnel **fourteen (14)** Calendar Days prior to substantial completion.

NOTE: Revise any requirements in paragraph below for special classroom instruction as appropriate for project.

### Demonstrate Project equipment and instruct in a classroom environment at location designated by the Construction Administrator and instructed by a qualified manufacturer’s representative who is knowledgeable about the Project.

NOTE: Revise subparagraph below if necessary to allow more or less time to than the 6 months notification specified.

### For equipment or systems requiring seasonal operation perform demonstration for season within **six (6)** months.

### Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner and Agency Personnel in detail to explain all aspects of operation and maintenance.

### Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, and maintenance, and shutdown of each item at agreed upon scheduled time and at equipment or designated location.

### Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during demonstration.

### Starting and adjusting equipment does not constitute acceptance by the owner since commissioning is a requirement of this contract. Additionally, the warrantee does not begin until substantial completion has been granted for that specific item.

**F. Testing, Adjusting, and Balancing:**

NOTE: Consider adding special requirements that exceed those specified. Possibilities include videocassette recordings for instruction of the owner's personnel.

### The Design-Builder will employ and pay for the testing services of an independent consultant to verify the testing, adjusting, and balancing.

#### **1.1** Comply with the requirements of Division 01 **Section 01 91 00 "Commissioning"** as they relate to the Work of this Section.

### Reports will be submitted by the independent testing consultant to the Construction Administrator indicating observations and results of tests and indicating compliance or non-compliance with the requirements of the Design-Builder’s Contract Documents.

### The Owner may employ and pay for the services of an independent consultant to verify testing, adjusting, and balancing which was performed by the Design-Builder.

**End Section 01 75 00**

**Starting And Adjusting**

#### **01 77 00 CLOSEOUT PROCEDURES**

NOTE: This Section 01 77 00 "Closeout Procedures” includes requirements regarding contract closeout procedures, final cleaning, adjusting. Project records, operation and maintenance data, warranties.

Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

### **A. Related Documents:** All Volumes of the Design-Build Request for Proposals for this Project, including, but not limited to, the D-B Agreement General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

### **B. Substantial Completion:**

#### **1.** Upon completion of the work, the Design-Builder shall submit to the State a Certificate of Substantial Completion wherein the Design-Builder certifies that all conditions of the Contract Documents have been met, and that the facility is ready for occupancy by the Agency. Issuance of a Certificate of SubstantialCompletion by the Owner shall be a pre-condition for payment by the Owner.

NOTE: Delete items from list below that are not applicable or modify items retained to suit project.

#### **1.1 Preliminary Procedures: Before requesting inspection for Certification of Substantial Completion, complete the following. List exceptions in the request.**

##### **1.2 In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent (100%) completion for the portion of the Work claimed as substantially complete.**

##### **1.2.1 Include supporting documentation for completion as indicated in the Contract Documents and a statement showing all accounting of the Contract Documents.**

##### **1.2.3 If 100 percent (100%) completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete shall be provided as well as a schedule for completion of work.**

##### **1.3 Advise the Owner of pending insurance changeover requirements.**

##### **1.4 Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.**

##### **1.5 Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.**

NOTE: Delete subparagraph below if submittal of this material is delayed until Acceptance of the Work.

##### **1.6 Submit as-built record drawings, maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.**

##### **1.7 Deliver tools, spare parts, extra stock, and similar items.**

##### **1.8 Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.**

##### **1.9 Demonstration, through operation and testing, the functions of all systems and/or equipment to the satisfaction of the Owner for compliance to the contract. Complete testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.**

##### **1.10 Complete final cleanup requirements, including touchup painting.**

##### **1.11 Touch up and otherwise repair and restore marred, exposed finishes.**

##### **1.12 Compliance with other terms as outlined in the Contract Documents.**

##### **1.13 List of all the Design-Builder’s suppliers, sub-contractors, etc. Include name of firm, address, FEIN number and CT Tax I.D. number.**

### **2.** **Inspection Procedures:** The Design-Builder shall be ready and prepared when they request a Substantial Completion inspection. If the inspection reveals that the work is not complete, there are extensive punchlist items and as the items listed above are not complete, the Construction Administrator, Owner, and Agency will determine the inspection has failed.

### **3.** The Design-Builder is responsible for all costs to re-inspect due to a failed inspection.

##### **3.1** The Design-Builder will repeat inspection when requested and assured that the Work is substantially complete.

##### **3.2** Results of the completed inspection will form the basis of requirements for Acceptance of the Work.

## Acceptance of the Work

### **1. Preliminary Procedures:** Before requesting a Final Inspection and Certificate of Acceptance and Final Payment, complete the following. List exceptions in the request.

NOTE: If Supplementary Conditions are added to the General Conditions then revise subparagraphs below as necessary.

**1.1** Submit a request for the Final Inspection and Certificate of Acceptance**,** with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required. Submit an updated final statement, accounting for final additional changes to the D-B Contract Sum.

**1.2** Submit a certified copy of the Construction Administrator’s Final Inspection list of items to be completed or corrected, endorsed and dated by the Construction Administrator. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Construction Administrator.

**1.3** Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.

#### **1.4** Submit consent of surety to Final Payment.

**1.5** Submit evidence of final, continuing insurance coverage complying with insurance requirements.

NOTE: Modify paragraph below to comply with Division of Construction Services policy and project requirements.

### **Reinspection Procedure:** The Inspection Group will re-inspect the Work upon receipt of notice from the Construction Administrator that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Owner.

#### Upon completion of re-inspection, the Construction Administrator will prepare a Certificate of Acceptance for issuance by the Owner. If the Work is incomplete, the Construction Administrator will advise the Design-Builder of Work that is incomplete or of obligations that have not been fulfilled but are required for Acceptance.

