

# CAMP VERDE COMMUNITY LIBRARY

Black Bridge Road . Camp Verde, Arizona

“INSPIRING FUTURE GENERATIONS”



Joel Westervelt Architect

1 10/3/2014 3/7/2014

Partial Specifications for Communications Bid (E-Rate), 2/6/2015



<b>DIVISION 5</b>	<b>METALS</b>
05100	Structural Metals
05500	Architectural Metal Fabrication
<b>DIVISION 6</b>	<b>WOODS &amp; PLASTICS</b>
06100	Rough Carpentry
06200	Finish Carpentry
06402	Architectural Woodwork
<b>DIVISION 7</b>	<b>THERMAL AND MOISTURE PROTECTION</b>
07141	Cold Fluid-Applied Single Coat Waterproofing
07180	Traffic-Bearing Roof Deck Surfacing
07210	Thermal protection- insulation
07214	Spray Foam Insulation
07600	Flashing and Sheet Metal
07900	Caulking & Sealants
<b>DIVISION 8</b>	<b>DOORS &amp; WINDOWS</b>
08110	Steel Frames
08210	Interior Wood Doors
08410	Aluminum Storefront (doors & windows)
08410	Sliding Wood Door System
08625	Skylights
08710	Finish hardware
08800	Glazing
<b>DIVISION 9</b>	<b>FINISHES</b>
09110	Light Gauge Framing
09200	Three-coat stucco system
09290	Gypsum Board Assemblies
09300	Tile
09380	Stone Countertops
09510	Suspended acoustic ceiling
09681	Carpet Tile
09820	Acoustic insulation & sealants
09900	Paints & Coatings
<b>DIVISION 10</b>	<b>SPECIALTIES</b>
10150	Restroom partitions
10400	Signage
10520	Fire Extinguisher
10800	Restroom accessories
<b>DIVISION 11</b>	<b>EQUIPMENT</b>
Not used.	

---

**DIVISION 12**                      **FURNISHINGS**

---

Not used.

---

**DIVISION 13**                      **SPECIAL CONSTRUCTION**

---

13650                      Pre-Engineered Metal Buildings

---

**DIVISION 14**                      **CONVEYING SYSTEMS**

---

14240                      Elevator

---

**DIVISION 15**                      **MECHANICAL**

---

15010                      General Mechanical Requirements  
15020                      Trenching and Backfill for Mechanical Systems  
15060                      Pipe and Pipe Fittings  
15080                      Piping Specialties  
15100                      Valves  
15250                      Mechanical Systems Insulation  
15350                      Building Natural Gas Supply System  
15401                      Building Water Supply System  
15405                      Building Soil and Waste System  
15406                      Building Roof Drainage System  
15450                      Plumbing Fixtures, Trim, and Equipment  
15500                      Fire Protection System  
15800                      Air Tempering System and Equipment  
15990                      Testing, Adjusting, and Balancing of Mechanical Systems

---

**DIVISION 16**                      **ELECTRICAL**

---

16001                      Electrical work – general requirements  
16005                      Electrical demolition  
16110                      Raceways  
16114                      Cable trays  
16118                      Ductbanks, handholes, and manholes  
16120                      Wire and cable  
16135                      Electrical boxes and fittings  
16143                      Wiring devices  
16170                      Low voltage disconnect switches  
16190                      Supporting devices  
16195                      Electrical identification  
16425                      Switchboards and panelboards  
16426                      Service entrance switchgear  
16452                      Grounding  
16476                      Circuit breakers  
16477                      Fuses  
16480                      Motor controllers  
16500                      Interior and exterior lighting  
16721                      Fire alarm and detection systems

## SECTION 01100 - SUMMARY

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Addenda and other Division 01 Specification Sections apply to this Section.

#### 1.02 SUMMARY

##### A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Work restrictions.

##### B. Related Requirements:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

#### 1.03 PROJECT INFORMATION

##### A. Project Identification:

###### **Camp Verde Community Library**

Project Location: 130 Black Bridge Road. Camp Verde, Arizona.

##### B. Owner:

###### **Town Of Camp Verde**

395 S. Main St  
Camp Verde, Az 86322

##### C. Contracting Officer's Technical Representative:

###### **Ron Long, P.E.**

Public Works Director  
Town of Camp Verde  
395 S. Main Street  
Camp Verde, AZ 86322  
Office: (928) 554-0821  
[Ron.Long@campverde.az.gov](mailto:Ron.Long@campverde.az.gov)

D. Architect:

**Joel Westervelt Architect**

93 Arnold Street

Camp Verde, Arizona 86322

928.567.2255

jwverde@hotmail.com

1.04 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and in general consists of the following:

1. Construction of an approximately 17,000 square-foot, two story, steel frame, Library Facility
2. Demolition and disposal.
3. Misc. site work.
4. Alternates

1.05 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
  - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
  - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.06 WORK RESTRICTIONS

A. Owner will continue to occupy current facility until new building has been constructed. After certificate of occupancy has been issued, library operation will be transferred to new library. See plans for limits of construction.

B. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

D. Nonsmoking Facility: Smoking is not permitted on Project site is not permitted.

E. Controlled Substances: Use of tobacco and alcohol products and other controlled substances on Project site is not permitted.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

## SECTION 01330

### SUBMITTAL PROCEDURES

#### PART 1 GENERAL

##### 1.01 CONSTRUCTION SCHEDULE

- A. Submit 3 copies of the Construction Schedule, broken down by Trade or Material, to the Architect for approval prior to the first Pay Request. Schedule shall be by CPM or bar graph type, and shall show proposed starting and completion dates for each Trade and activity for the Work. Submit 3 copies of updated schedule at each Pay Request field review to the Architect.
- B. Submit completed construction schedule to Architect no later than 15 calendar days after date of Agreement and update monthly during construction. Submit current schedule with each application for payment.
- C. Submit completed material delivery schedule to the Architect no later than 20 calendar days after the date of the Agreement. Identify material critical to the progress of the Project and those for which long lead time in procurement is anticipated. Indicate projected dates for submittal, order and delivery of such material.
- D. Provide neatly organized electronic documentation in PDF format of all information listed above.

##### 1.02 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- A. Shop Drawings:
  1. Following Contractor's review and approval, submit to the Architect one reproducible transparency and two prints of each Drawing for review.
  2. The Architect will review the Drawings and affix a stamp to the transparency indicating the findings of the review, and will return same to the Contractor.
  3. Comments, if any, will be noted directly on the transparency.
  4. The Contractor shall then print and distribute the appropriate number of copies to the various Trades and to Contractor's job personnel as required.
  5. If a transparency is indicated to be corrected and resubmitted, correct and resubmit as outlined above.
  6. Fire Alarm System/Fire Sprinklers System Shop Drawings shall be submitted to the state and local Fire Marshal and obtain approval prior to installation. Fire Marshal inspection, test and approval of completed installations shall be obtained prior to acceptance of the systems and Substantial Completion of the Project.
  7. Provide neatly organized electronic documentation in PDF format of all information listed above.

- B. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow fourteen (14) calendar days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow fourteen (14) calendar days for review of each resubmittal.
  4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow twenty-one (21) calendar days for initial review of each submittal.
- C. Product Data:
1. Following Contractor's review and approval, submit to the Architect 6 copies of Manufacturer's catalogs and brochures as required by the Specifications. Resubmit corrected copies for approval in accordance with original submittal.
  2. Provide neatly organized electronic documentation in PDF format of all information listed above.
- D. Samples:
1. Following Contractor's review and approval, submit to the Architect samples of materials in quantities and sizes as required by the Specifications.
  2. Submittals required other than for selection of color, texture, fabric or finish shall be given to the Architect at a time determined by the Contractor, which will allow for resubmittal and which will not cause and delay in the Work.
  3. Corrected samples shall be resubmitted for approval as per the original submittal.
- E. Color Selection: Within 30 days of the date of Agreement, submit to the Architect for approval, samples and appropriate information required for the selection of colors, textures, fabric and finishes for the entire Project. Final selection of color, textures, fabrics or finishes will not be made until all applicable and related submittals have been provided. If the Contractor fails to provide the required samples and related information within the time period, the Architect shall have the option of selecting colors, textures, fabric, finishes or specific materials from those specified or approved and the Contractor shall be obligated to provide the material selected by the Architect.
- F. Submit Shop Drawings and Samples for only those items specifically mentioned in the Specifications. Contractor shall be responsible for obtaining Shop Drawings required for the progress of the Work, even though such Shop Drawings may not require the Architect's review.
- G. Partial Submittals: Submittals which are partial or contain only a portion of the data required to describe the item or installation will be rejected, unless such partial submittal is coordinated with the Architect prior to submittal, and final approval of all such items will be withheld pending receipt of all required information.

- H. Deviations: All deviations from the Contract Documents shall be clearly identified in the submittal. Submittal shall include only items included in the specifications or which have been approved in advance by the Architect in accordance with requirements of Section 01 60 00. Submittals containing items which have not been approved in advance by the Architect will be rejected.

### 1.03 QUALITY CONTROL SUBMITTALS

A. Equipment Lists: Following Contractor's review and approval, submit to the Architect 6 complete lists of major items of mechanical, plumbing and electrical equipment and materials, within 30 calendar days after date of Agreement. Submit all items at one time. Partial list will not be acceptable. Submittals shall include the Manufacturer's Specifications, weights, space requirements, physical dimensions, rating of equipment and supplemental information requested by the Architect. Submit performance curves for pumps and fans. Where a submittal sheet describes items in addition to that item being submitted, delete such items. Clearly note equipment and materials which deviate from those shown or specified in size, weight, required clearances, and location of access. Modifications to the Work as shown or specified in submittals shall be indicated and shall be provided by the Contractor as a part of the Work.

B. Manufacturer's Instructions: Where Specifications require Work to be furnished, installed or performed in accordance with a specified product Manufacturer's instructions, distribute copies of such instructions to concerned parties.

C. Provide neatly organized electronic documentation in PDF format of all information listed above.

END OF SECTION

**SECTION 01569  
CONSTRUCTION CLEANING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Cleaning, recycling and disposal of waste materials, debris, and rubbish during construction.

**1.02 RELATED SECTIONS**

- A. Section 01710 - Final Cleaning.
- B. Section 01740 - Construction Waste Management
- C. Individual Specifications Sections: Specific cleaning for Product or work.
- D. General provisions of the Contract Documents.
- E. Pertinent sections of Division 1 General Conditions.

**PART 2 PRODUCTS**

**2.01 EQUIPMENT**

- A. Provide covered containers for deposit of waste materials, debris, and rubbish.

**PART 3 EXECUTION**

**3.01 CLEANING**

- A. Maintain areas under Contractor's control free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, another closed or remote spaces, prior to closing the space.
- C. Periodically clean interior areas to provide suitable conditions for Owner-occupied areas.
- D. Broom clean interior areas prior to start of surface finishing, and continue cleaning on an as-needed basis.
- E. Control cleaning operations so that dust and other particulate will not adhere to wet or newly-coated surfaces.
- F. Clean all floor surfaces between building entrance points and work area on a daily basis by sweeping or wet mopping hard surfaces, and vacuuming carpets.
- G. Provide moistened walk-off mats at entry of all work areas to control the spread of construction dust.

**1.02 DISPOSAL**

- A. Remove waste materials, debris, and rubbish from site daily and process as directed in the Waste Management Plan, Section 01740.

**END OF SECTION**

## SECTION 01600

### PRODUCT REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 SUMMARY:

###### A. WORK INCLUDED:

1. This Section includes general requirements for the quality, delivery, storage, handling, and installation of products.
2. This Section establishes criteria for the Contractor's options in selecting products and procedures for requesting substitutions of materials, products, and equipment specified herein.

B. RELATED WORK: Additional requirements or procedures are specified in the individual Sections of Divisions 2 through 16 of these Specifications.

C. RELATED DOCUMENTS: Drawings, General and Supplementary Conditions, and applicable provisions of Division 1 Sections apply to this Section.

##### 1.02 GENERAL PRODUCT REQUIREMENTS:

A. GENERAL QUALITY: All products shall be of current manufacture, new and unused, free from all defects, and of the best quality of their respective kinds.

B. CONTRACTOR'S RESPONSIBILITY: Assume complete responsibility for the furnishing, delivery, handling, and installation of all products in accordance with manufacturers' recommendations or instructions, accepted trade practices, published reference standards, and the requirements of the Contract Documents.

###### C. MANUFACTURER'S INSTRUCTIONS:

1. Unless otherwise indicated, all manufactured products shall be handled, stored, and installed in strict accordance with the manufacturer's printed instructions.
2. Distribute copies of manufacturer's instructions to all parties involved in the installation, including the Architect. Maintain one complete set of all manufacturers' instructions on the jobsite until completion and approval of the entire Work.

3. Request supervisory assistance from product manufacturers as required to clarify manufacturer's instructions.
  4. In the event that jobsite conditions or installation requirements contained in the Contract Documents are in conflict with the manufacturer's instructions, notify the Architect for clarification or direction prior to starting installation of the affected work.
- D. MATERIAL SAFETY DATA SHEETS: Maintain at the jobsite in an accessible and clearly marked location copies of manufacturer's latest Material Safety Data Sheets (MSDS) for all toxic or hazardous materials used in the Work.
- E. VOC COMPLIANCE:
1. Architectural coatings manufactured on or after September 13, 1999, shall comply with the applicable requirements of the U.S. Environmental Protection Agency "National Volatile Organic Compound Emission Standards for Architectural Coatings," (Title 40 CFR Part 59, Subpart D), unless local or state VOC regulations are more stringent.
  2. Architectural coatings include, but are not limited to, field-applied paints, stains, varnishes, lacquers, primers, undercoaters, and similar topical coatings; penetrating and topical water repellents; bituminous coatings and mastics; form release compounds; concrete curing and sealing compounds; and anti-graffiti coatings.
  3. Labeling of architectural coatings shall include the date of manufacture and VOC content.
- F. PACKAGING AND DELIVERY:
1. Do not deliver products to the site until ready for installation or until adequate, protected storage facilities are available.
  2. Deliver manufactured products in the manufacturer's original containers, protective wrapping, or packaging, with labels intact and legible.
- G. PROTECTION AND STORAGE:
1. Store materials requiring protection from the elements above ground on suitable platforms or blocking, and under cover to protect from rain, snow, or frost.
  2. Protect products subject to damage from sunlight or ultraviolet rays with suitable opaque coverings.
  3. Store bulk products or materials, such as sand, gravel, topsoil, etc. in designated stockpile areas, and protect from contamination by dust, dirt, running water, and other deleterious substances, or from inadvertent mixing with adjacent materials.
- H. PROTECTION OF OTHER WORK: Protect finished surfaces, openings, jambs, and soffits through, over, or under which products will be moved or introduced into the Work. Repair or replace any such surfaced damaged during the handling of products at no additional cost to the Owner.

- I. REPLACEMENT OF DAMAGED PRODUCTS: Replace, at no additional cost to the Owner, products which are damaged or contaminated during shipment or storage.

1.03 PRODUCT OPTIONS:

A. METHOD OF SPECIFYING PRODUCTS:

1. Products may be specified herein by one or more, or a combination of, methods, including reference to published standards (ASTM, ACI, etc), proprietary brand names and model or catalog numbers without options, proprietary brand names and model or catalog numbers followed by "or approved substitute" or similar phrases, or by performance criteria only.
2. Options for products specified under these methods are as follows:
  - a. Products Specified by Reference Standard Only: Any product meeting that standard will be accepted, upon receipt by the Architect of proof of compliance.
  - b. Products Specified by Proprietary Brand Name and Model or Catalog Number, and Noted as "No Substitution": Due to the unique features of the specified product, the requirement to match an existing product, or other requirements of the Owner, no options will be accepted.
  - c. Products Specified by Multiple Proprietary Brand Names and Model or Catalog Numbers: Any of the specified products will be accepted.
  - d. Products Specified by Proprietary Brand Name and Model Number Followed by "or Approved Substitute" or Similar Phrases: Submit a request for substitution in accordance with the substitution requirements noted herein below.
  - e. Products Specified by Performance Criteria: Submit complete manufacturer's literature describing in detail all applicable attributes of the product for evaluation and approval by the Architect. Submission of data relating to performance criteria must be received by the Architect not less than ten (10) days prior to the Bid Date, and approval will be noted in the form of an Addendum issued to all known Bidders.
3. Where "Acceptable Manufacturers" are listed in the specifications, such manufacturers are believed to produce materials or products which comply with the requirements of the Contract Documents.
4. Acceptable manufacturers are listed in alphabetical order, and do not imply order of preference except as noted below. Proof of compliance with the Contract Documents is the responsibility of the manufacturer and Contractor. Submit proof of compliance in accordance with the Article "SUBSTITUTION PROCEDURES" below. Requests for approval will be evaluated as follows:
  - a. Where specifications include a specific manufacturer and model number as the "Basis of Specifications" or "Basis of Detailed Drawings," the pertinent attributes of that product, such as aesthetic appearance, function, material quality, physical size, performance test results, ability to meet project time schedules, and availability of colors or finishes will be the basis for evaluation of other manufacturers' products.

- b. Where specifications are based on performance requirements, physical attributes, or reference standards, without a specific manufacturer and model number as the "Basis of Specifications" or "Basis of Detailed Drawings," written certification by an independent testing laboratory or testing agency will be acceptable proof of compliance.

1.04 SUBSTITUTION PROCEDURES:

A. PRIOR-TO-BID APPROVALS:

1. Any bidder, supplier, or manufacturer desiring to propose substitute products shall, not less than fourteen (14) days prior to Bid Opening Date, submit in a sealed envelope duplicate copies of his request, on company letterhead. Attach copies of product data, catalog cuts, shop drawings or other descriptive literature for the proposed substitute product, and include complete analysis showing point for point comparison to specified product. Submittals shall include a list of previous local or area use of the proposed product, including names of owner, architect, and general contractor for that use. Include samples of the proposed product if applicable.
2. Proposed substitute products will be evaluated on the following criteria:
  - a. Equivalence: The Architect will be the sole judge of the equivalency of proposed substitute products, and will, make written recommendation to the Owner concerning acceptance or rejection of the product.
  - b. Contractor's Satisfaction: Contractor's request must include written certification that the product he proposes is, in his best judgment, equal in all respects to the specified product, that it will fit in the space allocated, that it affords comparable ease of operation, maintenance, and service, that its appearance, life expectancy, and suitability for climate and use are comparable to the specified product, and that the proposed substitution is in the Owner's best interest.
  - c. Design Intent: No substitutions will be allowed which will result in changes to the Architect's design intent or to the aesthetic appearance of the Work.
  - d. Submittal Data: Manufacturer's data which is readily available to the Architect will not, in most cases, be sufficient for establishing proof of equality. Provide additional information, including laboratory test results from an independent, nationally recognized testing laboratory which certify types of materials used in the product, thickness, gauge or weight of materials, capacities, capabilities, coatings or finishes, functions, life expectancy, and operational information as applicable to the particular product.
  - e. Burden of Proof: The burden of proof that a proposed substitution is equal to the specified product lies solely with the Contractor. Under no circumstance will the Architect be expected or required to prove that a proposed product is not equal. .
3. Notification of acceptance of proposed substitutions will be made via the issuance of an Addendum not later than two (2) days prior to the Bid Opening Date. The addendum will list all accepted substitutions. Products not appearing on the list of approved substitutions shall be considered rejected, and no further consideration will be given.

B. SUBSTITUTIONS DURING CONSTRUCTION:

1. Substitutions will not be considered when they are indicated or implied on shop drawings or in product data submitted for Architect's review, without separate written request prior to submittal, nor will they be considered if substantial revision of the Contract Documents will be required.
2. Requests for substitutions made during construction will be considered only if one or more of the following criteria are met:
  - a. The substitution is required for compliance with subsequent interpretation of building code requirements or insurance regulations.
  - b. Specified products become unavailable due to no fault of the Contractor.
  - c. Subsequent information discloses inability of the specified product to perform as intended or to properly fit in the designated space.
  - d. Product manufacturer refuses to certify or warrant specified product as required.
  - e. When, in the Architect's judgment, acceptance of the proposed substitution would be substantially in the Owner's best interest due to cost savings, reduction of time, or other considerations.
3. Evaluation of substitution requests made during construction will be based on the same criteria as for requests made prior to Bid opening.
4. Substitution proposals made during construction shall be submitted to the Architect in sufficient time to allow for adequate review and evaluation. Delays and added costs associated with or resulting from inadequate supporting data, necessary extended evaluations, or re-design work caused by the substitution shall be the Contractor's responsibility.

1.05 RESPONSIBILITY FOR SUBSTITUTIONS: Acceptance of substitute products does not relieve the Contractor from the responsibility of complying with all other requirements of the Contract Documents and for coordinating substitutions with adjacent or otherwise affected Work. Additional costs or time delays resulting from substitutions will be the sole responsibility of the Contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

## SECTION 01700

### CONTRACT CLOSE-OUT

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. General procedures.
- B. Final acceptance.
- C. Record document submittals.
- D. Adjusting.

##### 1.02 RELATED SECTIONS

- A. Refer to Section 01569 and 01710 for cleaning requirements.
- B. General provisions of the Contract Documents.
- C. Pertinent sections of Division 1 General Conditions.

##### 1.03 GENERAL PROCEDURES

- A. Provide to Owner submittals required by governing authorities.
- B. Submit required warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
- C. Submit record drawings, record specifications, maintenance manuals, final project photographs, and similar record information required by Owner.
- D. Complete start-up testing of systems and instruction of Owner's personnel.
- E. Remove temporary facilities from premises, along with construction tools, mock-ups, and similar elements not indicated to remain as part of the Work.
- F. Complete final cleaning. Touch up, repair, and restore marred exposed finishes.
- G. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and Work is complete in accordance with Contract Documents and ready for the Contractor/Owner's inspection.

##### 1.04 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting inspection for certification of final acceptance and final payment, complete the following, listing exceptions in the request:
  - 1. Submit certified copy of Owner's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance.
  - 2. Submit final Application for Payment, accompanied by releases and supporting documentation not previously submitted and accepted. Identify total adjusted Contract Sum, previous payments, and amount remaining due.
  - 3. Submit final meter readings for utilities, measured record of stored fuel, and similar data as of date of Substantial Completion.
  - 4. Submit consent of surety to final payment.

5. Submit evidence of continuing insurance coverage complying with insurance requirements.
6. Refer to Supplementary Conditions for additional requirements.

1.05 RECORD DOCUMENT SUBMITTALS

- A. Do not use record documents for construction purposes.
  1. Protect from loss in secure location.
  2. Provide access to record documents for Architect's reference.
- B. Record Drawings: Maintain clean, undamaged set of blue or black line white-prints of contract drawings and shop drawings. Mark-up these drawings to show actual installation.
  1. Mark whichever drawing is most capable of showing conditions accurately.
  2. Give particular attention to concealed elements that would be difficult to measure and record at later date.
  3. At completion of Project, transfer all mark-ups to sepia drawings.
  4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on cover.
- C. Record Specifications: Maintain one copy of Project Manual, including Addenda, clean and undamaged. Enter marks and notations to indicate conditions of actual installation. 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 record drawing information and product data.
- D. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and markup of record drawings and specifications.
- E. Record Samples:
  1. Immediately prior to date of Substantial Completion, Contractor shall meet at the site with Owner's personnel to determine which of the submitted samples that have been maintained during progress of the Work are to be transmitted to Owner for record purposes.
  2. Comply with delivery to Owner's sample storage area.
- F. Operation and Maintenance Data: Requirements for Operation and Maintenance Manuals are specified in Section 01730.
- G. Provide neatly organized electronic documentation in PDF format of all information listed above.
- H. Submit Record Documents to Architect with claim for final Application for Payment.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 ADJUSTING

A. Adjust operating products and equipment for smooth and unhindered operation.

END OF SECTION

## SECTION 01730

### OPERATION AND MAINTENANCE DATA

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. Compile product data and related information appropriate for Owner's maintenance and operations. Modify data as required to accurately represent completed installations.
- B. Prior to Owner's acceptance of any portion or stage of the Work, instruct Owner's personnel in maintenance, equipment, and systems operations.

##### 1.02 FORM OF SUBMITTAL

- A. Prepare data in instructional manual form for use by Owner's personnel.
- B. Format:
  - 1. Size: 8 1/2 inches by 11 inches
  - 2. Paper: 20 pound minimum. White for typed pages.
  - 3. Text: Manufacturer's printed data, or neatly typewritten information.
  - 4. Drawings:
    - a. Provide reinforced punched binder tab, bound in with text.
    - b. Fold oversized drawings and place in pocket glued to inside of back cover.
  - 5. Provide fly-leaf for each separate product and major component parts of equipment followed by typed descriptions. Provide indexed tabs.
  - 6. Cover: Identify each volume with typed or printed title: OPERATION AND MAINTENANCE INSTRUCTIONS. Show:
    - a. Title of project, names of Owner, Architect, Engineer, Contractor, appropriate mechanical, electrical or other subcontractor, and completion date of project.
    - b. Identity of general subject matter covered in the Manual.
  - 7. Provide neatly organized, electronic documentation of all submitted hard copies in PDF format.
- C. Binders:
  - 1. Commercial quality three-ring binders with durable and cleanable plastic covers.
  - 2. Ring Size: As suitable to contents, 2-inch to maximum 3-inch.
  - 3. When multiple binders are used, correlate data into related grouping.
- D. Electronic Format:
  - 1. Provide neatly organized electronic documentation in PDF format of all information listed above.

1.03 SUBMITTAL SCHEDULE

- A. Submit three copies of preliminary drafts of proposed formats and outlines of contents.
- B. Contractor, Owner, and Owner's Representative will review and return with comments.
- C. Submit two copies of completed data in final form fifteen days prior to Final Inspection or Acceptance. After Final Inspection or Acceptance, copy will be returned with accompanying comments.
- D. Submit specified number of copies of approved data in final form ten days after final inspection or acceptance.

1.04 CONTENTS OF MANUAL

- A. Neatly typewrite table of contents for each volume. Arrange systematically, include the following information:
  - 1. Project Title
  - 2. Owner
  - 3. Contractor, name of responsible principal, address and telephone number.
  - 4. An indexed list of each product included.
  - 5. Show for each product, the name, address, and telephone number of the responsible:
    - a. Subcontractor or Installer.
    - b. Maintenance contractor, as appropriate.
    - c. the local source of supply for parts and replacements.
- B. Product Data:
  - 1. Submit original product literature only. Copies not acceptable.
  - 2. Include only sheets pertinent to specific product.
  - 3. Annotate each sheet:
    - a. Clearly identify specific product or part installed.
    - b. Clearly identify data applicable to installation.
    - c. Delete inapplicable information.
  - 4. Coordinate drawings with information in Project Record Documents to ensure correct illustrations of completed installations.
  - 5. Include Materials Safety Data Sheets (MSDS's) for each hazardous chemical where applicable.
- C. Drawings:
  - 1. Supplement product data with drawings required to clearly illustrate:
    - a. Relations of component parts of equipment and systems.
    - b. Control and flow diagrams.
  - 2. Coordinate drawings with information in Project Record Documents to ensure correct illustrations sequence for each procedure.
  - 3. Do not use Project Record Documents as maintenance drawings.
- D. Supplement product/installation data with typewritten text:
  - 1. Organize in consistent format under separate headings for different procedures.
  - 2. Provide logical installation sequence for each procedure.
- E. Copy of each warranty, bond, and service contract issued.
  - 1. Provide information sheet for Owner's personnel indicating:

- a. Proper procedures in event of failure.
- b. Instances which might affect validity of warranties and bonds.

1.05 MANUAL FOR MATERIALS AND FINISHES

- A. Submit five copies of complete manual in final form.
- B. Include for architectural products, applied materials, and finishes:
  - 1. Manufacturer's data, giving full information on products.
    - a. Catalog number, size and composition.
    - b. Color and texture designations.
    - c. Information required for reordering special manufactured products.
  - 2. Instructions for care and maintenance.
    - a. Manufacturer's recommendation for types of cleaning agents and methods.
    - b. Cautions against cleaning agents and methods detrimental to products.
    - c. Recommended schedule for cleaning and maintenance.
- C. Moisture-Protection and Weather-Exposed Products:
  - 1. Include product data.
  - 2. List applicable reference standards, chemical composition, and details of installation.
  - 3. Provide recommendations for inspections, maintenance and repair.

1.06 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit five copies of complete manuals in final form.
- B. Include for each unit of equipment and system, as appropriate:
  - 1. Unit and component part description including:
    - a. Function, normal operating characteristics, and limiting conditions.
    - b. Performance curves, engineering data, and tests.
    - c. Complete nomenclature and commercial number of all replaceable parts.
  - 2. Operating procedures such as:
    - a. Start-up, break-in, routine, and normal operating instructions.
    - b. Regulation control, stopping, and shut-down instructions.
    - c. Emergency operations.
    - d. Noise and vibration adjustments.
    - e. Safety procedures.
    - f. Economy and efficiency adjustments.
    - g. Effective energy utilization.
    - h. Summer and winter operating instructions.
    - i. Special operating instructions and the like.
  - 3. Maintenance procedures including:
    - a. Routine operations.
    - b. Guide to trouble-shooting
    - c. Disassembly, repair and re-assembly.
    - d. Alignment, adjusting and checking.
  - 4. Servicing and lubrication schedule listing lubricants required.

5. Manufacturer's printed operating and maintenance instructions.
  6. Description of operating and maintenance instructions.
  7. Original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance including:
    - a. Predicted life of parts subject to wear.
    - b. Items recommended to be stocked as spare parts.
  8. As-installed control diagrams by controls manufacturer.
    - a. Include one extra (each) framed and install under glass. Locate in room where directed.
    - b. Include locations of valves, strainers, drains, vents, dampers, and the like. Locate in reference to room numbers.
  9. Each contractor's coordination drawings with as-installed color coded piping diagrams, as applicable.
  10. Charts of valve tag numbers, with location and function of each valve.
  11. List of original manufacturer's spare parts, manufacturer's current prices, recommended quantities to be maintained in storage.
  12. Maintenance of Finishes: Furnish instructions for maintenance of finish materials. Print instructions on good quality paper, and encase in clear laminated plastic, watertight.
- C. Content, for each electric and electronic system, as appropriate:
1. Description of system and component parts including:
    - a. Function, normal operating characteristics, and limiting conditions.
    - b. Performance curves, engineering data, and tests.
    - c. Complete nomenclature and commercial number of replaceable parts.
    - d. Electrical manuals with shop drawings, schematic, and wiring diagrams (showing all external connections).
  2. Circuit directories of paperboards with:
    - a. Electrical service,
    - b. Controls.
    - c. Communications.
  3. As-installed color coded wiring diagrams.
  4. Operation procedures such as:
    - a. Routine and normal operation instructions.
    - b. Sequences required.
    - c. Special operation instructions.

5. Maintenance procedures including:
    - a. Routine operations.
    - b. Guide to trouble-shooting.
    - c. Disassembly, repair and re-assembly.
    - d. Adjustment and checking.
  6. Manufacturer's printed operation and maintenance instructions.
  7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.

## PART 2 - PRODUCTS

(Not Applicable)

## PART 3 - EXECUTION

### 3.01 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to Final Inspection or Acceptance, arrange for each installer of operating equipment to meet with and instruct Owner's designated personnel in proper operation and maintenance.
- B. If installer's instructors are not experienced in procedures, provide instruction by manufacturer's representatives.
  - a. Time and place of instruction period shall be as mutually agreeable.
  - b. Include detailed review of operation and maintenance manuals during instruction.

### 3.02 MAINTENANCE INSTRUCTION

- A. Include preventative maintenance instructions for each piece of equipment or system furnished requiring periodic inspections, lubrication, adjustment, to ensure optimum and continued performance of equipment.
- B. Include detailed review of the following:
  - a. Maintenance manuals.
  - b. Record documents.
  - c. Spare parts and materials.
  - d. Tools.
  - e. Lubricants.
  - f. Fuels.
  - g. Identification systems.
  - h. Control sequences.
  - i. Hazards.
  - j. Cleaning.
  - k. Warranties and bonds.
  - l. Maintenance agreements and similar continuing commitments.
- C. OPERATING INSTRUCTIONS
  - a. As part of instruction for operating equipment, demonstrate following procedures:
    - i. Start-up and shutdown.
    - ii. Emergency operations.
    - iii. Noise and vibration adjustments.
    - iv. Safety procedures.
    - v. Economy and efficiency adjustments.
    - vi. Effective energy adjustments.

END OF SECTION

## SECTION 01780

### CLOSEOUT SUBMITTALS

#### PART 1 - GENERAL

##### 1.01 SUMMARY:

- A. **WORK INCLUDED:** This Section includes closeout submittal requirements and procedures required at Substantial Completion and Final Completion of the Work.
- B. **RELATED WORK:** Additional specific requirements are specified in the various Sections of Divisions 2 through 16 of these Specifications.
- C. **RELATED DOCUMENTS:** Drawings, General and Supplementary Conditions, and applicable provisions of Division 1 Sections apply to this Section.

##### 1.02 SUBMITTALS:

###### A. GENERAL:

- 1. Required closeout submittals, whether specified herein or in the individual Division 2 through 16 Specifications Sections, must be delivered to the Architect prior to and as condition precedent to Final Completion of the Work.
- 2. Where the number of required submittals is not specified, submit not less than two (2) copies, including neatly organized, electronic documentation in PDF format.

###### B. RECORD DOCUMENTS - GENERAL:

- 1. Additional or specific requirements for Record Documents are indicated in individual Sections of these Specifications.
- 2. Do not use Record Documents for construction purposes; protect from deterioration and loss in a secure, fire resistive location.
- 3. Provide access to Record Documents for Architect's reference during normal working hours.
- 4. Review Record Documents for progress and accuracy at regularly scheduled job progress meetings.
- 5. Upon completion of mark-up, submit Record Documents to the Architect for the Owner's records.
- 6. Provide neatly organized electronic documentation in PDF format of all information listed above.

C. RECORD DRAWINGS (FIELD SET):

1. Maintain at the Project site during the course of the Work a white print set (blueline or blackline) of Contract Drawings and shop drawings in clean, undamaged condition, with mark-ups of actual installations which vary substantially from the Work as originally shown.
2. Mark whichever drawing is most capable of showing "field" condition fully and accurately; however, where shop drawings are used for mark up, record a cross-reference at corresponding locations on the Contract Drawings.
3. Mark changes or deviations with red erasable pencil. Where feasible, use other colors to distinguish between variations in separate categories of work.
4. Record new information which is recognized to be of importance to the Owner, but was not shown on either the Contract Drawings or shop drawings. Give particular attention to concealed work which would be difficult to measure and record at a later date. Note related Change Order or Field Order numbers where applicable.
5. Record all deviations in sizes, locations, or other features of work from the Contract Documents. It shall be possible, using these drawings, to correctly and easily locate, identify, and establish sizes of all piping, directions of flow, and other features of the Work which will be concealed in finished work or underground.
6. Establish locations of concealed and underground work by accurate dimensions to column lines or permanent walls, locating all bends or turns, and properly referencing invert elevations and rates of fall.
7. 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.
8. Provide neatly organized electronic documentation in PDF format of all information listed above.

D. FINAL RECORD DRAWINGS (AS-BUILTS):

1. Obtain a set of clean reproducible transparencies (mylar or sepia) of the original Contract Drawings from the Architect. The cost of these reproducible transparencies will be paid by the Owner.
2. Submit the final marked-up field copy of Record Drawings to the Architect for review and approval.
3. Upon receipt of field copy of Record Drawings back from the Architect, carefully and neatly transfer the information contained thereon to the reproducible transparency set of Drawings using standard drafting techniques. Call attention to deviations or changes by drawing a "cloud" around the affected area.
4. Clearly label each final Record Drawing with the words "AS-BUILT RECORD DRAWING", the date submitted, and the name or initials of the person preparing the drawing, stamped or neatly printed in conspicuous block letters near the lower left corner of the sheet. Label shall not cover or obscure other information.

5. Submit final Record Documents for Architect's review and approval. Make any necessary changes or corrections prior to delivery to the Owner.
6. Provide neatly organized electronic documentation in PDF format of all information listed above.

E. RECORD SPECIFICATIONS:

1. Maintain one copy of Specifications, including Addenda, Change Orders, and similar modifications issued in printed form during construction. Mark up variations of substance in actual Work in comparison with text of Specifications and modifications as issued.
2. Give particular attention to substitutions, selection of options, and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation.
3. Note related Record Drawing information and product data where applicable.
4. Label Record Specifications with the words "RECORD COPY" and the date submitted, stamped or neatly printed in block letters on the cover.
5. Provide neatly organized electronic documentation in PDF format of all information listed above.

F. OPERATIONS AND MAINTENANCE MANUALS:

1. Organize maintenance and operating manual information into suitable sets of manageable size, and bind into individual binders properly identified and indexed.
2. Include name and telephone number of manufacturer, local supplier, and installer, emergency instructions, spare parts listings, copies of warranties or guarantees, wiring diagrams, recommended "turn around" cycles, inspection procedures, shop drawings, product data, and similar applicable information.
3. Bind each manual of each set in a heavy duty, 3-ring, vinyl covered binder. Provide typed index dividers for each item contained therein, and include pocket folders for folded sheet information. Mark identification of both front and spine of each binder.
4. Unless otherwise indicated or directed by the Architect, submit three (3) copies of operating and maintenance manuals.
5. Provide neatly organized electronic documentation in PDF format of all information listed above.

- G. KEYS AND KEYING SCHEDULES: Neatly label and submit all change keys, master keys, and grandmaster keys, along with final keying schedule, to the Owner in accordance with the requirements of Section 08710.

- H. MAINTENANCE MATERIALS: Submit maintenance materials, extra or "attic" stock, and spare parts required by the various Specifications Sections to the Owner as directed. Submit materials in manufacturer's original packaging or containers, clearly marked as to color and location in the Work.
- I. OTHER DOCUMENTS: Submit the required number of the following additional documents which may be required by the various Specifications Sections:
1. Certificates of Compliance with applicable reference standards.
  2. Certificates of Inspection or other evidence of compliance with governmental agencies or authorities having jurisdiction over the Work.
  3. Warranties, guarantees, and bonds.
  4. Certificates of Insurance for products and completed operations,
  5. Written consent of Surety.
  6. Evidence of payment and release of liens for subcontractors, suppliers, and other goods and services.
  7. List of subcontractors, service organizations, and suppliers, including names of contact person, and telephone numbers for office hours and after hours emergency contact.
  8. Notarized letter signed by the Contractor acknowledging the date of Substantial Completion or other date or dates established for the commencement of warranties and guarantees.
  9. Provide neatly organized electronic documentation in PDF format of all information listed above.

END OF SECTION