

SECTION 01001

BASIC REQUIREMENTS

1 PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Summary of Work: Contract, work by owner, contractor use of premises, future work.
- B. Contract Considerations: Cash allowances, contingency allowance, inspection and testing allowances, schedule of values, applications for payment, change procedures, alternates.
- C. Coordination and Meetings: Coordination, field engineering, cutting and patching, meetings, progress meetings, equipment electrical characteristics and components, examination, preparation, cutting and patching.
- D. Submittals: Submittal procedures, construction progress schedules, proposed products list, shop drawings, product data, samples, manufacturers' installation instructions, manufacturers' certificates.
- E. Quality Control: Quality assurance - control of installation, Tolerances, References, Mock-ups, Inspection and testing laboratory services, Manufacturers' field services and reports.
- F. Construction Facilities and Temporary Controls: Temporary electricity, temporary lighting for construction purposes, temporary heat, temporary ventilation, telephone service, temporary water service, temporary sanitary facilities, barriers and fencing, water control, exterior enclosures, interior enclosures, protection of installed work, security, access roads, parking, progress cleaning and waste removal, project identification, field offices and sheds, removal of utilities, facilities, and controls.
- G. Material and Equipment: Products, transportation, handling, storage, and protection, products options, substitutions.
- H. Starting of Systems: Starting systems, demonstration and instructions, testing, adjusting and balancing.
- I. Contract Closeout: Contract closeout procedures, final cleaning, adjusting, project record documents, operation and maintenance data, spare parts and maintenance materials, warranties.

1.2 WORK BY OWNER

- A. Items noted as NIC (Not in Contract), will be furnished and installed by Owner beginning at Substantial Completion.
- B. The Owner shall be responsible for paying for and obtaining general construction permits. These permits are exclusive of specific allowance fees indicated within paragraph 1.7.D below.

1.3 DAVIS BACON REPORTING AND WAGE DETERMINATIONS

- A. The construction of this project will not be governed by the Davis Bacon Act.

1.4 CONTRACTOR USE OF PREMISES

- A. Limit use of premises to allow:
 1. Owner occupancy.
 2. Work by others and work by owner.
 3. Use of premises by public.

1.5 SCHEDULE OF VALUES

- A. Submit schedule on AIA G703 (Requisition Continuation Sheet) standard form, similar electronic media printout will be considered.
- B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.

1.6 APPLICATIONS FOR PAYMENT

- A. Submit five copies of each application on AIA G702 (Requisition Form), similar electronic media printout will be considered.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Payment Period: Monthly.

1.7 CASH ALLOWANCES

- A. Costs Included in Allowances: Cost of Product to Contractor or subcontractor and applicable taxes, less applicable trade discounts and delivery to site.
- B. Costs Not Included in Allowances But Included in Contract Sum/Price: Product delivery to site and handling at the site, including unloading, uncrating, and storage; protection of Products from elements and from damage and labor for installation and finishing.
- C. Difference in cost will be adjusted by Change Order.
- D. Allowances Schedule:
 1. Building Exterior Signage - \$5,000.00
 2. Electrical Service Connection Fee - \$25,000.00
 3. Gas Connection Fee - \$5,000.00
 4. Telephone Connection Fee - \$7,500.00
 5. Street Opening, Sewer and Storm Water Connection Fee - \$45,000.00
 6. Card Access and Control System - \$15,000.00

1.8 TESTING AND INSPECTION

- A. Testing and Inspection: Include in the contract sum the cost of all material testing, including compaction and concrete testing and inspections as specified in the contract documents and shall include the cost of engaging testing or inspection firm, execution of

tests or inspection, and reporting of results, incidental labor and facilities required to assist testing or inspection firm, costs of re-testing upon failure of previous tests as determined by Architect/Engineer.

1.9 CHANGE PROCEDURES

- A. Stipulated Sum/Price Change Order: Based on Proposal Request with General Contractor profit and overhead delineated and Contractor's fixed price quotation or Contractor's request for a Change Order as approved by Architect/Engineer.
- B. Change Order Forms: AIA G701 (Change Order Form), similar electronic media printout will be considered.
- C. Change Orders must be approved by MSHA, a representative of the Construction Lender, the Owner and the Architect.

1.10 UNIT PRICES: Due to unknowns regarding final pile lengths, the GC is asked to monitor and record the lengths of all piles driven for this project. The GC shall provide a cost/per linear foot unit price for each type of pile driven. The GC shall include within the base bid an assumed value of the pile lengths based upon the geotechnical survey. The unit pricing will be used to establish the actual cost of the pile work. Partial billing will be acceptable and shall be based upon the unit pricing and work completed during the requisition period

1.11 ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option.
- B. Coordinate related Work and modify surrounding Work as required.
- C. Schedule of Alternates:
 - 1. **Alternate No. 1:** The contractor is asked to provide additive or deductive pricing information pertaining to providing concrete sidewalks in lieu of brick sidewalk materials.
 - 2. **Alternate No. 2:** The contractor is asked to provide ACT-4, 2x4 grid system and tile within all fit-up spaces in lieu of ACT-1.

1.12 COORDINATION

- A. Coordinate scheduling, submittals, and Work of the various sections of specifications to ensure efficient and orderly sequence of installation of interdependent construction elements. No claims for additional Time will be considered if the Work has not been properly coordinated.
- B. Verify utility requirement characteristics of operating equipment are compatible with building utilities.
- C. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable.
- D. In finished areas, conceal pipes, ducts, and wiring within the construction.

1.13 FIELD ENGINEERING

- A. Employ a Land Surveyor to locate a reference datum and protect survey control and reference points.
- B. Establish elevations, lines, and levels and certify that elevations and locations of the Work conform with the Contract Documents.
- C. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

1.14 PRECONSTRUCTION PREINSTALLATION MEETINGS

- A. Owner will schedule a preconstruction meeting for all affected parties.
- B. When required in individual specification section, convene a preinstallation meeting at Project site prior to commencing work of the section.

1.15 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.
- B. Preside at meetings, record minutes, and distribute copies within two days to those affected by decisions made.

1.16 EQUIPMENT ELECTRICAL CHARACTERISTICS AND COMPONENTS

- A. Motors: NEMA MG1 Type; specific motor type is specified in individual specification sections.
- B. Wiring Terminations: Terminal lugs to match branch circuit conductor; size terminal lugs to NFPA 70.
- C. Cord and Plug: Minimum 6 foot cord and plug including grounding connector; cord of longer length is specified in individual sections.

1.17 CUTTING AND PATCHING

- A. Employ original installer to perform cutting and patching new Work; restore Work with new Products.
- B. Submit written request in advance of cutting or altering structural or building enclosure elements.
- C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

- D. Cut masonry and concrete materials using masonry saw or core drill. Restore Work with new Products in accordance with requirements of Contract Documents.
- E. Cut from finished side of surfaces to concealed side.
- F. Protect existing construction from damage during cutting and patching.
- G. Fit Work tight to adjacent elements. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- H. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. Refinish surfaces to match adjacent finishes in a manner that will eliminate evidence of patching and refinishing.

1.18 SUBMITTAL PROCEDURES

- A. Submittal form to identify Project, Contractor, Subcontractor or supplier; and pertinent Contract Document references.
- B. Submittals to Architect shall consist of two prints and one sepia if larger than 11"X17" and 3 copies if 11"X17" or smaller. Submittals will be reviewed by Architect/Engineer and sepia will be marked and returned for printing of distribution set with architect's/engineer's comments included.
- C. Apply Contractor's stamp, signed or initialed, certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- D. Identify variations from Contract Documents and Product or system limitations, which may be detrimental to successful performance of the completed Work.
- E. All submittals shall conform to the requirements of the Contract Documents and, thus, presentation of a submittal shall represent by the contractor that the product is in conformance. Products that do not conform with the Contract Documents shall be presented for review as Substitutions (see Substitutions, below).
- F. Revise and resubmit submittals as required; identify all changes made since previous submittal.
- G. Distribute submittals reviewed by Architect/Engineer to project site and all affected parties.
- H. Allow 15 working days for review and return of submittals by architect.
- I. Do not allow submittals requiring Architect/Engineer's action stamp to be used on the project site without marking.
- J. Architect/Engineer's action stamp is self-explanatory.

1.19 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule in duplicate within 15 days after date of Owner-Contractor Agreement for Architect/Engineer review.

- B. Submit revised schedules with each Application for Payment, identifying changes since previous version. Indicate estimated percentage of completion for each item of Work at each submission.
 - C. Submit a horizontal bar chart with separate line for each major section of Work or operation, identifying first workday of each week.
- 1.20 PROPOSED PRODUCTS LIST
- A. Within 15 days after date of Owner-Contractor Agreement, submit list of major Products proposed for use, with name of manufacturer, trade name, and model number of each product.
- 1.21 PROPOSED SUBCONTRACTOR/SUPPLIER LIST
- A. Within 15 days after date of Owner-Contractor Agreement, submit list of major subcontractors/suppliers proposed, with indication of trade/product type.
- 1.22 PRODUCT DATA
- A. Product Data For Review:
 - 1. Submitted to Architect/Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
 - 2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in CONTRACT CLOSEOUT.
 - B. Product Data For Information:
 - 1. Submitted for the Architect/Engineer's benefit as contract administrator or for the Owner.
 - C. Product Data For Project Close-out:
 - 1. Submitted for the Owner's benefit during and after project completion.
 - D. Submit the number of copies which the Contractor requires, plus three copies which will be retained by the Architect/Engineer.
 - E. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this project.
- 1.23 SHOP DRAWINGS
- A. Shop Drawings For Review:
 - 1. Submitted to Architect/Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

2. After review, produce copies and distribute in accordance with the SUBMITTAL PROCEDURES article above and for record documents purposes described in CONTRACT CLOSEOUT.
- B. Shop Drawings For Information:
 1. Submitted for the Architect/Engineer's benefit as contract administrator or for the Owner.
 - C. Shop Drawings For Project Close-out:
 1. Submitted for the Owner's benefit during and after project completion.
 - D. Submit the number of opaque reproductions which Contractor requires, plus three copies which will be retained by Architect/Engineer.

1.24 SAMPLES

- A. Samples For Review:
 1. Submitted to Architect/Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
 2. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in CONTRACT CLOSEOUT.
- B. Samples For Information:
 1. Submitted for the Architect/Engineer's benefit as contract administrator or for the Owner.
- C. Samples For Selection:
 1. Submitted to Architect/Engineer for aesthetic, color, or finish selection.
 2. Submit samples of finishes from the full range of manufacturers' standard colors, in custom colors selected, textures, and patterns for Architect/Engineer selection.
 3. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in CONTRACT CLOSEOUT.
- D. Submit samples to illustrate functional and aesthetic characteristics of the Product.
- E. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Architect/Engineer's selection.

1.25 MANUFACTURER INSTALLATION INSTRUCTIONS

- A. When specified in individual specification sections, submit manufacturer printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.

1.26 MANUFACTURER CERTIFICATES

- A. When specified in individual specification sections, submit certifications by manufacturer to Architect/Engineer, in quantities specified for Product Data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

1.27 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions.
- C. Comply with specified standards as minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

1.28 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that utility services are available, of the correct characteristics, and in the correct location.

1.29 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

1.30 TOLERANCES

- A. Monitor fabrication and installation tolerance control of installed Products over suppliers, manufacturers, Products, site conditions, and workmanship, to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply fully with manufacturers' tolerances.

1.31 REFERENCES

- A. Conform to reference standards by date of issue current as of date of Contract Documents.
- B. Should specified reference standard conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Reference Standards have the same force and effect as if bound herein and include publications of the following:
 - 1. Maine State Housing Authority (MSHA) Supplemental Construction Standards
 - 2. American National Standards Institute (ANSI).

3. American Concrete Institute (ACI).
4. American Institute of Steel Construction (AISC).
5. American Plywood Association (APA).
6. American Society for Testing and Materials (ASTM).
7. American Society of Civil Engineers (ASCE).
8. American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc. (ASHRAE).
9. American Society of Mechanical Engineers (ASME).
10. Americans with Disabilities Act (ADA).
11. American Water Works Association (AWWA).
12. American Welding Society (AWS).
13. Building Officials and Code Administrators International Inc. (BOCA).
14. Consumer Product Safety Commission (CSPC).
15. Factory Mutual (FM).
16. National Electric Manufacturers Association (NEMA).
17. National Fire Protection Association (NFPA).
18. Underwriters Laboratories, Inc. (UL).
19. US Department of Commerce, National Bureau of Standards (NBS).
20. Federal, State and local codes and regulations.