#### **E.** Issuance of a Certificate of Acceptance, in accordance with CGS § 4-61(b)(2) as amended, by the Owner does not alter the responsibility of the Design-Builder to complete all Work in accordance with the Design-Builder’s Contract Documents.

## F. Design-Builder’s As-Built Drawings Submittal:

### **1.** **General:** The Design-Builder shall not use the As-Built Drawings for construction purposes. Protect Design-Builder’s As-Built Drawings from deterioration and loss in a secure, fire-resistant location. Provide access to the As-Built Drawings for Owner‘s and Construction Administrator’s reference during normal working hours. Keep documents current; do not permanently conceal any work until required information has been recorded. Failure to keep documents current is sufficient cause to withhold progress payments.

* 1. The Design-Builder shall also engage the services of a Surveyor registered in the State of Connecticut to conduct a final survey to determine the location of exterior underground utility lines and to record the results, and update existing electronic media.
  2. The record of exterior underground utilities shall be made at the time of installation on Mylar film drawing and AutoCAD (latest version) compatible disks. The drawing shall bear the seal of the Land Surveyor and a statement of accuracy.

### **2. Design-Builder’s As-Built Drawings:** The Design-Builder shall maintain one clean, complete undamaged set of blue or black line white-prints of Design-Builder’s Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date. **Failure to keep As-built Documents current is sufficient cause to withhold progress payments.**

#### **2.1** Mark record sets with erasable pencil to distinguish between variations in separate categories of the Work.

#### **2.2** Mark all new information that is not shown on Contract Drawings.

#### **2.3** Note related Agreement Amendments where applicable.

#### **2.4** Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.

#### **2.5** Upon completion of the work, the Design-Builder shall pass the As-Built Drawings on to their Architect or Engineer for transferring the changes to the Record Drawing Reproducible Tracings and then submit their Record Drawings to the Construction Administrator for the Owner's Records.

#### **2.6** Submit electronic format data of all Coordination Drawing drawings as required by the owner.

#### **2.7** Refer to Section **01 45 00 “Quality Control”, Section D “Responsibilities”, Subsection 8 “Fire Alarm/Acceptance Testing Procedures, Paragraph** **8.1.6 “As-Built Drawings”** for required as-built drawings and specifications for fire alarm systems.

#### **2.8** Upon completion of the work, the Design-Builder shall submit Record Drawings to their Architect and/or Engineer for transferring the changes to the Record Drawings.

#### **G. Design-Builder’s Record Documents:** Within **thirty (30)** Calendar Days after receipt of the Design-Builder’s“As-Built Drawings” the Design-Builder’sArchitect/Engineers shall convert the Design-Builder’s"As-Built" information into an electronic CADD format and BIM electronic files (if applicable) as required by the Owner, using the original Design-Builder’sA/E contract documents as base drawings. The Design-Builder’sArchitect shall produce “Record Documents” that show all of the significant modifications made during the course of the project.. The Design-Builder’sArchitect’s shall produce **two (2)** sets of electronic CADD format “Record Documents” on electronic media as required by the Owner and (1) set of reproducible Mylar’s “Record Documents”. The original Mylar “Cover Sheet” that includes the original Design-Builder’sA/E Team Members dated signatures and professional seals shall be the Record Documents Cover Sheet. The Design-Builder’sArchitect’s final “Record Documents” (electronic media and reproducible Mylar’s) shall be made at the Design-Builder’s Architect’s expense and shall become the property of the State.

NOTE: Consider deleting paragraph below on small projects.

#### **H. Design-Builder’s Record Specifications:** The Design-Buildershall maintain one complete copy of the Project Manual. Include with the Project Manual one copy of other written construction documents, such modifications issued in printed form during construction.

##### **1.** Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.

##### **2.** Give particular attention to the Technical Specifications and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.

##### **3.** Note related record drawing information and Product Data.

##### **4.** Upon completion of the Work, submit record Specifications to the Construction Administrator for the Owner's records.

NOTE: Consider deleting paragraph below on small projects. If A/E Contract requires resubmittal of updated product data, the need to mark up the previous submittal is eliminated.

#### **I. Design-Builder’s As-Built Product Data:** The Design-Builder shall maintain one copy of each As-Built Product Data submittal and a markup of record drawings and As-Built Specifications.

##### Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.

##### Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.

##### Upon completion of markup, submit complete set of As-Built Product Data to the Construction Administrator for the Owner's records.

##### The Design-Builder’sArchitect and Engineers will be responsible for the accuracy of As-Built Drawings.

NOTE: Paragraph below represents the normal disposition of samples. Revise as required.

#### **J. Design-Builder’s Record Sample Submitted:** Immediately prior to Substantial Completion, the appropriate Design-Builder’sA/E Team Members shall meet with the Owner, Construction Administrator, and the Agency's personnel at the Project Site to determine which Samples are to be transmitted to the Owner for record purposes. Comply with the Owner/Agency instructions regarding delivery to the Owner/Agency Sample storage area.

NOTE: Paragraph below contains requirements for handling miscellaneous record submittals, such as foundation depths, special measurements, tests, surveys, mix records, and inspections by government authorities. If more detailed requirements are necessary, add a summary of miscellaneous record submittals.

#### **K. Design-Builder’s Miscellaneous Record Submittals:** Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to the Construction Administrator for the Owner's records.

NOTE: Revise and add or delete items from listed examples below that are not applicable or modify items retained to suit project.

**L. Maintenance Manuals:** Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, **2-inch, 3**-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder according to Section **01 78 23 “Operation and Maintenance Data”**. The manual shall include, but not be limited to, the following types of information:

##### **1. Emergency instructions.**

##### **2. Spare parts list.**

##### **3. Copies of warranties.**

##### **4. Wiring diagrams.**

##### **5. Recommended "turn-around" cycles.**

##### **6. Inspection procedures.**

##### **7. Shop Drawings and Product Data.**

##### **8. Fixture lamping schedule.**

##### **9. List of vendors and addresses.**

NOTE: Retain paragraph below unless project uses Division 1 supplemental section "operation and maintenance data."

