

SECTION 01 70 00**CONTRACT CLOSEOUT****PART 1 - GENERAL****1.1 REQUIREMENTS INCLUDED**

- A. Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the Work.
- B. Execute cleaning, during progress of Work, and at completion of the Work, as required by General Conditions.
- C. Maintain at site for Owner one Record Set copy of following:
 - 1. Contract Drawings.
 - 2. Contract Project Manual.
 - 3. Addenda.
 - 4. Change Orders and other Modifications to Contract.
 - 5. Engineer issued Field Orders or other written instructions or clarifications.
 - 6. Accepted Shop Drawings, Product Data and Samples.
 - 7. Field Test Reports.
- D. Compile Product Data and related information appropriate for Owner's maintenance and operation of products and equipment furnished under Contract.
- E. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.
- F. Compile specified warranties.
- G. Review submittals to verify compliance with Contract Documents.

1.2 RELATED SECTIONS

- A. Conditions of the Contract: Fiscal provisions, legal submittals and additional administrative requirements.
- B. Section 01 01 00 - Summary of Work.
- C. Section 01 30 00 - Submittals.
- D. Respective Sections of Specifications: Closeout Submittals Required of Trades.

1.3 SUBSTANTIAL COMPLETION

- A. When Contractor considers Work is substantially complete, he shall submit to Engineer:
 - 1. Written certification that Work, or designated portion thereof, is substantially complete.
 - 2. List of items to be completed or corrected.
- B. Within reasonable time after receipt of such certificate, Engineer will make examination to determine status of completion.
- C. Should Engineer determine that Work is not substantially complete:
 - 1. Engineer will promptly notify Contractor in writing, stating reasons.
 - 2. Contractor shall remedy deficiencies in Work, and send a second written notice of substantial completion to Engineer.
 - 3. Engineer will re-examine Work.
- D. When Engineer concurs that Work is substantially complete, he will:
 - 1. Prepare Certificate of Substantial Completion on AIA Form G704, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by Engineer.
 - 2. Submit Certificate to Owner and Contractor for written acceptance of responsibilities assigned in Certificate.
- E. After Work is substantially complete, Contractor shall:
 - 1. Allow Owner occupancy of Project under provisions stated in Certificate of Substantial Completion.
 - 2. Obtain Certificate of Occupancy.
 - 3. Complete work listed for completion or correction within designated form.
 - 4. Perform final cleaning.

1.4 FINAL INSPECTION

- A. When Contractor considers Work complete, he shall submit written certification that:
 - 1. Contract Documents have been reviewed.
 - 2. Work has been examined for compliance with Contract Documents.
 - 3. Work has been completed in accordance with Contract Documents.
 - 4. Equipment and systems have been tested in presence of Owner's representative and are operational.
 - 5. Work is completed and ready for final examination.
- B. Engineer will make examination to verify status of completion with reasonable promptness after receipt of such certification.
- C. Should Engineer consider that Work is incomplete or defective:

1. Engineer will promptly notify Contractor in writing, listing incomplete or defective work.
 2. Contractor shall take immediate steps to remedy stated deficiencies, and send second written certification to Engineer that Work is complete.
 3. Engineer will re-examine Work.
- D. When Engineer finds that Work is acceptable under Contract Documents, he shall request Contractor to make closeout submittals.

1.5 REINSPECTION FEES

- A. Should Engineer perform re-examinations due to failure of Work to comply with claims of status of completion made by Contractor:
1. Owner will compensate Engineer for such additional services.
 2. Owner will deduct amount of such compensation from final payment to Contractor.

1.6 CLEANING DISPOSAL REQUIREMENTS

- A. Hazards Control:
1. Store volatile wastes in covered metal containers.
 2. Remove containers from premises daily.
 3. Prevent accumulation of wastes which create hazardous conditions.
 4. Provide adequate ventilation during use of volatile or noxious substances.
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws:
1. Do not burn or bury rubbish and waste materials on Project site.
 2. Do not dispose of wastes into streams or waterways.
 3. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.

1.7 MAINTENANCE OF RECORD DOCUMENTS AND SAMPLES

- A. Store documents and samples in Contractor's field office apart from documents used for construction.
1. Provide files and racks for storage of documents.
 2. Provide locked cabinet or secure storage space for storage of samples.
- B. File documents and samples in accordance with CSI Masterformat.
- C. Maintain documents in clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- D. Make documents and samples available at all times for examination by Engineer.

