

SECTION 01 11 00 – SUMMARY OF WORK

1.01: General

- A. Work includes new construction of an Assisted Living Facility operated by Concordis Senior Living, LLC of Ocala, Florida, as shown on the drawings and described in these specifications.
- B. Should conflict arise between the Drawings and the provisions of the Specifications, the Specifications shall govern.

1.02: Scope of Work

- A. Work includes the General Construction, Mechanical Work, Electrical Work, Civil Work, and Service Utilities for a new building.
- B. Project Description: The project includes new construction of an approximately 108,750 square foot two story 76 unit Assisted Living and 44 bed Memory Care Facility with 10 semi-private bedroom units, 46 private bedroom units, and 64 studio units, new parking, and other site improvements. The facility is of construction type IIA 1HR per 2012 IBC with I-2 occupancy for Assisted Living, and construction type VA 1HR with I-2 occupancy for Memory Care and type V (111) 1HR per 2012 LSC with Assisted Living occupancy group as Residential Board and Care and Memory Care occupancy group as New Healthcare. The building will have a fully automatic sprinkler system per NFPA 13.
- C. Add Alternates Description: Not Used
- D. Refer to the Drawings and the Specifications for the extent of the work to be done.
- E. The Scope of Work shall include all items, articles, materials, operations, and services mentioned, implied or scheduled on drawings and/or mentioned herein, including all labor, materials, equipment and incidentals necessary and required for their complete installation as indicated and specified.
- F. All work shall be executed in a workmanlike manner. All work and materials shall be of the respective kinds specified. If not explicitly specified or indicated by drawings or specifications, all work and materials shall be of the materials best adapted to the purpose.
- G. Execute all work where specified and not drawn, or drawn and not specified, as fully as if described in both ways. Should any workmanship or materials be wanted which are not directly or indirectly mentioned by the Specifications or drawings, but which are necessary for the proper fulfillment of the obvious intention thereof, each contractor shall understand same to be implied and shall provide for it in his or her bid, as fully as if it were particularly specified and indicated.

1.03 Related Requirements

- A. Applicable Provisions of the General Conditions and Supplemental General Conditions shall govern work under all Divisions of these Specifications.
- B. Applicable Notes and References called out on the drawings shall be considered a part of all Divisions of these Specifications.

1.04: Work by Owner

- A. The owner shall do all work specifically noted on the drawings "by owner" and as indicated herein.

1.05: Owner-Furnished Items

- A. Certain items shall be designated on the drawings and specifications as follows:
 - 1. "OFCI": Owner Furnished Contractor Installed
 - 2. "NIC" – Not in Contract
- B. Items so designated shall be provided by the owner
- C. Items for installation by the contractor will be furnished to the job site loading area for consignment to the contractor.

Owner shall assume responsibility for delivery in accordance with the construction schedule, obtaining installation drawings and instructions, submitting claims for transportation damages and arranging for guarantees and warranties.

Contractor shall designate required delivery dates and shall assume responsibility for newly delivered items upon uncrating and determining that the contents are complete and in satisfactory condition for installation.
- D. Installation by contractor for all owner-furnished items shall include delivery to installation locations, setting in place, building-in, leveling and attaching to walls, floors and/or ceilings, making mechanical or electrical connections and leaving items completely installed and in operable condition satisfactory to the Architect.

1.06: Work Sequence

- A. Not Used.

1.07: Contractor Use of Premises

- A. Contractor shall confine operations at the site to areas permitted by the contract documents, except as otherwise approved in writing by owner. Coordinate with owner where use of premises may conflict with owner's normal operation.

1.08: Salvage to Owner

- A. Not Used

1.09: Renovation Work

- A. Not Used

1.10: Instructions to Contractors

- A. All instructions shall be given by the Architect or his authorized representative. No other instructions shall be recognized.
- B. Instructions from Architect shall be made to the contractor or his authorized agent (job superintendent) for distribution to subcontractors or tradesman on the job. Subcontractors and material suppliers shall not contact the Architect to discuss the job, except through General Contractor or his authorized agent (job superintendent).

1.11: Contractor's Responsibility for Checking Equipment and Material

- A. The contractor shall be responsible that all equipment and materials selected by him or for him by his subcontractors or material suppliers conform exactly to the requirements of the drawings and specifications. Approval of manufacturer's name or product name by the given Architect does not relieve the contractor of the responsibility for providing materials and equipment that comply with the contract documents.

1.12: Lines and Levels

- A. It is Contractor's responsibility to establish and maintain all lines, levels and benchmarks necessary for execution of the work. Employ competent surveyor to lay out work and be responsible for its accuracy.

1.13: Dimensions and Measurements

- A. Dimensions govern. **Do not scale drawings.** Check all dimensions in the field and verify them with respect to the adjacent or incorporated work. Notify Architect immediately of any discrepancies found.

1.14: Contractor - Subcontractor

- A. Only the general contractor has any contractual relationship with the owner. Reference in mechanical and electrical specification and drawings to "Mechanical Contractor" or "Electrical Contractor" shall mean the general contractor to whom work is awarded.

