

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

SUMMARY OF CHANGE(S):

REV	DATE	DESCRIPTION / JUSTIFICATION	AUTHOR
0	11 March 2025	LL-01 IFB	M. Lindstrom

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes expanded requirements regarding project closeout procedures, final cleaning, adjusting project record documents, operation and maintenance data, and warranties described to permit direct reference from individual product specification sections.
- B. Related Sections:
  - 1. Section 23 05 93 – Air Systems Testing, Adjusting, and Balancing.

1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for A/E's review.
- B. Provide submittals to Owner required by authorities having jurisdiction as outlined in this section.

1.3 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment or for each phase or portion of the work to be turned over to the Owner. Secure Owner acceptance that the cleaning has been completed per the requirements.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean equipment (interiors and exteriors), floors, and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.

- D. Replace filters of operating equipment.
- E. Clean debris from roofs, gutters, downspouts, and drainage systems.
- F. Clean site: Sweep paved areas, rake clean landscaped surfaces.
- G. Remove waste and surplus materials, rubbish, and construction facilities from site.

#### 1.4 STARTING OF SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Owner 7 days prior to start-up of each item.
- C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Verify circuit breakers and overloads have been set in accordance with the short circuit and coordination study.
- G. Verify fuses are installed with ratings as indicated on Drawings and schedules.
- H. Verify arc-flash labels are in place in accordance with the arc-flash study.
- I. Execute start-up under supervision of applicable manufacturer's representative in accordance with manufacturers' instructions.
- J. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- K. Submit a written report in accordance with Section 01 33 00 - Submittal Procedures that equipment or system has been properly installed and is functioning correctly.

#### 1.5 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. Demonstrate Project equipment and instruct in classroom environment located at the site and instructed by manufacturer's representative who is knowledgeable about the Project.

- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within 6 months.
- D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain the aspects of operation and maintenance.
- E. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- G. Required instruction time for each item of equipment and system is specified in individual sections.

#### 1.6 TESTING, ADJUSTING AND BALANCING

- A. Owner will appoint, employ, and pay for services of independent firm to perform testing, adjusting, and balancing.
- B. Independent firm will perform services specified in Section 23 05 93– Air System Testing, Adjusting, and Balancing.
- C. Reports will be submitted by independent firm to A/E indicating observations and results of tests and indicating compliance or non-compliance with requirements of Contract Documents.

#### 1.7 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

## 1.8 SEMIFINAL REVIEWS AND COMPLETION LISTS

- A. Semifinal Reviews: When the Contractor is of the opinion that the entire project , or portion of project is substantially complete, request a Semifinal Review as required by the Contract terms. Such notice to be given to Owner and A/E at least 3 working days before the requested review date.
- B. If because of acts or omissions of the Contractor, Owner is required to conduct more than one Semifinal Review of the project, or portion of project, A/E may charge the Owner for the additional services required, and such costs will be deducted from the money still due the Contractor.
- C. Completion List: items recorded in semifinal reviews will be documented in a Completion List that will be developed by Owner and Contractor. Contractor to take action on Completion List items and document resolution prior to requesting a Final Review.

## 1.9 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. BIM
  - 4. Addenda.
  - 5. RFI and design bulletins.
  - 6. Change Orders and other modifications to the Contract.
  - 7. Reviewed Shop Drawings, Product Data, and Samples.
  - 8. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. For Specifications and Equipment submittals: Legibly mark and record at each product section description of actual products installed provide a complete set of equipment submittal tabulated by specification section, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured depths of foundations in relation to finish floor datum.
  - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  4. Field changes of dimension and detail.
  5. Details not on original Contract drawings.
- G. Project Photography and Video: turn over electronic files for project photography and video. See requirements of Section 01 30 00 – Administrative Requirements.]
- H. 3D Model(s): turn over electronic files of 3D model(s) and supporting files.
- I. Submit documents to Owner.

#### 1.10 OPERATION AND MAINTENANCE DATA

- A. Submit data bound in 8-1/2 inch x 11 inch (A4) text pages, three D side ring binders with durable plastic covers.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- E. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
1. Part 1: Directory, listing names, addresses, and telephone numbers of Owner representatives, A/E, Contractor, Subcontractors, and major equipment suppliers.
  2. Part 2: Operation and maintenance instructions, arranged by system and process flow and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
    - a. Significant design criteria.
    - b. List of equipment.
    - c. Parts list for each component.
    - d. Operating instructions.
    - e. Maintenance instructions for equipment and systems.
    - f. Maintenance instructions for finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
  3. Part 3: Project documents and certificates, including the following:
    - a. Shop drawings and product data.
    - b. Air and water balance reports.
    - c. Test reports.
    - d. Certificates.
    - e. Originals and Photocopies of warranties and bonds.