- E. Incomplete or out of order documents and samples will be grounds for not approving application for payment.
- F. Provide felt tip marking pens for recording information in color code designated by Engineer.
- G. Label each document "PROJECT RECORD" in neat large printed letters.
- H. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
- I. Maintain clean, undamaged set of mylar Contract Drawings and Shop Drawings as Record Drawings.
 - 1. Mark set to show actual installation where installation varies substantially from Work as originally shown.
 - 2. Obtain from Engineer and pay for reproduction costs of reproducible mylar sepias and blue line prints for keeping accurate records during construction. Each subcontractor shall post, on the project record drawings, any changes occurring during the pay period, prior to submission of application for payment. Failure to maintain such records shall constitute cause for denial of a progress payment. Drawings will be reviewed during progress meetings. Upon completion of the project the Contractor shall transfer all conditions and marks to a final set of 3 mil. mylars furnished by the Owner.
 - 3. Record Drawings shall be created on 3-mil sepia mylar reproductions made at Contractor's expense from either Engineer's original drawings with seals and logos removed (architectural, structural, and MEP) or from Contractor's shop electronic drawings. Additionally, provide as-builts in AutoCadd 2020 or higher format on CD with printed as-builts.
- J. Contractor shall retain competent drafting services, as necessary, for transfer of "mark-up notations" from information recorded during construction.
- K. Legibly mark in color code designated by Engineer to record actual construction on designated Record Drawing prints:
 - 1. Depths of various elements of foundation in relation to finish first floor datum.
 - 2. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 - 4. Field changes of dimension and detail.
 - 5. Changes made by Field Order or by Change Order.
 - 6. Details not on original contract drawings.
 - 7. Record information on a daily basis, or as often as necessary.
 - 8. References to related shop drawings and modifications.
 - 9. Mark whichever drawing is most capable of showing conditions fully and accurately.

10. Where shop drawings are used, record cross-reference at corresponding location on Contract Drawings.
 11. Give particular attention to concealed elements that would be difficult to measure and record at later date.
 12. Mark new information that is important to Owner, but was not shown on Contract Drawings or Shop Drawings.
 13. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on cover of each set.
- L. Contractor provide 1 set of reproducible mylars and 2 sets of bluelines of Record Drawings. Reproduction costs will be paid by Owner through Engineer.
- M. Legibly mark each Specification Section to record Addenda items:
1. Manufacturer, trade name, catalogue number, and Supplier of each Product and item of equipment actually installed.
 2. Changes made by Field Order or by Change Order.

1.8 OPERATING AND MAINTENANCE DATA

- A. Form of Submittals:
1. Prepare data in form of an instructional manual for use by Owner's personnel.
 - a. Assemble data in durable 3-ring binders, indexed and tabbed for each separate product or piece of operating equipment.
 - b. Provide 3 copies of each manual type to Owner.
- B. Content of Manuals:
1. Provide neatly typewritten table of contents for each volume, arranged in systematic order.
 - a. Contractor, name of responsible principal, address and telephone number.
 - b. A list of each product required to be included, indexed to content of volume.
 - c. List, with each product, name, address and telephone number of subcontractor or installer and local source of supply for parts and replacement.
 - d. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
 2. Product Data:
 - a. Include only those sheets which are pertinent to specific product.
 - b. Annotate each sheet to clearly identify specific product or part installed and data applicable to installation.

3. Drawings:
 - a. Supplement Product Data with drawings as necessary to clearly illustrate relations of component parts of equipment and systems and control and flow diagrams.
 - b. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
 - c. Do not use Project Record Documents as maintenance drawings.
4. Provide written text, as required to supplement Product Data for particular installation, organized in consistent format and in logical sequence of instructions for each procedure.
5. Provide copy of each warranty, bond and service contract issued.

C. Manual for Equipment and Systems:

1. Submit five copies of complete manuals in final form.
2. Content, for each unit of equipment and system, as appropriate:
 - a. Description of unit and component parts.
 - 1) Function, normal operating characteristics, and limiting conditions.
 - 2) Performance curves, engineering data and tests.
 - 3) Complete nomenclature and commercial number of replaceable parts.
 - b. Operating procedures:
 - 1) Start-up, break-in, routine and normal operating instructions.
 - 2) Regulation, control, stopping, shutdown and emergency instructions.
 - 3) Summer and winter operating instructions.
 - 4) Special operating instructions.
 - c. Maintenance Procedures:
 - 1) Routine operations.
 - 2) Guide to "trouble-shooting".
 - 3) Disassembly, repair and reassembly.
 - 4) Alignment, adjusting and checking.
 - d. Servicing and lubrication schedule.
 - e. Manufacturer's printed operating and maintenance instructions.
 - f. Description of sequence of operation by control manufacturer.
 - g. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
 - h. As-installed control diagrams by controls manufacturer.
 - i. Each subcontractor's coordination drawings including as-installed color coded piping diagrams.
 - j. Charts of valve tag numbers, with location and function of each valve.

- k. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
 - l. Other data as required under pertinent sections of specifications.
- 3. Content, for each electric and electronic system, as appropriate:
 - a. Description of system and component parts.
 - 1) Function, normal operating characteristics, and limiting conditions.
 - 2) Performance curves, engineering data and tests.
 - 3) Complete nomenclature and commercial number of replaceable parts.
 - b. Circuit directories of panelboards.
 - 1) Electrical service.
 - 2) Controls.
 - 3) Communications.
 - c. As-installed color coded wiring diagrams.
 - d. Operating procedures:
 - 1) Routine and normal operating instructions.
 - 2) Sequences required.
 - 3) Special operating instructions.
 - e. Maintenance procedures:
 - 1) Routine operations.
 - 2) Guide to "trouble-shooting".
 - 3) Disassembly, repair and reassembly.
 - 4) Adjustment and checking.
 - f. Manufacturer's printed operating and maintenance instructions.
 - g. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
 - h. Other data as required under pertinent sections of specifications.
- 4. Additional requirements for operating and maintenance data as included in respective Sections of Specifications.
- 5. Provide complete information for products and equipment specified in:
 - a. Division 22: Plumbing Systems.
 - b. Division 23: Mechanical Systems.
 - c. Division 26: Electrical Systems.