1.15: Continuity of Use, Utilities, and Services

- A. Utilities
 - 1. Maintain all existing site and building utilities and services active. Coordinate any temporary shut-offs with Owner.
- B. Continuity of Building Ingress and Egress
 - 1. NOT USED
- C. Safety
 - 1. Contractor shall take all precautions necessary to protect persons and the work of other trades from injury and damage.
 - 2. Precautions shall be taken to ensure that the construction site is secured from accidental or casual entry and that passers-by are protected from injury or harm.

*****End of Section 01 11 00*****

SECTION 01 11 01 – SPECIFICATION ORGANIZATION AND LANGUAGE

1.01: Specification Order

- A. Numbering and order for the general work and the items included under each section and paragraph of the Specifications generally conform to the “CSI Manual of Practice Masterformat,” 2004.
- B. Numbering and order are merely for identification and may not be consecutive.
- C. Each section is listed in the Table of Contents. The General Contractor and Subcontractors are to check their copies of the specifications for completeness. Notify Architect regarding incomplete, missing or conflicting information.
- D. Arrangement of the divisions and sections are used for convenience and general compliance with customary subcontracting practices; however, work of each trade is not intended to be specified in any given section or division. General Contractor is responsible for reviewing full sets of drawings and specifications and ensuring complete construction. The Architect specifically warns against using partial sets of documents.

1.02: Specification by Reference

- A. Any material specified by reference to a specific number, symbol, or title of a specific standard, such as commercial standard, Federal Specification, trade association standards, or the like shall comply with the latest requirements thereof and any amendment or supplement thereto, in effect on the date of the Project Manual, except as modified.

1.03: Dimensions and Measurements/Drawings

- A. Dimensions govern. Do not scale drawings.
- B. Contractor is to check all dimensions in the field and verify them with respect to adjacent or incorporated work.
- C. Large-scale drawings take precedence over small scale.
- D. In general, detail drawings take precedence over plans, elevations, and cross sections.

*****End of Section 01 11 01*****

SECTION 01 11 05 – ARCHITECTS ELECTRONIC FILES

Part 1 - General

1.1 Related Documents

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

1.2 Summary

- A. Section includes Administrative and procedural requirements for use of Architect's electronic files.
- B. Related Sections:
 - 1. Division 01 Section "Project Management and Coordination."
 - 2. Division 01 Section "Submittal Procedures."
 - 3. Division 01 Section "Project Record Drawings."

1.3 Use Of Architect's Electronic Files

- A. Architect may make available to Contractor digital data files of Architect's Drawings for use in preparing shop drawings, coordination drawings, and project record drawings.
 - 1. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Documents.
 - 2. Files will be supplied via email or FTP in DWG format.
 - 3. Requested files shall be limited to the following
 - a. Floor plans
 - b. Reflected ceiling plans
 - c. Roof plans
- B. General Contractor shall execute a waiver of Liability for use of the Architects electronic files and shall be responsible for the use of electronic files.
 - 1. Liability Form: "CADD/ELECTRONIC FILE TRANSFER" included at the end of this Specification Section.
- C. The use of the electronic files shall only be used for this Project and for the identified purposes noted on the "CADD/ELECTRONIC FILE TRANSFER." files shall not be duplicated without written permission of the Architect.

*****End of Section 01 11 05*****



CADD/ELECTRONIC FILE TRANSFER

At your request, we will provide electronic files for your convenience and use in the preparation of shop drawings related to the Waterstone Assisted Living and Memory Care, Baton Rouge, Louisiana subject to the following terms and conditions:

We make no representation as to the compatibility of these files with your hardware or your software beyond the specified release of the referenced specifications.

Data contained on these electronic files are part of our instruments of service and shall not be used by you or anyone else receiving these data through or from you for any purpose other than as a convenience in the preparation of shop drawings for the referenced project. Any other use or reuse by you or by others will be at your sole risk and without liability or legal exposure to us. You agree to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against us, our officers, directors, employees, agents or sub-consultants that may arise out of or in connection with your use of the electronic files.

Furthermore, you shall, to the fullest extent permitted by law, indemnify and hold us harmless against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, arising out of or resulting from your use of these electronic files.

These electronic files are not construction documents. Difference may exist between these electronic files and corresponding hard-copy construction documents. We make no representation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed or sealed hard-copy construction documents prepared by us and the electronic files, the signed or sealed hard-copy construction documents shall govern. You are responsible for determining if any conflict exists. By your use of these electronic files, you are not relieved of your duty to fully comply with the contract documents, including, and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions and coordinate your work with that of other contractors for the project.

Because information presented on the electronic files can be modified, unintentionally or otherwise, we reserve the right to remove all indicia of ownership and/or involvement from each electronic display.