- F. Electronic Format: in addition to the format indicated above, provide the Contents above in electronic format. Provide scanning as required. Include the electronic format on CD or DVD in each of the volumes.
- G. Where a Commissioning Agent (CA) is part of the project, the commissioning agent may require an alternate organization and Content to the operations and maintenance manuals. Where this is the case, Contractor to abide by the direction established by the Commissioning Agent.
- H. The Owner will review the operation and maintenance data furnished by Contractor as a submittal per the process established in Section 01 33 00 - Submittal Procedures.

#### 1.11 MANUAL FOR MATERIALS AND FINISHES

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. A/E will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within 10 days after acceptance.
- C. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy be reviewed and returned after final inspection, with A/E comments. Revise content of document sets as required prior to final submission.
- D. Submit two sets of revised final volumes in final form within 10 days after final inspection.
- E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom manufactured products.
- F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.
- H. Additional Requirements: As specified in individual product specification sections.
- I. Include listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

## 1.12 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Owner will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within 10 days after acceptance.
- C. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy will be reviewed and returned after final inspection, with A/E comments. Revise content of document sets as required prior to final submission.
- D. Submit two sets of revised final volumes in final form within 10 days after final inspection.
- E. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
- F. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications.
- G. Include color coded wiring diagrams as installed.
- H. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and special operating instructions.
- I. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- J. Include servicing and lubrication schedule, and list of lubricants required.
- K. Include manufacturer's printed operation and maintenance instructions.
- L. Include sequence of operation by controls manufacturer.
- M. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- N. Include control diagrams by controls manufacturer as installed.
- O. Include Contractor's coordination drawings, with color coded piping diagrams as installed.
- P. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

- Q. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- R. Include test and balancing reports as specified in Section 01 40 00 - Quality Requirements.
- S. Additional Requirements: As specified in individual product specification sections.
- T. Include listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

#### 1.13 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.
- B. At the conclusion of Work, turn over to Owner and obtain signed receipts for keys to lockable doors, panels, gates, controls, etc., properly identified and tagged.
- C. Deliver to Project site and place in location as directed by Owner; obtain receipt prior to final payment.

#### 1.14 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within 10 days after completion of applicable item of work.
- B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
- C. Verify documents are in proper form, contain full information, and are notarized.
- D. Co-execute submittals when required.
- E. Include Table of Contents and assemble in three D side ring binder with durable plastic cover.
- F. Submit prior to final Application for Payment.
- G. Time Of Submittals:
  - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing date of acceptance as beginning of warranty or bond period.

### 1.15 FINAL REVIEWS AND FINAL PUNCH LISTS

- A. Final Reviews: When the Contractor is of the opinion that the entire project , or portion of project is complete and that Completion List item resolutions are documented, request a Final Review as required by the Contract terms. Such notice to be given to Owner at least 5 working days before the requested review date.
- B. If because of acts or omissions of the Contractor, Owner is required to conduct more than one Final Review of the project, or portion of project. Owner may charge the Contractor for the additional services required.
- C. Completion List: items recorded in semifinal reviews will be documented in a Completion List that will be developed by Owner and transmitted to Contractor. Contractor to take action on Completion List items and document resolution prior to requesting a final review.

### 1.16 MAINTENANCE SERVICE

- A. Furnish service and maintenance of components indicated in specification sections for 1 year from date of Substantial Completion.
- B. Examine system components at frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by manufacturer of original component.
- D. Do not assign or transfer maintenance service to agent or Subcontractor without prior written consent of Owner.

### 1.17 CONTRACT CLOSEOUT CHECKLIST

- A. Complete and deliver to the Owner the following items (as applicable) prior to final payment application:
  - 1. Verification of completion of the Punch List.
  - 2. Fully executed certificate of Substantial Completion.
  - 3. Local, state, or federal inspections and/or certifications.
  - 4. 1-year workmanship and materials guarantee.
  - 5. Roofing guarantee.
  - 6. Wood door guarantee.
  - 7. Commissioning is complete, including action items.
  - 8. Major mechanical/electrical equipment guarantees.
  - 9. Operation and maintenance manuals (six sets).
  - 10. Project as-built documents.
  - 11. Contractor lien release.
  - 12. Consent of surety.

13. Response to field orders.
14. Change orders fully executed.
15. Spare parts and maintenance materials.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION