

**SECTION 01 77 00
CLOSEOUT PROCEDURES**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Administrative and procedural requirements for Project closeout, including but not limited to:
 - 1. Inspection procedures for Contract Completion.
 - 2. Project record document submittal.
 - 3. Operating and maintenance manual submittal.
 - 4. Submittal of warranties.
 - 5. Final cleaning.
 - 6. Closeout requirements for specific construction activities are included in the appropriate Sections.
- B. Related Requirements:
 - 1. General Conditions Article 10: Contract Completion.

1.2 FINAL ACCEPTANCE

- A. Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List any exceptions in the request.
 - 1. Submit final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 - 2. Submit an updated final statement, accounting for final additional changes to the Contract Amount.
 - 3. Submit a certified copy of Associate Architect's final inspection list of items to be completed or corrected, stating each item has been completed or otherwise resolved for acceptance, and list has been endorsed and dated by Associate Architect.
 - 4. Submit consent of surety to final payment.
 - 5. General Trades Contractor shall coordinate, obtain, and submit final occupancy permit.
 - 6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 7. Submit record drawings, maintenance manuals, damage or settlement survey, and similar final record information.
 - 8. Deliver tools, spare parts, extra stock, and similar items. Provide listing of the materials turned over to University, indicating quantity and date of delivery.
 - 9. Make final change-over of permanent locks and transmit keys to University. Advise University's personnel of change-over in security provisions.
 - 10. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
 - 11. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

1.3 AS-BUILT DOCUMENT SUBMITTALS

- A. Comply with the General Conditions Article 1 General Provisions and Article 10 Contract Completion for As-Built and Record Documents requirements
- B. The Contractor shall keep an accurate record of all deviations from the Contract Drawings and Specifications, including Change Orders. The Contractor shall neatly and correctly enter any deviations on Drawings affected and shall keep Drawings available for inspection.
- C. Upon completion of the Project and before final acceptance by the University, the Contractor shall make any final corrections to the Drawings and certify to the accuracy of each print by signature thereon.

- D. General: Do not use as-built documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to as-built documents for the Associate's and University's reference during normal working hours.
- E. As-built Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark set to show actual installation where installation varies substantially from the Work as originally shown. Mark whichever 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.
1. Mark as-built sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
 2. Mark new information that is important to the University, but was not shown on Contract Drawings or Shop Drawings.
 3. Note related Change Order numbers where applicable.
 4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
- F. As-built Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with specification text and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot be readily discerned later by direct observation. Note related as-built drawing information and product data.
1. Upon completion of the Work, submit As-built Specifications to the Associate for transmittal to the University's records.
- G. Operating and Maintenance Manuals: Provide a minimum of three copies of operating and maintenance manuals for items requiring more than ordinary custodial care. Refer to individual Specification Sections for information to be provided as a part of the operating and maintenance manuals. Organize operating 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. Include the following types of information:
1. Emergency instructions.
 2. Parts list for major equipment.
 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. Format for Manuals:
 - a. Inside Cover: Title of Project, The Ohio State University, address, date of submittal, name of Contractor, and name of manufacturer.
 - b. Second Page: Index.
 - c. Third Page: Introduction to First Section containing a complete written description of equipment or system.
 - d. First Section: Written description of system contents, where equipment is located in the building, how each part functions individually and how system works as a whole, concluded with a list of items requiring service and the service needed or reference to the manufacturer's data in the binder which describes proper service.
 - e. Second Section: A copy of each shop drawing with an index at the beginning of the section.
 - f. Third Section: A copy of manufacturer's operating instructions with an index at the beginning of the section.

- g. Fourth Section: A list of all equipment incorporated into job, contractor's purchase order numbers, supplier's name and address.
- H. Warranty Manual: In a separate but similar binder to the Maintenance Manual, each Contractor shall include all required guarantees, warranties, and maintenance contracts for items as they exist. Statements of warranty shall be jointly signed by manufacturer, installer, and Contractor and shall identify the Project by name, commission number, and address. In addition, indicate duration and expiration of each warranty and guarantee. .
- I. Where warranties from Contractors, suppliers or manufacturers are limited to materials only, the Contractor shall furnish warranties to provide labor required to remove any defective work and install the replacement materials.
 - 1. Warranty durations are to begin at time of Contract Completion.
- J. Product Certificates Required from Other Suppliers and Installers: Under a separate but similar binder, each Contractor shall include all required Certificates of Compliance with applicable codes with regard to flame and smoke ratings. Refer to Section 01 33 00, Submittal Procedures, for requirements.
- K. Other Items: Include updated list of Suppliers and Subcontractors.

PART 2 – PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

- A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with University's designated personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:
 - 1. Maintenance manuals.
 - 2. Record documents.
 - 3. Spare parts and materials.
 - 4. Tools.
 - 5. Lubricants.
 - 6. Fuels.
 - 7. Identification systems.
 - 8. Control sequences.
 - 9. Hazards.
 - 10. Cleaning.
 - 11. Warranties and bonds.
 - 12. Maintenance agreements and similar continuing commitments.
- B. As part of instruction for operating equipment, demonstrate the following procedures:
 - 1. Start-up.
 - 2. Shutdown.
 - 3. Emergency operations.
 - 4. Noise and vibration adjustments.
 - 5. Safety procedures.
 - 6. Economy and efficiency adjustments.
 - 7. Effective energy utilization.
- C. Complete start-up testing of systems, and instruction of University's operating and maintenance personnel.

1. Before final acceptance, perform equipment demonstrations for University's representatives as required under various Sections of the Specifications.
2. Prepare a Certificate of Demonstration for each system or item of equipment demonstrated. The Certificate shall indicate date and time of demonstration, system demonstrated, typewritten name and signature of demonstrator and other demonstration participants.
3. Arrange directly with University to determine date and time of demonstrations and name(s) of University's representatives who will attend.

3.2 FINAL CLEANING

- A. General: Comply with General Conditions, Paragraph 10.1 Final Cleaning
 1. General: Progress cleaning during construction is included in Section 01 50 05 Temporary Facilities and Controls.
- B. Each Contractor shall be responsible for the final cleaning of their work just prior to turnover to the University. This shall include removal of debris, marks, stains, dirt, paint, etc., regardless of origin. The finished product shall be cleaned to the complete satisfaction of the Construction Manager, Associate and University before final approval and acceptance of the work is requested and granted.
- C. Cleaning: 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. Remove labels that are not permanent labels. Comply with manufacturer's instructions. Complete the following cleaning operations before requesting inspection for Beneficial Occupancy.
 1. General Trades Contractor:
 - a. Clean interior of exterior glass and interior glass. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - b. Clean exposed interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Leave exposed concrete floors broom clean. Vacuum carpeted surfaces. Mop resilient floor surfaces.
 2. Plumbing Contractor: Clean plumbing fixtures, including any fixtures used during construction for final cleaning.
 3. HVAC Contractor: Refer to requirements under temporary heat in Section 01 50 05 Temporary Facilities and Controls.
 - a. Wipe surfaces of mechanical equipment. Remove excess lubrication and other substances.
 4. Electrical Contractor:
 - a. Replace bulbs used for temporary lighting during the construction period.
 - b. Clean electrical devices and light fixtures, removing bugs, debris, stains, rust, and dirt for final inspection.
- D. Remove temporary protection and facilities installed for protection of the Work during construction.
- E. 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 University's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
 1. Where extra materials of value remaining after completion of associated Work have become the University's property, arrange for disposition of these materials as directed by the University.

END OF SECTION 01 77 00