We will furnish you electronic files of the following drawing files:

Under no circumstances shall delivery of the electronic files for use by you be deemed a sale by us, and we make no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event shall we be liable for any loss of profit or any consequential damages as a result of your use or reuse of these electronic files.

3500 Jefferson
Suite 303
Austin, TX 78731

P: (512) 231-1910
F: (512) 231-1950

www.piarch.com

Mark Warrick
PI Architects, Inc.

Date

Client
Company

Date

architecture + interiors + planning + landscape architecture

SECTION 01 25 13 – PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1: GENERAL

1.01: Description

- A. General:
 - 1. Furnish all work and services for submitting, processing and handling requests for substitution and product options. Substitution or option shall be in accordance with provisions of Contract Documents.
 - 2. Coordinate with work of other trades.
 - 3. See appropriate Conditions for additional information.
- B. Address for Submission
Pi Architects
3500 Jefferson St, Suite 303
Austin, TX. 78731
Attention: Greg Hunteman

PART 2: PRODUCTS

2.01: Product Selection

- A. Base all bids on materials, equipment and procedures specified. **Do not base bids on substitutions.**
- B. Certain types of equipment and kinds of material are described in specifications by means of trade names, catalog numbers and/or manufacturer's names. This is not intended to exclude from consideration other items that may be capable of accomplishing the purpose indicated.
- C. Listing of a manufacturer implies acceptance of that manufacturer only as supplier of a product which complies with specified item, not of other items.
- D. Equipment, materials and construction, if not specifically indicated, must be approved in writing by owner and be agreed upon prior to letting of contract.
- F. Architect/Engineer reserves right to require substitute items to comply color and pattern-wise with base specified items, if necessary to secure "design-intent".
- G. No substitution permitted after letting of contract, except as indicated herein.

PART 3: EXECUTION

3.01: Contractor's Options

- A. For products specified only by reference standards, use any product meeting standards.

- B. For products specified by naming several products or manufacturers, use any product or manufacturer named.
- C. For products specified by naming one manufacturer and product and several optional manufacturer's or products, select any named product and manufacturer that meets all specification criteria.
 - 1. Contract Documents are based on use of primary manufacturer.
 - 2. By use of optional manufacturer or product, Contractor represents that he will be responsible for all adjustments to fit product to the work and for providing all additional work, equipment, and services required by use of product, at no additional cost.

3.02: Requests for Substitution

- A. Only written requests with complete submittal data will be considered.
- B. Requests must be submitted to Prime Contractor at least ten calendar days prior to letting of subcontract bid. Requests received late will not be considered.
- C. Submit three copies of request.
- D. In making request for substitution, or in using an approved substitute item, contractor represents:
 - 1. He has investigated proposed product or method, and has determined that it is equal or superior in all respects to that specified, and that it will perform intended function to the best of his knowledge.
 - 2. He will provide the same guarantee for the substitute item as for product or method specified.
 - 3. He will coordinate installation of accepted substitution into work, to include building modifications if necessary, making such changes as may be required for work to be complete in all respects.
 - 4. He waives all claims for additional costs related to substitutions that subsequently become apparent.
- E. Acceptance of provisions listed in "D" above shall be submitted in writing together with Request for Substitution.

3.03: Submittal Data

- A. Use "Request for Substitution" form from Section 00 43 25.
- B. Complete data substantially showing compliance of proposed substitution with Contract Documents.
- C. For products:
 - 1. Product identification, including manufacturer's name.
 - 2. Manufacturer's literature, marked to indicate specific model, type, size, and options to be considered.
 - a. Product description.
 - b. Performance and test data.
 - c. Reference standards.

- d. Difference in power demand, air quantities, etc.
- e. Dimensional differences from specified unit.
- 3. Full size samples if requested. Owner reserves right to impound sample until physical units are installed on project for comparison purposes. Requester to pay all costs of furnishing and return of samples. Owner is not responsible for loss of, or damage to, samples.
- 4. Name and address of similar projects and name of manufacturer's representative who can be contacted to discuss product, installation, and field performance data.
- D. Itemized comparison of proposed substitute to specified item.
- E. Data relating to changes in construction schedule.
- F. Relation to separate contracts.
- G. Cost of proposed substitution in comparison with product specified.

3.04: Substitution after Bid Date

- A. No substitutions will be considered after award of contract except for non-availability of specified item due to strikes, lockouts, bankruptcy, discontinuance of production, proven shortage, or similar occurrences not under contractor's control.
- B. Notify Architect, in writing, with substantiating data as soon as non-availability becomes apparent, to avoid delay in construction.
- C. Forward submittal data as required for substitutions above.

3.05: Rejection of Substitutions or Optional Items

- A. Substitutions and/or options will not be considered if:
 - 1. They are indicated or implied on shop drawings, or project data submittals, without formal request, submitted in accord with this section.
 - 2. Acceptance will require substantial revision of Contract Documents.
 - 3. Request for substitution does not indicate specific item for which request is submitted. Acceptance of a manufacturer only will not be made.