### **Closeout Procedures:**

#### **1.** Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Agency's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

NOTE: Edit below for project specific requirements.

##### **Maintenance manuals.**

##### **Record documents.**

##### **Spare parts and materials.**

##### **Tools.**

##### **Lubricants.**

##### **Fuels.**

##### **Identification systems.**

##### **Control sequences.**

##### **Hazards.**

##### **Cleaning.**

##### **Warranties and bonds.**

##### **Maintenance agreements and similar continuing commitments.**

**NOTE:** Modify list below to suit project.

#### **2.** As part of instruction for operating equipment, demonstrate the following procedures:

##### **2.1 Startup.**

##### **2.2 Shutdown.**

##### **2.3 Emergency operations.**

##### **2.4 Noise and vibration adjustments.**

##### **2.5 Safety procedures.**

##### **2.6 Economy and efficiency adjustments.**

##### **2.7 Effective energy utilization.**

### **N. Final Cleaning:**

#### **1.** **General:** The Contract Documents require general cleaning during construction. Regular site cleaning is included in **Section 01 74 13 “Progress Cleaning”.**

#### **2.** Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion and Certification of Occupancy.

#### **3. Interior:**

##### Remove labels that are not permanent labels.

##### Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Remove paint spots; wash and polish glass.

##### Clean exposed interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

##### Wash washable surfaces of mechanical, electrical equipment and fixtures and replace filters, clean strainers on mechanical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

##### Clean and polish finish hardware.

##### Clean and polish tile and other glazed surfaces.

##### Clean floors; wax and buff resilient tile. Clean vinyl or rubber base.

##### Vacuum and/or dust walls, ceilings, lighting fixtures, ceiling diffusers and other wall and ceiling items.

##### Remove defacements, streaks, fingerprints, and erection marks.

#### **4. Exterior:**

##### **4.1** Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth, even-textured surface.

##### **4.2** Clean exposed exterior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances

##### **4.3** Clean roofs, gutters and downspouts.

##### **4.4** Remove waste and surplus materials, rubbish and construction equipment and facilities from the site, and deposit it legally elsewhere.

##### **4.5** Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Remove paint spots; wash and polish glass.

#### **5.** **Pest Control:** Engage an experienced, licensed exterminator to make a final inspection and rid the work of rodents, insects, and other pests.

#### **6.** **Removal of Protection:** Remove temporary protection and facilities installed for protection of the Work during construction.

#### **7.** **Compliance:** Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Agency's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.

##### **7.1** Where extra materials of value remain after completion of associated Work, they become the Agency's property. Dispose of these materials as directed by the Construction Administrator.

##### **7.2** Leave building clean and ready for occupancy. If the Design Builder fails to clean up, the Owner may do so, with the cost charged to the Developer.

**O. Prerequisites To Functional Completion**

**1.** All TAB work and the commissioning of systems must be complete prior to Functional Completion, unless approved in writing by the Owner’s Project Manager. Exceptions to this are the planned control system training performed after occupancy and any required seasonal or approved deferred testing. This includes for all systems, but is not limited to:

**1.1** Completed and signed start-up and prefunctional checklist documentation;

**1.2** Requested trend log data;

**1.3** Submission of final approved TAB report;

**1.4.** Completion of all functional testing;

**1.5** Required training of Owner personnel completed and approved;

**1.6** Submission of the approved O&M manuals;

**1.7** All identified deficiencies have been corrected or are approved by the Owner to be accepted from this milestone.

**2.** The Owner’s Project Manager (PM) and Construction Administrator will determine the date of Functional Completion after reviewing the Commissioning Authority (CxA) Agent’s recommendation for Functional Completion.

**End Section 01 77 00**

**Closeout Procedures**

##### **01 78 23 OPERATION AND MAINTENANCE DATA**

NOTE: This Section 01 78 23 "Operation and Maintenance Data” includes administrative and procedural requirements for preparing and submitting operation, instruction, and maintenance manuals.

Edit paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

## A. Related Documents: All Volumes of the Design-Build Request for Proposals for this Project, including, but not limited to, the D-B Agreement General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## B. Summary: This Section includes administrative and procedural requirements for operation and maintenance manuals, including the following:

#### Preparing and submitting operation and maintenance manuals for building operating systems and equipment.

#### Preparing and submitting instruction manuals covering the care, preservation, and maintenance of architectural products and finishes.

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

NOTE: Retain subparagraphs below to reference the section that specifies the preparation of material frequently included in operation and maintenance manuals.

#### Division 01 Section **01 33 00 "Submittal Procedures"** specifies preparation of Shop Drawings and Product Data.

#### Division 01 Section **01 75 00 "Starting and Adjusting"** specifies instruction of the Owner and Agency operating personnel in the operation and maintenance of building systems and equipment and the general requirements for starting-up equipment and systems.

#### Division 01 Section **01 77 00 "Closeout Procedures"** specifies general closeout requirements.

#### Division 01 Section **01 78 30 "Warranties and Bonds"** specifies requirements for submittal of warranties and bonds.

NOTE: Delete Reference below if LEED is not a Project Requirement.

#### Division 01 Section **01 81 13 "Sustainable Design Requirements"** specifies requirements for submittals related to green building certification.

#### Appropriate Sections of the Divisions 02 through 49 specify special operation and maintenance data requirements for specific pieces of equipment or building operating systems.

## Quality Assurance

NOTE: Paragraphs below establish high-quality assurance provisions. For many projects, less stringent requirements are advisable. Modify below to suit project.

### **Maintenance Manual Preparation:** In preparation of maintenance manuals, use personnel thoroughly trained and experienced in operation and maintenance of equipment or system involved.