1.32 MOCK-UPS

- A. Tests will be performed under provisions identified in this section and identified in respective product specification sections.
- B. Accepted mock-ups are representative of quality required for the Work.
- C. Where mock-up has been accepted by Architect/Engineer and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so.

1.33 TESTING AND INSPECTION LABORATORY SERVICES

- A. Owner will appoint and employ services of independent firm to perform testing and inspection. Pay for services from specified Cash Allowance.
- B. Independent firm will perform tests, inspections, and other services as required.
- C. Cooperate with independent firm; furnish samples as requested.
- D. Re-testing required because of non-conformance to specified requirements will be charged to Contractor.

1.34 CORRELATION AND INTENT

- A. Contract Documents are complementary, and elements of the Work required by one shall be as binding as if required by all. The intent of the Documents is to include all items necessary for the proper execution and completion of the Work.
- B. Where discrepancies or conflicting requirements exist among the Contract Documents and/or applicable reference standards, the Contractor shall assume the greater quantity or quality level, normally the most costly. Refer conflicting requirements to the Architect/Engineer for interpretation before proceeding.

1.35 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, to initiate instructions and conduct warranty inspections when necessary.
 - B. Report observations and site decisions or instructions that are supplemental or contrary to manufacturers' written instructions.
- 1.36 EXAMINATION
- A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
 - B. Verify utility services are available, of correct characteristics, and in correct location.
- 1.37 PREPARATION
- A. Clean substrate surfaces prior to applying next material or substance.
 - B. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.
- 1.38 TEMPORARY ELECTRICITY
- A. Cost: Contractor shall provide and pay for power service required from source.
 - B. Provide temporary electricity and power outlets for construction operations, connections, branch wiring, distribution boxes, and flexible power cords as required. Do not disrupt Owner's need for continuous service.
- 1.39 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES
- A. Provide and maintain temporary lighting for construction operations.
 - B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
 - C. Permanent building lighting may not be utilized during construction. Repair, clean, and replace lamps to achieve new condition at end of construction.
- 1.40 TEMPORARY HEAT
- A. Provide heating devices with temporary units and heat as needed to maintain specified conditions for construction operations.
 - B. Pay cost of energy used.
 - C. Provide and pay for operation as per manufacturers recommended procedures, maintenance, and regular replacement of filters and worn or consumed parts.
 - D. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.
- 1.41 TEMPORARY VENTILATION

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- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- 1.42 TELEPHONE SERVICE
- A. Provide, maintain and pay for telephone and telephone facsimile service to field office at time of project mobilization. Allow Owner, Architect/Engineer and inspecting authorities incidental use.
- 1.43 TEMPORARY WATER SERVICE
- A. Provide, maintain and pay for suitable quality water service required for construction operations.
- 1.44 TEMPORARY SANITARY FACILITIES
- A. Provide and maintain required facilities and enclosures. New facilities may not be used.
 - B. Maintain in clean and sanitary condition.
- 1.45 BARRIERS AND FENCING
- A. Provide barriers and/or fencing to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage.
 - B. Construction: Contractor's option, as allowed by authorities having jurisdiction.
- 1.46 WATER CONTROL
- A. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
 - B. Provide erosion control in accordance with environmental regulations and approvals.
- 1.47 EXTERIOR ENCLOSURES
- A. Provide temporary insulated weather tight closures to exterior openings to permit acceptable working conditions and protection of the Work.
- 1.48 PROTECTING INSTALLED CONSTRUCTION
- A. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
 - B. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
 - C. 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.
 - D. Prohibit traffic from landscaped areas.
- 1.49 SECURITY