*****End of Section 01 25 13*****

SECTION 01 29 73 – SCHEDULE OF VALUES

1.01: General

- A. Within ten (10) days after contract award, submit a schedule of values showing amounts allocated to various portions of the work to owner.
- B. Support values, if requested by owner, by submitting substantiating data.
- C. Unless objected to by owner, use schedule only as basis for Application for Payment.
- D. Related Requirements in Other Parts of Project Manual:
 - 1. Conditions of the Contract.
- E. Related Requirements Specified in Other Sections:
 - 1. Application for Payment: G702-1992

1.02: Form and Content of Schedule of Values

- A. Identify Schedule with:
 - 1. Title of Project and Location.
 - 2. Name and Address of Contractor.
 - 3. Contract Designation.
 - 4. Date of Submission.
- B. List installed value of component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Follow Specification Table of Contents as the format for listing components.
 - 1. Identify each line item with number and title of respective major specification.
- D. For each major line item, list sub-values of major products or operations under the item.
- E. For the various portions of the Work:
 - 1. Each item shall include a directly proportional amount of the contractor's overhead and profit.
 - 2. For items on which progress payments will be requested for stored materials, break down the value into:
 - a. The cost of the materials, delivered and unloaded, with taxes paid.
 - b. The total installed value.

*****End of Section 01 29 73*****

SECTION 01 29 76 – APPLICATIONS FOR PAYMENT

1.01: General

- A. Submit payment application to Owner according to schedule established in Owner/Contractor Agreement.
- B. Related requirements in other parts of Project Manual:
 - 1. Progress Payment and Final Payment: General Conditions, Supplementary Conditions, and additional articles of General Conditions.
- C. Related Requirements specified in other Sections:
 - 1. Schedule of Values: Section 01 29 73
 - 2. Contract Closeout: Section 01 77 00

1.02: Format and Data Required

- A. Submit itemized applications typed on AIA Document G702-1992: Application and Certificate for Payment; G703-1992: Continuation Sheets; G706-1994: Contractor's Affidavit of Payment of Debts and Claims; and G706A-1994: Contractor's Affidavit of Release of Liens. No other pay request forms will be accepted.
- B. Submit copy of itemized Application for Approval prior to first payment application.

1.03: Preparation of Application for Each Progress Payment

- A. Application Form:
 - 1. Fill in required information. Include Change Orders approved prior to Application submittal date.
 - 2. Fill in summary of dollar values to agree with respective total indicated per each Continuation Sheet.
 - 3. Amount of retainage shall be 10%.
 - 4. Execute application. Include signature of responsible officer of Contractor's firm. Sign all copies (no photocopied signatures permitted). Notarize all copies.
 - 5. The payment application must be in Architect's office no later than the 20th of the month.
 - 6. The payment application must be received by Owner no later than the 5th of the month for payment by the 25th (Day) of the same month. **Neither Owner nor Architect is responsible for late draw requests. Allow a minimum of five full working days for Architect to process Payment Application.**
- B. Continuation Sheets:
 - 1. Totally fill in all scheduled component work items. Show item number and scheduled dollar value per item.
 - 2. Fill in dollar value in each column for each scheduled line item.
 - a. Round off values to nearest dollar, or as specified per Schedule of Values.
 - b. If no work has been performed, or materials stored, show zero amount.

3. At end of Continuation Sheets list each Change Order approved prior to submission date.
 - a. List by Change Order Number and description, as for an original component item of Work.

1.04: Substantiating Date for Progress Payments

- A. When Owner or Architect requires substantiating date, submit suitable information with cover letter identifying:
 1. Project.
 2. Application number and date.
 3. Detailed list of enclosures.
 4. For stored materials:
 - a. Item number and identification as shown on application.
 - b. Description of specific material.
- B. Submit one copy of data and cover letter for each copy of application.

1.05: Preparation of Application for Final Payment

- A. Fill in Application Form as specified for progress payments.
- B. Use Continuation Sheet for presenting final accounting statement as specified in Section 01 77 00.

1.06: Submittal Procedure

- A. Submit Application for Payment to Owner (through Architect) at times stipulated per Agreement.
- B. Number: Four (4) copies of each Application.
- C. When Architect finds Application properly completed and correct, he/she transmits Certificate for Payment to Owner.
- D. When Owner, or Architect, finds Application improperly completed or incorrect he returns it to Contractor, with corrections noted. Contractor resubmits new corrected Certificate through Architect.

*****End of Section 01 29 76*****

SECTION 01 31 13 – PROJECT COORDINATION

1.01: Related Requirements Specified Elsewhere

- A. Summary of Work: Section 01 11 00.
- B. Application for Payment: Section 01 29 76.
- C. Cutting and Patching: Section 01 73 29.
- E. Shop Drawings, Project Data, and Samples: Section 01 33 23.
- F. Schedules and Meetings: Section 01 32 13.
- G. Schedule of Values: Section 01 29 73.
- H. Contract Closeout: Section 01 77 00.
- I. Mechanical Work - General: Division 23.

1.02: Project Coordination

- A. The Contractor is solely responsible for coordination and adherence to time schedule. The Contractor and all Subcontractors shall comply with the following requirements.
 - 1. Cooperate in planning and layout of the Work well in advance of operations.
 - 2. Inform the Contractor and other Subcontractors of requirements at the proper time to prevent delay or revisions.
 - 3. Be informed of the requirements of the Contractor and other subcontractors and check own Work for conflicts with the Work of others.
 - 4. Ensure delivery of materials and performance of Work in coordinated schedule with the Contractor and other Subcontractors.

1.03: Correction of Defective Work

- A. Before starting a section of Work, each Subcontractor shall carefully examine all preparatory work that has been executed to receive his work. He shall check carefully, by whatever means required, to ensure that his Work and adjacent, related Work will finish to proper contours, planes, and levels. He shall promptly notify the Contractor of any defects or imperfections in preparatory work having been completed, cured, dried, work that is not level or planar, or unsound, and/or otherwise made unsatisfactory to receive such related Work. Should Work start without such notification, it shall constitute acceptance by the Subcontractor. All Work which may have to be replaced due to such defects shall be at his/her expense.

1.04: Intent of Drawings

- A. The Work of each Contractor shall conform to conditions shown on all drawings including Architectural, Structural, Mechanical, and Electrical. Drawings showing Work of mechanical, electrical, and other trades are partly diagrammatic and do not intend to show in detail all features of Work. Each Contractor shall carefully review and compare related Drawings and shall thoroughly understand the building conditions affecting their Work. Drawings are not organized by trades; all bids are to be based on full sets of bidding documents. All changes required in the Work caused by failure to do so shall be at the Contractor's expense.

1.05: Collocational Conflicts/Right-of-Way

- A. When collocational conflicts occur, Architectural and Structural Work shall have priority over concealed Electrical Work; exposed electrical fixtures shall have priority over mechanical fixtures. Submit conflicts that cannot be resolved to the Architect for instructions.

1.06: Continuity of Utility Services

- A. This project shall require interconnection with utilities. Take all precautions to maintain continuity to neighboring properties. If interruptions in service are unavoidable, ensure that owners and occupants of neighboring properties are properly notified in advance of service interruptions.

1.07: Project Coordination

- A. Electrical Contractor shall furnish and install all wiring except:
 - 1. Temperature control wiring.
 - 2. Equipment control wiring.
 - 3. Interlock wiring.
- B. The Electrical Contractor shall furnish and install all power wiring complete from power source to motor or equipment junction box, including power wiring through starters. The Electrical Contractor shall furnish and install all starters not factory mounted on equipment. After all circuits are completed, the Electrical Contractor shall be responsible for all power wiring.
- C. Mechanical Contractor shall furnish and install, regardless of voltage, all temperature control wiring, and all interlock wiring, and equipment control wiring for the equipment that the Mechanical Contractor finishes. After all circuits are completed, the Mechanical Contractor shall be responsible for all control wiring.
- D. Motors and equipment shall be provided for current characteristics as shown on the Electrical Drawings.

1.08: Coordination with Infection Guidelines

- A. NOT USED

*****End of Section 01 31 13*****

SECTION 01 32 13 – SCHEDULES AND MEETINGS

PART 1: GENERAL

1.01: General

- A. Construction Schedule: See Agreement between Owner and Construction Manager for Contract Time.

1.02: Related Documents

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this Section.

1.03: Coordination

- A. Provide close coordination of the progress schedule, schedule of values, listing of subcontracts, schedule of submittals and payment requests.

1.04: Progress Schedule

- A. The Contractor shall submit, within thirty (30) days after notice to proceed, a time-scaled critical path method (CPM) network schedule diagram of the project for the entire construction period.
- B. The Contractor is responsible for the creating, updating, and revising of all schedules and the execution of the plan described by the schedule.
- C. The initial schedule shall be submitted to the Architect by the Contractor and reviewed by the Architect as appropriate for meeting the scheduling requirements of the contract.
- D. The Construction Schedule shall:
 - 1. Be an “Activity” type CPM schedule clearly identifying the activity and time required for the activity.
 - 2. Be plotted to a calendar-day-based horizontal time scale.
 - 3. Clearly display the specific start and completion date of every activity in the schedule (basing the plotting of the CPM schedule on a time scaled calendar shown at the top of the schedule will fulfill the requirement), and the critical path of activities.
 - 4. Show a logical sequence of the work to be accomplished.
 - 5. Show the order and interdependence of the Contractor’s planned activities.
 - 6. Have as many activities as practical broken down such that no individual CPM activity element is for a duration greater than twenty (20) calendar days.
 - 7. Identify phases or major areas of construction of the CPM schedule by logically grouping activities and indicating phase or area in large print.
 - 8. Indicate any required actions of Owner or Architect affecting progress or completion date.
 - 9. Be updated by the Contractor as required to stay current with job progress and the relationship to the final completion date.