#### **1.1** Where maintenance manuals require written instructions, use personnel skilled in technical writing where necessary for communication of essential data.

#### **1.2** Where maintenance manuals require drawings or diagrams, use draftsmen capable of preparing drawings clearly in an understandable format.

### **Instructions for the Owner and Agency Personnel:** The Design-Builder must use experienced instructors thoroughly trained and experienced in operation and maintenance of equipment or system involved, to instruct the Owner's operation and maintenance personnel.

## E. Submittals:

NOTE: Usually retain subparagraph below. It gives the architect an opportunity to review contents before substantial completion. Revise number of copies required to suit project.

### **Submittal Schedule:** Comply with the following schedule for submitting operation and maintenance manuals:

#### **1.1** Before Substantial Completion, when each installation that requires operation and maintenance manuals is nominally complete, submit **two (2)** draft copies of each manual to the Construction Administrator for review. Include a complete index or table of contents of each manual.

NOTE: Complex projects may require additional time. Revise number of days for review to suit project.

##### **1.1.1** The Construction Administrator will return **one (1)** copy of the draft with comments within **twenty-one (21)** Calendar Days of receipt.

NOTE: Increase time indicated in 2 subparagraphs below, depending on the project's complexity.

##### **1.1.2** Submit **three (3)** copies of data in final form at least **twenty (21)** Calendar Days before final inspection. The Construction Administrator will return **one (1)** copy within **twenty (21)** Calendar Days after final inspection, with comments.

#### After final inspection, make corrections or modifications to comply with the Construction Administrator comments. Submit final copies to the Construction Administrator within **twenty (21)** Calendar Days of receipt of the Construction Administrator comments.

NOTE: Paragraph below describes typical requirements for binding copies of operation and maintenance manuals. Revise to suit project.

### **Form of Submittal:** Prepare operation and maintenance manuals in the form of an instructional manual for use by the Owner's operating personnel. Organize into suitable sets of manageable size. Where possible, assemble instructions for similar equipment into a single binder.

NOTE: Possibly revise subparagraphs below to satisfy other requirements. An alternate binding would be post-type fasteners. Other storage methods include heavy manila envelopes or fiberboard boxes.

#### **Binders:** For each manual, provide heavy-duty, commercial-quality, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to receive **8-1/2-by-11- inch**paper. Provide a clear plastic sleeve on the spine to hold labels describing contents. Provide pockets in the covers to receive folded sheets.

NOTE: Modify 2 subparagraphs below to suit project.

##### **4.1** Where **two (2)** or more binders are necessary to accommodate data, correlate data in each binder into related groupings according to the Project Manual table of contents. Cross-reference other binders where necessary to provide essential information for proper operation or maintenance of the piece of equipment or system.

NOTE: In subparagraph below, insert special requirements, such as indicating the CSI 6-digit section number on bottom of spine for identification.

##### **4.2** Identify each binder on front and spine, with the printed title **"OPERATION AND MAINTENANCE MANUAL”**, Project title or name, and subject matter covered. Indicate volume number for multiple volume sets of manuals.

#### **Dividers:** Provide heavy paper dividers with celluloid-covered tabs for each separate section. Mark each tab to indicate contents. Provide a typed description of the product and major parts of equipment included in the section on each divider.

NOTE: Subparagraph below provides protection for troubleshooting software used in some sophisticated operation systems. Delete requirements where unnecessary.

#### **Protective Plastic Jackets:** Provide protective, transparent, plastic jackets designed to enclose diagnostic software for computerized electronic equipment.

NOTE: Requirements below are normal. Insert special requirements, such as special paper or plastic lamination of important items for permanent preservation, if circumstances warrant.

#### **Text Material:** Where maintenance manuals require written material, use the manufacturer's standard printed material. If manufacturer's standard printed material is not available, provide specially prepared data, neatly typewritten, on **8-1/2-by-11-inch, 20-lb/sq ft**white bond paper.

#### **Drawings:** Where maintenance manuals require drawings or diagrams, provide reinforced, punched binder tabs on drawings and bind in with text.

##### **8.1** Where oversize drawings are necessary, fold drawings to the same size as text pages and use as a foldout.

NOTE: Avoid placing loose, oversize drawings in binder pockets. They are often lost. Use reduced drawings. If not practical, place folded drawings in labeled envelopes and place envelopes in pockets or bind envelopes in the manual.

##### **8.2** If drawings are too large to be used practically as a foldout, place the drawing, neatly folded, in front or rear pocket of binder. Insert a typewritten page indicating drawing title, description of contents, and drawing location at the appropriate location in the manual.

NOTE: Consider other special requirements, such as use of photographs instead of drawings, to demonstrate unusual installations.

## Manual Content

### In each manual include information specified in the individual Specification Section and the following information for each major component of building equipment and its controls:

NOTE: DBCA to modify list below to suit project.

#### **1.1 General system or equipment description.**

#### **1.2 Design factors and assumptions.**

#### **1.3 Copies of applicable shop drawings and product data.**

#### **1.4 System or equipment identification, including:**

##### **1.4.1 Name of manufacturer.**

##### **1.4.2 Model number.**

##### **1.4.3 Serial number of each component.**

#### **1.5 Operating instructions.**

#### **1.6 Emergency instructions.**

#### **1.7 Wiring diagrams.**

#### **1.8 Inspection and test procedures.**

#### **1.9 Maintenance procedures and schedules.**

#### **1.10 Precautions against improper use and maintenance.**

#### **1.11 Copies of warranties.**

#### **1.12 Repair instructions including spare parts listing.**

#### **1.13 Sources of required maintenance materials and related services.**

#### **1.14 Manual index.**

### **2.** Organize each manual into separate sections for each piece of related equipment. As a minimum, each manual shall contain a title page; a table of contents; copies of product data, supplemented by drawings and written text; and copies of each warranty, bond, and service contract issued.