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- A. Provide security and facilities to protect Work and existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- 1.50 POLLUTION AND ENVIRONMENTAL CONTROL
- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
 - B. Provide dust control, erosion and sediment control, noise control, pest control and rodent control to allow for proper execution of the Work.
- 1.51 ACCESS ROADS
- A. Construct and maintain temporary roads accessing public thoroughfares to serve construction area. The use of Pine Grove Lane for construction access is prohibited.
- 1.52 PARKING
- A. Arrange for temporary parking areas to accommodate construction personnel.
- 1.53 PROGRESS CLEANING AND WASTE REMOVAL
- A. Collect and maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- 1.54 PROJECT IDENTIFICATION
- A. Provide an 8 foot wide x 4 foot high project sign of exterior grade plywood and wood frame construction, painted, to Architect/Engineer's design and colors.
 - B. Erect on site at location established by Architect/Engineer.
- 1.55 FIELD OFFICES AND SHEDS
- A. Office: Weather tight, with lighting, electrical outlets, heating, cooling and ventilating equipment, and equipped with sturdy furniture and drawing display table.
 - B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.
- 1.56 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS
- A. Remove temporary utilities, equipment, facilities, and materials, prior to Substantial Completion review.
 - B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
 - C. Clean and repair damage caused by installation or use of temporary work.
 - D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.57 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components specifically identified for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically identified or allowed by the Contract Documents.
- C. Provide interchangeable components of the same manufacture for components being replaced.
- D. Provide Products of the same type from the same manufacturer.

1.58 TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

- A. Transport, handle, store, and protect Products in accordance with manufacturer's instructions.

1.59 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions (or equal clause): Submit a request for substitution for any manufacturer not named.

1.60 SUBSTITUTIONS

- A. Architect/Engineer will consider requests for Substitutions only within 15 days after date of Owner-Contractor Agreement. .
- B. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- C. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
- D. Conditions: Substitutions will be considered under the following conditions:
 - 1. Revisions to the Contract Documents are not required.
 - 2. Proposed changes are in keeping with the intent of the Contract Documents.
 - 3. The specified product or construction method cannot be provided within the Contract Time, if not due to failure by the Contractor to pursue the work promptly.
 - 4. The specified product or construction method cannot receive approval by governing authorities, and the substitution can be approved.
 - 5. A substantial advantage is offered to the Owner in terms of cost, time or maintenance.

6. The specified product or construction method is not compatible with other materials, and the substitution is compatible.
7. The specified product or construction method cannot receive a required warranty, and the substitution can be warranted.
8. The Contractor will bear the impact of additional cost or time needed to provide the substitution, including design services.
9. The Contractor will be responsible for coordinating the substitution with other Work.

1.61 STARTING SYSTEMS

- A. Provide seven days notification prior to start-up of each item.
- B. Ensure that each piece of equipment or system is ready for operation.
- C. Execute start-up under supervision of responsible persons in accordance with manufacturers' instructions.
- D. Submit a written report that equipment or system has been properly installed and is functioning correctly.

1.62 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion. .
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at designated location.

1.63 TESTING, ADJUSTING, AND BALANCING

- A. Contractor will appoint, employ, and pay for services of an independent firm to perform testing, adjusting, and balancing.
- B. Reports will be submitted by the independent firm to the Architect/Engineer indicating observations and results of tests and indicating compliance or non-compliance with specified requirements and with the requirements of the Contract Documents.
- C. Cooperate with independent firm; furnish assistance as requested.
- D. Re-testing required because of non-conformance to specified requirements will be charged to the Contractor.

1.64 CONTRACT 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 Architect/Engineer's inspection.
- B. Submit final Application for Payment identifying total adjusted Contract Sum/Price, previous payments, and amount remaining due.

1.65 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Thoroughly clean interior and exterior surfaces exposed to view. Vacuum carpeted and soft surfaces, wash and polish glass, reflective and smooth hard surfaces.
- C. Clean debris from site, roofs, gutters, downspouts, and drainage systems.
- D. Replace filters of operating equipment.
- E. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.66 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.67 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of Contract Documents to be utilized for record documents.
- B. Record actual revisions to the Work. Record information concurrent with construction progress.
- C. Specifications: Legibly mark and record at each Product section a description of actual Products installed.
- D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction.
- E. Submit original and two photocopies of record documents to Owner with claim for final Application for Payment.

1.68 OPERATION AND MAINTENANCE DATA

- A. Submit two sets prior to final inspection, bound in 8-1/2 x 11 inch text pages, three D side ring binders with durable covers.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project.
- C. Internally subdivide the binder contents with permanent page dividers, logically organized, with tab titles clearly printed under reinforced laminated plastic tabs.

1.69 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.
- B. Deliver to Project site and place in location as directed obtain receipt prior to final payment.

1.70 WARRANTIES

- A. Provide duplicate notarized copies.
- B. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers.
- C. Submit prior to final Application for Payment.

...END OF SECTION