10. Clearly display the precedence of submittal schedule activities, i.e., the nodal point on the construction schedule by which a particular submittal – review – fabrication and delivery must be accomplished.
- E. Scheduling Update Requirements: Monthly updates for the purpose of indicating progress of the work are required.
- F. Schedule Revision Requirements: When in opinion of the Architect or the Contractor the Contractor's work progress is generally not conforming to the representations of the schedules to such a degree as to significantly reduce the effectiveness of the schedules as a management tool, the Contractor shall revise his schedules. The revised schedule shall show actual as-built progress for all executed activities. The revised schedules shall be submitted to the Architect by the Contractor and reviewed by the Architect as appropriate for meeting the scheduling requirements of the contract.
- G. Distribution: Following initial submittal to and response by Architect, print and distribute progress schedule to Architect, Owner, principal subcontractors and suppliers or fabricators, and others with a need to know the schedule. Post copies in project meeting rooms and field office. Distribute and post subsequent updated issues to same entities, when revisions are made; except delete entities from distribution when they have completed assigned work and are no longer involved in performance of scheduled work.
- H. Procedure During construction: The Contractor shall analyze actual construction progress monthly. If, during the course of the work, changes are of such nature as to cause re-sequencing or rescheduling of events from that originally shown, the Contractor will submit an updated and revised CPM schedule reflecting the actual progress of the work. Should the Contractor fail to meet the scheduled dates shown, they will be expected to increase the work force, as required to bring the actual completion dates of the activities into conformance with the reviewed schedule.

1.05: Progress Meetings

- A. General: In addition to specific coordination and pre-installation meetings for each element of work, a general progress meeting shall be held at intervals to be determined. Each entity involved in planning, coordination or performance of work is required to be properly represented at each meeting. Discuss whether each element of current work is ahead of schedule, on time, or behind schedule in relation with updated progress schedule. Determine how behind schedule work will be expedited, and secure commitments from entities involved in doing so. Discuss whether schedule revisions are required to ensure that current work and subsequent work will be completed within Contract Time. Review everything of significance that could affect progress of the work.
- B. Reporting: General Contractor is responsible for meeting minutes. Within three (3) days after each progress meeting date, the Contractor will distribute copies of minutes of the meeting to each entity present and to others who require the information.

*****End of Section 01 32 13*****

SECTION 01 33 23 – SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1: GENERAL

1.01: General

- A. Furnish copies of shop drawings and specifications when required by other Sections of the Specifications.
- B. Coordinate submissions with construction schedule (Section 01 32 13) allowing time to distribute so as not to cause delays in construction or materials procurement.
- C. Submittals must be for items as described in specifications and on drawings. If submittals are made for items that are not as specified, General Contractor will be responsible for resolving all engineering, coordination, longevity, and aesthetic issues resulting from the substitution. The Architect shall be the sole judge as to the satisfactory resolution of said issues. General Contractor may be charged for Architect's time at Architect's customary hourly rates for reviewing submittals of non-specified products.
- D. All submittals, except finish samples, shall be made electronically.

PART 2: PRODUCTS

2.01: Shop Drawings

- A. Contractor to use fully executed submittal cover sheet provided by Pi Architects.
- B. Provide scaled drawings in PDF file format.
- C. Include a visible title block indicating drawing subject matter, identification of job, and name and address of submitting firm.
- D. Make all information complete and legible.

2.02: Product Data and Samples

- A. Contractor to use fully executed submittal cover sheet provided by Pi Architects.
- B. Furnish product data PDF files and physical samples as required by other sections of the specifications.
- C. Identify each sample with legible product, manufacturer and job information.
- D. Provide three (3) copies of samples.

PART 3: EXECUTION

3.01: Shop Drawings

- A. Subcontractors are to submit PDF of drawings to the General Contractor for review and digital comment prior to submittal to the Architect for review and comment. Do not submit drawings directly to the Architect, Engineers, or other consultants.
- B. Distribute shop drawings to appropriate subcontractors and suppliers before and after final review.
- C. Reviewed shop drawings shall carry Architect's submittal review stamp. A record set shall be kept at the job site.
- D. Architect and Engineers require a **minimum of fourteen working days** after receipt by Architect for review of each submittal. On certain submittals, Contractor should anticipate that Architect or Engineer may require additional time to review in a thorough and professional manner.
- E. General Contractor is to review ALL shop drawings from subcontractors prior to submitting to Architect. Submitted shop drawings must carry contractor's review stamp. The General Contractor is to make their digital comments using the color green. Architects review comments will be the color red.

FAILURE OF CONTRACTOR TO REVIEW AND STAMP SHOP DRAWINGS PRIOR TO ARCHITECT'S REVIEW SHALL BE GROUNDS FOR REJECTION OF SUBMITTAL.

3.02: Product Data and Samples

- A. Submit to the Architect through the General Contractor enough samples of products and their literature to show color range, variance in quality, operation, various styles, etc.
- B. Samples reviewed shall carry Architect's submittal review stamp and be kept at the jobsite until completion of the work. Return of samples to supplier shall be made by General Contractor only upon request.
- C. Submit all product data and Samples in a timely manner to allow for adequate review time to maintain construction schedule.
- D. Distribute reviewed submittals as needed to applicable parties, including work of affected and adjacent trades to items as reviewed.
- E. General Contractor is to review ALL product data and samples from subcontractors prior to submitting to Architect. Submitted shop drawings must carry contractor's review stamp. The General Contractor is to make their digital comments using the color green. Architects review comments will be the color red.

FAILURE OF CONTRACTOR TO REVIEW AND STAMP SUBMITTALS PRIOR TO ARCHITECT'S REVIEW SHALL BE GROUNDS FOR REJECTION OF SUBMITTAL.

*****End of Section 01 33 23*****

SECTION 01 42 16
DEFINITIONS

PART 1 - GENERAL

1.01 SUMMARY

- A. References to standards, codes, Specifications, recommendations and regulations refer to the latest edition or printing prior to the date of issue of the Contract Documents.
- B. Applicable portions of standards listed that are not in conflict with Contract Documents are hereby made a part of the Specifications.
- C. Modifications or exceptions to Standards shall be considered as amendments and unmodified portions shall remain in full effect. In cases of discrepancies between standards, the more stringent requirements shall govern.

1.02 DEFINITIONS

- A. Furnish: To supply, deliver, unload, and inspect for damage.
- B. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.
- C. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.
- D. Project Manual: The book-sized volume that includes the procurement requirements (if any), the contracting requirements, and the specifications.
- E. Provide: To furnish and install.
- F. Supply: Same as Furnish.

1.03 ABBREVIATIONS AND NAMES

- A. The following acronyms or abbreviations as referenced in contract documents are defined to mean the associated names. Names are subject to change, and are believed to be, but are not assured to be, accurate and up-do-date as of date of contract documents:
 - 1. AA Aluminum Association
 - 2. AAMA American Architectural Manufacturers Association
 - 3. AAN American Association of Nurserymen
 - 4. AASHTO American Association of State Highway and Transportation Officials
 - 5. AATCC American Association of Textile Chemists and Colorists
 - 6. ACI American Concrete Institute
 - 7. ACIL American Council of Independent Laboratories
 - 8. ACPA American Concrete Pipe Association
 - 9. ADC Air Diffusion Council
 - 10. AFBMA Anti-Friction Bearing Manufacturers Association, Inc.
 - 11. AGA American Gas Association
 - 12. AHAM Association of Home Appliance Manufacturers
 - 13. AI Asphalt Institute
 - 14. AIA American Institute of Architects
 - 15. AIA American Insurance Association
 - 16. AISC American Institute of Steel Construction
 - 17. AISI American Iron and Steel Institute

18. AITC American Institute of Timber Construction
19. ALSC American Lumber Standards Committee
20. AMCA Air Movement and Control Association
21. ANSI American National Standards Institute
22. APA American Plywood Association
23. APA American Parquet Association
24. ARI Air Conditioning and Refrigeration Institute
25. ASC Adhesive and Sealant Council
26. ASCE American Society of Civil Engineers
27. ASHREA Architectural Society of Heating, Refrigerating and Air-Conditioning Engineers
28. ASME American Society of Mechanical Engineers
29. ASPE American Society of Plumbing Engineers
30. ASSE American Society of Sanitary Engineers
31. ASTM American Society for Testing and Materials
32. AWI Architectural Woodwork Institute
33. AWPA American Wood-Preservers' Association
34. AWPB American Wood-Preservers Bureau
35. AWS American Welding Society
36. AWWA American Water Works Association
37. BHMA Builders Hardware Manufacturers Association
38. BIA Brick Institute of America
39. BIFMA Business and Institutional Furniture Manufacturer's Association
40. CBM Certified Ballast Manufacturers
41. CDA Copper Development Association
42. CE Corps of Engineers (U.S. Dept. of the Army)
43. CFFA Chemical Fabrics and Film Association, Inc.
44. CFR Code of Federal Regulations
45. CGA Compressed Gas Association
46. CISPI Cast Iron Soil Pipe Institute
47. CLFMI Chain Link Fence Manufacturer's Institute
48. CPSC Consumer Product Safety Commission
49. CRA California Redwood Association
50. CRI Carpet and Rug Institute
51. CRSI Concrete Reinforcing Steel Institute
52. CS Commercial Standard of NBS (U.S. Dept. of Commerce)
53. CTI Ceramic Tile Institute
54. DHI Door and Hardware Institute
55. DLPA Decorative Laminate Products Association
56. DOC Department of Commerce
57. DOT Department of Transportation
58. EIA Electronic Industries Association
59. EPA Environmental Protection Agency
60. FAA Federal Aviation Administration (U.S. Dept of Transportation)
61. FCC Federal Communications Commission
62. FCI Fluid Controls Institute
63. FGMA Flat Glass Marketing Association
64. FHA Federal Housing Administration (U.S. Dept. of HUD)