1.9 WARRANTIES AND BONDS

A. Submittal Requirements:

1. Assemble warranties and service and maintenance contracts, executed by each of respective manufacturers, suppliers, and subcontractors.
2. Table of Contents: Neatly typed, in orderly sequence.
3. Provide complete information for each item.
 - a. Product or work item.
 - b. Firm, with name of principal, address and telephone number.
 - c. Scope.
 - d. Date of beginning of each warranty or service and maintenance contract.
 - e. Duration of Warranty or service maintenance contract.
 - f. Provide information for Owner's personnel:
 - 1) Proper procedure in case of failure.
 - 2) Instances which might affect validity of warranty.
 - g. Contractor, name of responsible principal, address and telephone number.

B. Form of Submittals:

1. Prepare in duplicate packets.
2. Format:
 - a. Size: 8-1/2" x 11", punch sheets for standard 3-ring binder, fold larger sheets to fit into binders.
 - b. Identify each packet with typed or printed cover:
 - 1) Title: "WARRANTIES AND BONDS".
 - 2) Title of Project.
 - 3) Name of Contractor.
3. Binders: Commercial quality, 3-ring, with durable and cleanable plastic covers.
4. Provide 3 complete copies of warranty and bond submittal in final form.

C. Time of Submittals:

1. Make submittals within 10 days after Date of Substantial Completion, prior to final request for payment.
2. For items of work, where acceptance is delayed materially beyond Date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.

D. Emergency Repairs: Owner reserves right to make emergency repairs as required to keep equipment or materials in operation or to prevent damage to persons or property without voiding Contractor's warranty or bond, or relieving Contractor of his responsibilities during contract, warranty or warranty periods.

1.10 ATTIC STOCK

- A. Provide attic stock of paint. Engineer will review for compliance with contract requirements. Contractor to submit letter of transmittal for each type of stock. Refer to section for amount.

1.11 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

- A. Evidence of compliance with requirements of governing authorities:
 - 1. Certificate of Occupancy.
 - 2. Certificates of Inspection: Mechanical and Electrical systems as required by respective sections.
- B. Project Record Documents.
- C. Operating and Maintenance Data, Instructions to Owner's Personnel:
 - 1. Submit one copy of completed data in final form 30 days prior to demonstration of equipment.
 - 2. Copy will be returned accepted or with comments for revisions.
- D. Warranties and Bonds.
- E. Certificate of Insurance for Products and Completed Operations.

1.12 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

- A. Contractor's Affidavit of Payment of Debts and Claims: AIA G706.
- B. Contractor's Affidavit of Release of Liens: AIA G706A with following:
 - 1. Consent of Surety to Final Payment: AIA G707.
 - 2. Contractor's Release or Waiver of Liens.
 - 3. Separate releases of waivers of liens from subcontractors, suppliers and others with lien rights against property of Owner, together with list of those parties.
- C. All submittals shall be duly executed before delivery to Owner.

1.13 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of accounting to Engineer.
- B. Statement shall reflect all adjustments to Contract Sum:
 - 1. Original Contract Sum.
 - 2. Additions and deductions resulting from:

- a. Previous Change Orders.
 - b. Allowances.
 - c. Unit Prices.
 - d. Deductions for uncorrected Work.
 - e. Penalties and Bonuses.
 - f. Deductions for liquidated damages.
 - g. Deductions for re-examination payments.
 - h. Other adjustments.
- 3. Total Contract Sum, as adjusted.
 - 4. Previous payments.
 - 5. Sum remaining due.
- C. Engineer will prepare final Change Order, reflecting approved adjustments to Contract Sum which were not previously made by Change Orders.

1.14 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in operation, adjustment and maintenance of operating equipment and systems. Operating and maintenance manual shall constitute basis of instruction.
- B. Review contents of manual with Owner's personnel in full detail to explain all aspects of operations and maintenance.
- C. Amount of time to be devoted to instructions shall be reasonable and consistent with size and complexity of equipment.

1.15 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit final Application for Payment in accordance with procedures and requirements stated in Conditions of Contract.

1.16 POST-CONSTRUCTION INSPECTION

- A. Prior to expiration of one year from Date of Substantial Completion, Owner will make visual inspection of Project in company of Contractor to determine whether further correction of Work is required in accordance with provisions of Contract.
- B. Owner will promptly notify Contractor, in writing, of any observed deficiencies.
- C. Contractor will contact Owner to arrange time and establish schedule for correction of deficiencies.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION