

SECTION 01 77 70
CLOSEOUT PROCEDURES

PART 1 - General

1.01 SUBSTANTIAL COMPLETION

- A. For Substantial Completion the Contractor shall provide the following to the Designer:
1. Notification that the Work is Substantially Complete as described in the Contract Conditions.
 2. A comprehensive list of items to be completed or corrected as described in the Contract Conditions with dates scheduled for completion or correction of each item.
 3. Proposed schedule for demonstration and training for the Owner's operations and maintenance personnel.
 4. Operations and Maintenance Binders.
- B. The Designer will review the status of the Work and consult with the Owner to determine readiness for the Substantial Completion inspection. If the Work, submittals, and required use and occupancy permits are determined to be ready, the Designer will schedule a meeting with the Contractor and the Owner to perform the inspection described in the Contract Conditions, make an accounting of Liquidated Damages, and provide resultant documentation to the Contractor and Owner in accordance with the Contract Conditions.

1.02 INITIATION OF WARRANTIES

In accordance with the Contract Conditions, the successful culmination of the Substantial Completion Closeout Procedure is the Designer's issuance of a Certificate of Substantial Completion which shall also designate the date(s) of commencement of applicable warranties and time period(s) for correction of defects.

1.03 FINAL PAYMENT

- A. For Final Payment the Contractor shall provide the following to the Designer:
1. Notification that the Work is complete in accordance with the Contract Documents.
 2. The Construction Record Documents.
 3. An application for Final Payment in accordance with the Contract Conditions and Section 01 29 76.
- B. The Designer will review the status of the Work and consult with the Owner to determine readiness for Final Payment. If the Work and submittals are determined to be ready, the Designer will certify Final Payment in accordance with the Contract Conditions.

1.04 DESIGNER RE-INSPECTION COST

Should the Designer perform re-inspections due to failure of the Work to comply with claims of status of completion made by the Contractor, the Owner may deduct the cost incurred resulting from such re-inspections from any sum due the Contractor.

1.05 ONE-YEAR CORRECTIVE INSPECTION

- A. An inspection of the Work will be scheduled by the Owner and conducted at the project site prior to one year from the date Substantial Completion was achieved.
- B. The Contractor shall provide a representative for the inspection. The Owner and the Designer will also attend.
- C. The inspection is intended to facilitate communication to the Contractor of outstanding corrections required in accordance with the Contract Conditions regarding Correction of Work.
- D. The inspection shall include confirmation of non-conforming items previously identified by the Owner and determination of the status of such items.

1.06 OPERATIONS AND MAINTENANCE BINDERS

- A. Operations and Maintenance (O&M) Binders shall be organized in a manner similar to the Project Manual. Include related documents under the heading to which each is most closely related.
- B. Two complete sets shall be provided in three ring binders.
- C. Face of binders shall be titled "Operations and Maintenance Binder" and shall provide Project name, SBC No., and Contractor's name, address, and phone number. Side of binders shall provide the same title and Project name. If the amount of data requires multiple binders, identify as consecutively numbered volumes on both face and side.
- D. Oversize documents shall be bound separately if they cannot be neatly folded and included with other documents and referenced in the binder.
- E. Contents shall be provided as follows, including but not limited to such data for mechanical systems, electrical systems, conveying systems, equipment, and finishes requiring care and maintenance:
 - 1. Manufacturer's printed O&M instructions supplemented with drawings and text to clearly illustrate proper operation and a logical sequence of maintenance procedures. These shall be the written manufacturer's data with the model and features of this installation clearly marked and edited to omit reference to products or data not applicable to this installation. This section shall include data on the following:
 - a Installation, startup and break-in instructions.
 - b All starting, normal shutdown, emergency shutdown, manual operation, seasonal changeover, and normal operating procedures and data, including any special limitations.
 - c O&M and installation instructions that were shipped with the unit.
 - d Servicing and lubrication schedule with list of lubricants.

- e Preventative maintenance and service procedures and schedules.
 - f Troubleshooting procedures.
 - g Parts list, illustrations, assembly drawings and diagrams, edited to omit reference to items that do not apply to this installation.
 - h List of any special tools required to service or maintain the equipment.
 - i Performance data, ratings and curves.
 - j Warranty, which clearly lists conditions to be maintained to keep warranty in effect and conditions that would affect the validity of the warranty.
 - k Any service contracts issued.
 - l Data dedicated to documenting the commissioning process that includes all certifications and testing data.
2. As-installed control diagrams by controls manufacturer.
 3. Circuit directories of panel boards.
 4. Instructions for care, with a list of manufacturer's recommended types of cleaning agents and methods.
 5. Lists of spare materials and parts furnished for the Owner's use.
 6. Documentation of demonstration and training for O&M as described below.
 7. Controls and Test and Balance (TAB) O&M Data shall be provided to include control drawings for equipment and its components, including the sequence of operation. The controls contractor and TAB contractor shall provide this data.
 8. Report of Subcontractors and Suppliers, listing all Subcontractors and major material suppliers for the Work, shall be provided with the data and in the form exhibited in Section 01 78 88.
 9. Guarantees, warranties, certifications, and bonds, executed by the respective vendors, manufacturers, suppliers and Subcontractors including applicable Roofing System Warranty or Warranties on the form exhibited as Section 01 78 36.

1.07 CONSTRUCTION RECORD DOCUMENTS

- A. The Construction Record Documents are the record copy of documents marked to record changes and approved submittals as described in the Contract Conditions. Such documents shall be kept in good condition for submittal to the Designer upon completion of the Work.
- B. As the Work progresses, the Contractor shall keep a complete and accurate record of changes or deviations from the Contract Documents and the submittals, indicating the Work as actually installed. Changes shall be neatly and correctly shown on the respective portion of the affected document, using hard copies of the Drawings affected or the Specifications and adding appropriate supplementary notes. Arrange and index the documents in a manner similar to the Drawings and Project Manual.
- C. No review or receipt of such documents by the Designer or Owner shall be a

waiver of any deviation from the Contract Documents or the approved shop drawings or in any way relieve the Contractor from responsibility to perform the Work in accordance with the Contract Documents and the approved shop drawings.

- D. The original State Fire Marshall Office red stamped Job Site approved drawings shall be submitted as a portion of the Construction Record Documents.

1.08 DEMONSTRATION AND TRAINING

- A. Coordinate a schedule of demonstration and training with Designer and Owner's personnel for all installed equipment and systems.
- B. If conditions (such as season of year) do not allow for a complete demonstration or training of equipment and systems operation during one meeting session; then coordinate a schedule that shall provide a sufficient number of sessions within the warranty period.
- C. Demonstrate operation of installed equipment and systems to Designer and to Owner's representative. All dependent systems must be demonstrated as being operationally coordinated, e.g. energy management controls coordinated with mechanical equipment.
- D. Demonstrations shall be complete and detailed; referencing manufacturer's printed O&M instructions and evidencing all required design specifications.
- E. All training shall be specific to the actual installed equipment and systems, and be performed by persons approved by equipment manufacturer(s) and/or approved by the Designer to conduct such training.
- F. Instruct Owner's personnel with overall equipment and systems assembly and function; using assembly drawings and diagrams which are specific to the actual installed equipment and systems.
- G. Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems; using the manufacturer's printed O&M data that is specific to the installed equipment and systems as the basis of instruction.
- H. Verify that Owner's personnel have received all spare materials and parts required to be furnished, and provide instruction in replacement procedures.

END OF SECTION