#### **2.1** **Title Page:** Provide a title page in a transparent, plastic envelope as the first sheet of each manual. Provide the following information:

NOTE: Revise list below to suit project. Make appropriate revisions if the project is performed under multiple prime contracts.

##### **2.1.1 Subject matter covered by the manual.**

##### **2.1.2 Name and address of the Project.**

##### **2.1.3 Date of submittal.**

##### **2.1.4 Name, address, and telephone number of the Design-Builder.**

##### **2.1.5 Name and address of the Architect and Construction Administrator.**

##### **2.1.6 Cross-reference to related systems in other operation and maintenance manuals.**

NOTE: Revise subparagraph below if the project is performed under multiple prime contracts.

#### **2.2** **Table of Contents**: After title page, include a typewritten table of contents for each volume, arranged systematically according to the Project Manual format. Include a list of each product included, identified by product name or other appropriate identifying symbol and indexed to the content of the volume.

##### **2.2.1** Where a system requires more than one volume to accommodate data, provide a comprehensive table of contents for all volumes in each volume of the set.

General Information NOTE: Modify subparagraph below to suit project. For simple projects that require few manuals, include this information on title page.

#### **2.3** Provide a general information section immediately following table of contents, listing each product included in the manual, identified by product name. Under each product, list the name, address, and telephone number of the Design-Builder’s subcontractor or Installer and the maintenance contractor. Clearly delineate the extent of responsibility of each of these entities. Include a local source for replacement parts and equipment.

NOTE: Coordinate subparagraph below with Division1 sections "Submittals" and "Contract Closeout." Make certain there are sufficient copies of product data sheets to include in the manuals. Possibly insert specific requirements, such as the method for highlighting text or tabular material.

#### **2.4 Product Data:** Where the manuals include manufacturer's standard printed data, include only sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where the Project includes more than **one (1)** item in a tabular format, identify each item, using appropriate references from the Design-Builder’s Contract Documents. Identify data that is applicable to the installation, and delete references to information that is not applicable.

NOTE: Revise subparagraph below to suit project. Add special operating procedures, if necessary.

#### **2.5 Written Text**: Prepare written text to provide necessary information where manufacturer's standard printed data is not available, and the information is necessary for proper operation and maintenance of equipment or systems. Prepare written text where it is necessary to provide additional information or to supplement data included in the manual. Organize text in a consistent format under separate headings for different procedures. Where necessary, provide a logical sequence of instruction for each operation or maintenance procedure.

NOTE: Coordinate subparagraph below with Division 1 Section "Contract Closeout." Require additional record drawings to include in operation and maintenance manuals. If necessary, modify Division 1 Section "Contract Closeout."

#### **2.6** **Drawings:** Provide specially prepared drawings where necessary to supplement manufacturer's printed data to illustrate the relationship of component parts of equipment or systems or to provide control or flow diagrams. Coordinate these drawings with information contained in project record drawings to assure correct illustration of the completed installation.

NOTE: Retain subparagraph below. It is not advisable to use record drawings in operation and maintenance manuals.

##### **2.6.1** Do not use original Record Documents as part of operation and maintenance manuals.

#### **2.7** **Warranties and/or Bonds:** Provide a copy of each warranty and/or bond in the appropriate manual for the information of the Owner's operating personnel. Provide written data outlining procedures to follow in the event of product failure. List circumstances and conditions that would affect validity of warranty or bond.

NOTE: Subparagraph below provides information in the event of product failure. It may be necessary to provide additional information for specific products.

## Material And Finishes Maintenance Manual:

### Submit **four (4)** copies of each manual, in final form, on material and finishes to the Construction Administrator for distribution. Provide **one (1)** section for architectural products, including applied materials and finishes. Provide a second section for products designed for moisture protection and products exposed to the weather.

#### **1.1** Refer to individual Specification Sections for additional requirements on care and maintenance of materials and finishes.

### **Architectural Products:** Provide manufacturer's data and instructions on care and maintenance of architectural products, including applied materials and finishes.

#### **2.1** **Manufacturer's Data:** Provide complete information on architectural products, including the following, as applicable:

##### **2.1.1 Manufacturer's catalog number.**

##### **2.1.2 Size.**

##### **2.1.3 Material composition.**

##### **2.1.4 Color.**

##### **2.1.5 Texture.**

##### **2.1.6 Reordering information for specially manufactured products.**

#### **2.2** **Care and Maintenance Instructions:** Provide information on care and maintenance, including manufacturer's recommendations for types of cleaning agents to be used and methods of cleaning. Provide information on cleaning agents and methods that could prove detrimental to the product. Include manufacturer's recommended schedule for cleaning and maintenance.

### **Moisture Protection and Products Exposed to the Weather:** Provide complete manufacturer's data with instructions on inspection, maintenance, and repair of products exposed to the weather or designed for moisture-protection purposes.

#### **3.1** **Manufacturer's Data:** Provide manufacturer's data giving detailed information, including the following, as applicable:

NOTE: Modify list below to suit project.

##### **3.1.1 Applicable standards.**

##### **3.1.2 Chemical composition.**

##### **3.1.3 Installation details.**

##### **3.1.4 Inspection procedures.**

##### **3.1.5 Maintenance information.**

##### **3.1.6 Repair procedures.**

## Equipment And Systems Maintenance Manual:

### Submit **four (4)** copies of each manual, in final form, on equipment and systems to the Construction Administrator for distribution. Provide separate manuals for each unit of equipment, each operating system, and each electric and electronic system.

#### **1.1** Refer to individual Specification Sections for additional requirements on operation and maintenance of the various pieces of equipment and operating systems.

### **Equipment and Systems:** Provide the following information for each piece of equipment, each building operating system, and each electric or electronic system.

#### **2.1** **Description:** Provide a complete description of each unit and related component parts, including the following:

NOTE: Modify list below to suit project.

##### **2.1.1 Equipment or system function.**

##### **2.1.2 Operating characteristics.**

##### **2.1.3 Limiting conditions.**

##### **2.1.4 Performance curves.**

##### **2.1.5 Engineering data and tests.**

##### **2.1.6 Complete nomenclature and number of replacement parts.**

#### **2.2 Manufacturer's Information:** For each manufacturer of a component part or piece of equipment, provide the following:

NOTE: Modify list below to suit project.

##### **2.2.1 Printed operation and maintenance instructions.**

##### **2.2.2 Assembly drawings and diagrams required for maintenance.**

##### **2.2.3 List of items recommended to be stocked as spare parts.**

#### **2.3** **Maintenance Procedures:** Provide information detailing essential maintenance procedures, including the following:

#### **2.4** **Operating Procedures:** Provide information on equipment and system operating procedures, including the following:

NOTE: Modify list below to suit project.

##### **2.4.1 Startup procedures.**

##### **2.4.2 Equipment or system break-in.**

##### **2.4.3 Routine and normal operating instructions.**

##### **2.4.4 Regulation and control procedures.**

##### **2.4.5 Instructions on stopping.**

##### **2.4.6 Shutdown and emergency instructions.**

##### **2.4.7 Summer and winter operating instructions.**

##### **2.4.8 Required sequences for electric or electronic systems.**

##### **2.4.9 Special operating instructions.**

#### **2.5 Servicing Schedule:** Provide a schedule of routine servicing and lubrication requirements, including a list of required lubricants for equipment with moving parts.

#### **2.6 Controls:** Provide a description of the sequence of operation and as-installed control diagrams by the control manufacturer for systems requiring controls.

#### **2.7 Identification Drawings:** Provide each Design-Builder's Identification Drawings.

##### **2.7.1** Provide as-installed, color-coded, piping diagrams, where required for identification.

#### **2.8 Valve Tags**: Provide charts of valve-tag numbers, with the location and function of each valve.

#### **2.9 Circuit Directories:** For electric and electronic systems, provide complete circuit directories of panel boards, including the following:

NOTE: Modify list below to suit project.

##### **2.9.1 Controls.**

##### **2.9.2 Communication.**

### **Electronic Media:**

NOTE: Choose media below to suit project delete media not used.

#### **3.1** For equipment which requires maintenance by operational personnel, provide a professionally developed **[video tape] [DVD]** for the use of maintenance training for the facility. Each **[video tape] [DVD]** will be accompanied by a written index which can be utilized to find any specific item of information by time or place on the **[video tape] [DVD]**.

#### **3.2** The Design-Builder is responsible for this production. This **[video tape] [DVD]** will be provided to the Construction Administrator at the same time as the delivery of the other maintenance material.

#### **3.3** The **[video tape] [DVD]** must be able to be edited for future changes to the equipment and modifications as they occur.

**End Section 01 78 23**

**Operation And Maintenance Data**

#### **01 78 30 WARRANTIES AND BONDS**

NOTE: This Section 01 78 30 "Warranties and Bonds” includes administrative and procedural requirements for warranties and bonds as required by the Contract Documents, including manufacturers’ standard warranties on products and special warranties.

Edit paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

## A. Related Documents: All Volumes of the Design-Build Request for Proposals for this Project, including, but not limited to, the D-B Agreement General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## B. Summary: This Section includes administrative and procedural requirements for warranties required by the Design-Builder’s Contract Documents, including manufacturer’s standard warranties on products and special warranties.

#### **1.** Refer to the D-B General Conditions for terms of the Design-Builder’s period for correction of the Work.

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

NOTE: Revise subparagraphs below to suit project circumstances:

#### Division 01 Section **01 33 00 "Submittal Procedures"** specifies procedures for submitting warranties.

#### Division 01 **Section 01 77 00 "Closeout Procedures"** specifies contract closeout procedures.

#### Division 01 **Section 01 78 23 "Operation and Maintenance Data"** specifies required operation and maintenance data.

#### The Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

#### Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Designer-Builder’s Contract Documents.

### **Disclaimers and Limitations**: Manufacturer's disclaimers and limitations on product warranties do not relieve the Design-Builder of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve the Design-Builder’s suppliers, manufacturers, and subcontractors required to countersign special warranties with the Design-Builder.

NOTE: Retain paragraph below. Insert allowable exceptions here or in individual sections.

### **Related Damages and Losses:** When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.

NOTE: Modify paragraphs below as necessary to establish requirements to reinstate the warranty after failure. Consult the Project Manager when in doubt. The original warranty starts on the date of substantial completion. See Supplementary Conditions. Indicate exceptions to these requirements in individual sections. Check each warranty for special extensions.

### **Reinstatement of Warranty:** When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

NOTE: On advice of the Project Manager, expand requirement below to provide proportional cost sharing, depending on when the item failed during its useful life. Specify exceptions in individual sections.

### **Replacement Cost:** Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Design-Builder’s Contract Documents. The Design-Builder is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

### **Owner's Recourse:** Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.

#### **Rejection of Warranties:** The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

NOTE: Retain paragraph below. It may make the Owner's position more secure if compromises are necessary and set the stage for recovery in the event of product failure.

### Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Design-Builder presents evidence that entities required to countersign such commitments are willing to do so.

### The Design-Builder shall warranty all materials and workmanship for a period of eighteen months from the date of Acceptance of the Work. In addition, the Design-Builder shall furnish the warranties listed below. Submit four copies of each to the Construction Administrator in the supplier's standard form or in the form given below if there is no standard form available.

### The Design-Builder shall warranty all materials and workmanship for a period of **eighteen** (**18)** months from the date of Acceptance of the Work. In addition, the Design-Builder shall furnish the warranties listed below. Submit four copies of each to the Construction Administrator in the supplier's standard form or in the form given below if there is no standard form available.

### **Specification/Warranty Table:** The Design-Builder shall provide for all warranties as shown in the Specification/Warranty table:

NOTE: Owner & DBCA must edit the following Table to suit the subject project and by adding the 4 digits of the first two (2) digits provided (6-digit CSI number) to be used in each specification. The list gives the minimum acceptable warranty and/or guaranty and/or terms for the products and work specified.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Specification / Warranty Table** | | | | |
| **Item No.** | **Section No.** | | **Specification Product/Warranty** | |
|  |  |  |  | |
| **1.** | **03** | **Insert** | **Floor hardener:** | |
|  |  | **5** | year, material and workmanship. |
| **2.** | **05** | **Insert** | **Expansion Joint Covers:** | |
|  |  | **5** | year material & workmanship. |
| **3.** | **07** | **Insert** | **Single-Ply Membrane Roofing, Base Flashing and Insulation:** | |
|  |  | **25** | year unlimited, materials and installation [the manufacturer’s no dollar limit (NDL) warranty], and; |
|  |  |
|  |  | **2** | year General Contractor’s warranty for installation. |
| **4.** | **07** | **Insert** | **Built Up Roofing (BUR) and Modified Asphalt Roofing, Base Flashing, and Insulation:** | |
|  |  |  | **20** | year unlimited materials and Installation [the manufacturer’s no dollar limit (NDL) warranty], and; |
|  |  |  | **2** | Contractor’s warranty for installation. |
| **5.** | **07** | **Insert** | **Metal Roofing and Siding:** | |
|  |  | **20** | year against rupture, cracks or perforation due to corrosion, and; |
|  |  | **20** | year for fluorocarbon finish (if used) against peeling, blistering, fading and chalking as limited by industry standards, and; |
|  |  |
|  |  | **10** | year weathertightness warranty by General Contractor’s installer. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Specification / Warranty Table** (Continued) | | | | |
| **Item No.** | **Section No.** | | **Specification Product/Warranty** | |
| **6.** | **07** | **Insert** | **Copper Roofing:** | |
|  |  | **10** | year against rupture, cracks or perforation due to corrosion and including materials and workmanship. |
|  |  |
| **7.** | **07** | **Insert** | **Vents and Hatches:** | |
|  |  | **5** | year product and installation, including weathertightness. |
| **8.** | **07** | **Insert** | **Waterproofing:** | |
|  |  | **5** | year material and workmanship. |
| **9.** | **07** | **Insert** | **Water Repellent:** | |
|  |  | The term offered for the Specific product. | |
| **10.** | **07** | **Insert** | **Exterior Expansion Joint Covers:** | |
|  |  | **5** | year material and workmanship, including weathertightness. |
| **11.** | **07** | **Insert** | **Wood Shingles** (roofing, siding)**:** | |
|  |  | **10** | year for material and workmanship. |
| **12.** | **07** | **Insert** | **Exterior - Interior Caulking and Sealants**: | |
|  |  | **5** | year, material and workmanship. |
| **13.** | **07** | **Insert** | **Metal Flashing and Sheet Metal:** | |
|  |  | **3** | year, material and workmanship. |
| **14.** | **07** | **Insert** | **Asphalt Roof Shingles:** | |
|  |  | **25** | year, material pro-rated. |
| **15.** | **07** | **Insert** | **Asphalt Roof Shingles Installation:** | |
|  |  | **15** | year, workmanship, pro-rated. |
| **16.** | **08** | **Insert** | **Solid Wood Core and Mineral Core doors:** | |
|  |  | Lifetime for interior doors. | |
|  |  | **5** | year for exterior doors. |
| **17.** | **08** | **Insert** | **Overhead Doors** (coiling or sectional)**:** | |
|  |  |  | **5** | year material and workmanship. |
| **18.** | **08** | **Insert** | **Skylights:** | |
|  |  |  | **5** | Year product and installation, including weathertightness. |
| **19.** | **08** | **Insert** | **Closers, Locksets, Exit Bolts:** | |
|  |  |  | Longest term offered by manufacturer for grade/class of particular item, material and workmanship. | |
|  |
| **20.** | **08** | **Insert** | **Insulating glass:** | |
|  |  |  | **10** | year against failure of hermetic seal, interpane dusting, or misting including replacement of unit. |
| **21.** | **08** | **Insert** | **Windows:** | |
|  |  |  | **5** | year material and workmanship including weathertightness. |
| **22.** | **08** | **Insert** | **Laminated Glass:** | |
|  |  |  | **10** | year against delamination. |
| **23.** | **08** | **Insert** | **Storefront/Curtain Wall:** | |
|  |  |  | **5** | year material and workmanship (insulating glass separate). Air and water infiltration and strength to specified AAMA designation. |
| **24.** | **09** | **Insert** | **Carpet:** | |
|  |  |  | **10** | year wear and color fastness, and; |
|  |  |  | **3** | year installation. |
| **25.** | **10** | **Insert** | **Operable Partitions:** | |
|  |  |  | **5** | Years, material, and workmanship. |
| **26.** | **10** | **Insert** | **Mirrors:** | |
|  |  |  | **15** | years against silver spoilage. |
| **27.** | **14** | **Insert** | **Elevators and Wheelchair Lifts:** | |
|  |  |  | **18** | months for material, workmanship, and installation. |
| **28** | **22** | **Insert** | **Electric Heating Cable:** | |
|  |  |  | **10** | years, material, and installation. |
| **29** | **22** | **Insert** | **Water Softener:** | |
|  |  |  | **10** | years, material, and installation. |
| **30** | **22** | **Insert** | **Instantaneous Heat Exchangers:** | |
|  |  |  | **1** | year, material, and installation. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Specification / Warranty Table** (Continued) | | | | |
| **Item No.** | **Section No.** | | **Specification Product/Warranty** | |
| **31** | **23** | **Insert** | **Fuel Storage Tank:** | |
|  |  |  | **30** | years, material, and installation. |
| **32** | **23** | **Insert** | **Compressors and Pumps:** | |
|  |  |  | **5** | years, material and installation, |
| **33** | **26** | **Insert** | **Dimming Controls:** | |
|  |  |  | **8** | years, material and installation, |
| **34** | **26** | **Insert** | **Switchboards and Panels:** | |
|  |  |  | **5** | years, material and installation, |
| **35** | **26** | **Insert** | **Engine Generators:** | |
|  |  |  | **10** | years, material and installation, |
| **36** | **26** | **Insert** | **Uninterruptable Power Supply:** | |
|  |  |  | **3** | years, material and installation, |
| **37** | **26** | **Insert** | **Emergency Lighting Batteries:** | |
|  |  |  | **10** | years, material and installation, |
| **38** | **26** | **Insert** | **Lighting Ballasts:** | |
|  |  |  | **5** | years, material and installation, |
| **39** | **32** | **Insert** | **Plant Material, Turf and Grasses:** | |
|  |  |  | **24** | months, material and installation, and growth. |

### Submit certification that finish materials are fire rated as specified.

### Form of Warranty: Warranties shall be submitted in following format:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Warranty** | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | |
| ***Commissioner:*** *(Insert Commissioner’s Name)* | | | | | | | | | | | | | | | |
| ***Department of Administrative Services*** | | | | | | | | | | | | | | | |
| ***Division of Construction Services*** | | | | | | | | | | | | | | | |
| ***165 Capitol Avenue*** | | | | | | | | | | | | | | | |
| ***Hartford, Connecticut 06106*** | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | |
| ***Project Number:*** *(Insert DAS Project Number)* | | | | | | | | | | | | | | | |
| ***Project Title:*** *(Insert Project Title)* | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | |
| ***I (We) hereby warranty*** | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | |
| ***the*** |  | | | ***work on the referenced project for a period of*** | | | | | | | | | |  | ***years*** |
|  | | | | | | | | | | | | | | | |
| ***from*** |  | | ***, 20*** |  | ***against failures of workmanship and materials in accordance*** | | | | | | | | | | |
|  | | | | | | | | | | | | | | | |
| ***with the requirements of Section*** | | | |  | | ***, Page*** | | |  | ***, Paragraph*** |  | | ***, of the Specifications.*** | | |
|  | | | | | | | | | | | | | | | |
| ***Installer*** | | ***Subcontractor*** | | | | | | ***Vendor/Suppliers*** | | | | ***Manufacturer*** | | | |
|  | |  | | | | | | | | | | | | | |
| ***Design-Builder’s*** ***Installer or Subcontractor or Vendor/Suppliers or Manufacturer Name:*** | | | | | | |  | | | | | | | | |
|  | | | | | | |  | | | | | | | | |
| ***Design-Builder’s*** ***Installer or Subcontractor or Vendor/Suppliers or Manufacturer Signature:*** | | | | | | |  | | | | | | | | |
|  | | | | | | |  | | | | | | | | |
| ***Design-Builder’s*** ***Name*** | | | | | | |  | | | | | | | | |
|  | | | | | | |  | | | | | | | | |
| ***Design-Builder’s*** ***Signature:*** | | | | | | |  | | | | | | | | |
|  | | | | | | |  | | | | | | | | |
| ***or*** | | | | | | |  | | | | | | | | |
|  | | | | | | |  | | | | | | | | |
| ***Design-Builder’s***  ***Authorized Agent Signature:*** | | | | | | |  | | | | | | | | |
|  | | | | | | |  | | | | | | | | |

### Bonds shall be by approved Surety Companies, made out to the Commissioner, Department of Administrative Services on companies’ standard form.

### Warranties, Guarantees, or bonds supplied by the Design-Builder’s Subcontractors or Vendors/Suppliers or Manufacturers shall reference the project name, number, and location and be certified by the Design-Builderto be for the product and installation on the project and must be countersigned by the Design-Builder’s.

### **Submittals**:

#### **1.** Submit written warranties prior to the date certified for Substantial Completion. If the Design-Builder’s Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Owner.

#### Forms for special warranties are included in this Section. Prepare a written document utilizing the appropriate form, ready for execution by the Design-Builder’s, and by the Design-Builder’s subcontractor or vendor/supplier, or manufacturer. Submit a draft to the Owner, through the Construction Administrator, for approval prior to final execution.

##### **2.1** Refer to the Design-Builder’sDivisions 02 through 48 Sections for specific content requirements and particular requirements for submitting special warranties.

NOTE: Delete paragraphs below for small projects with only a few warranties.

#### **3.** **Form of Submittal:** At Acceptance of the Work compile **two (2)** copies of each required warranty properly executed by the Design-Builder, and by the Design-Builder’s subcontractor or vendor/supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

NOTE: Modify paragraph below to suit project.

#### **4.** Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive **8-1/2-inch** by-**11-inch (115-by-280-mm)** paper.

##### **4.1** Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.

##### **4.2** Identify each binder on the front and spine with the typed or printed title "WARRANTIES," DCS Project Number, Project Title, name of the Design-Builder, and name of Design-Builder’s subcontractor or vendor/supplier, or manufacturer.

NOTE: Coordinate requirement below with Division 1 Section 01 77 00 “Closeout Procedures” or Section 01 78 23 "Operation And Maintenance Data." Make certain there are sufficient copies of warranties for inclusion in the manuals.

##### **4.3** When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

**End Section 01 78 30**

**Warranties and Bonds**

**END SECTION 01 70 00**

**EXECUTION AND CLOSEOUT PROCEDURES**