- 65. FM Factory Mutual System
- 66. FS Federal Specification (General Services Admin.)
- 67. FTI Facing Tile Institute
- 68. GA Gypsum Association
- 69. GSA General Services Administration
- 70. HPMA Hardwood Plywood Manufacturers Association
- 71. IEEE Institute of Electrical and Electronic Engineers, Inc.
- 72. IESNA Illuminating Engineering Society of North America
- 73. IGCC Insulating Glass Certification Council
- 74. ILI Indiana Limestone Institute of America
- 75. IMIAC International Masonry Industry All-Weather Council
- 76. IRI Industrial Risk Insurance
- 77. ISA Instrument Society of America
- 78. MBMA Metal Building Manufacturer's Association
- 79. MCAA Mechanical Contractors Association of America
- 80. MIA Marble Institute of America
- 81. MIL Military Standardization Documents (U.S. Dept. of Defense)
- 82. ML/SFA Metal Lath/Steel Framing Association
- 83. MSS Manufacturers Standardization Society of the Valve and Fittings Industry
- 84. NAAMM National Association of Architectural Metal Manufacturers
- 85. NBGQA National Building Granite Quarries Association
- 86. NBS National Bureau of Standards (U.S. Dept. of Commerce)
- 87. NCMA National Concrete Masonry Association
- 88. NCRPM National Council on Radiation Protection and Measurement
- 89. NEC National Electrical Code (by NFPA)
- 90. NECA National Electrical Contractors Association
- 91. NEII National Elevator Industry, Inc.
- 92. NEMA National Electrical Manufacturers Association
- 93. NFPA National Fire Protection Association
- 94. NFPA National Forest Products Association
- 95. NHLA National Hardwood Lumber Association
- 96. NKCA National Kitchen Cabinet Association
- 97. NOFMA National Oak Flooring Manufacturers Association
- 98. NPA National Particleboard Association
- 99. NPCA National Paint and Coatings Association
- 100. NRCA National Roofing Contractors Association
- 101. NRMCA National Ready-Mix Concrete Association
- 102. NSF National Sanitation Foundation
- 103. NSSEA National School Supply and Equipment Association
- 104. NTMA National Terrazzo and Mosaic Association
- 105. NWMA National Woodwork Manufacturers Association
- 106. OSHA Occupational Safety Health Administration (U.S. Dept. of Labor)
- 107. PCA Portland Cement Association
- 108. PCI Prestressed Concrete Institute
- 109. PDI Plumbing and Drainage Institute
- 110. PEI Porcelain Enamel Institute
- 111. PS Product Standard of NBS (U.S. Dept. of Commerce)
- 112. RFCI Resilient Floor Covering Institute

- 113. RIS Redwood Inspection Service (Grading Rules)
- 114. SAMA Scientific Apparatus Makers Association
- 115. SDI Steel Deck Institute
- 116. SGCC Safety Glazing Certification Council
- 117. SHLMA Southern Hardwood Lumber Manufacturers Association
- 118. SIGMA Sealed Insulating Glass Manufacturers Association
- 119. SJI Steel Joist Institute
- 120. SMACNA Sheet Metal and Air Conditioning Contractors' National Association
- 121. SPIB Southern Pine Inspection Bureau (Grading Rules)
- 122. SPIB Southern Pine Inspection Bureau
- 123. SSPC Steel Structures Painting Council
- 124. SWI Steel Window Institute
- 125. TAS Texas Accessibility Standards
- 126. TCA Tile Council of America
- 127. TDADS Texas Department of Aging and Disability Services
- 128. TIMA Thermal Insulation Manufacturers Association
- 129. TPI Truss Plate Institute
- 130. TxDOT Texas Department of Transportation
- 131. UBC Uniform Building Code
- 132. UL Underwriters Laboratories
- 133. USDA United States Department of Agriculture
- 134. USPS United States Postal Service
- 135. WCLIB West Coast Lumber Inspection Bureau (Grading Rules)
- 136. WRI Wire Reinforcement Institute
- 137. WSC Water Systems Council
- 138. WSFI Wood and Synthetic Flooring Institute
- 139. WWPA Western Wood Products Association (Grading Rules)
- 140. WWPA Woven Wire Products Association

1.04 GENERAL SPECIFICATION ABBREVIATIONS

- A. Cubic Foot cu. ft.
- B. Degree deg.
- C. Diameter dia.
- D. Feet or Foot ft.
- E. Inch in.
- F. Inside Diameter i.d.
- G. Kips (1000 pounds) K
- H. Millimeter mm
- I. Ounce oz.
- J. Outside Diameter o.d.
- K. Pound lb.
- L. Pounds per Cubic Foot pcf
- M. Pounds per Square Foot psf
- N. Pounds per Square Inch psi

- O. Square Foot sq. ft.
- P. Square Inch sq. in.

1.05 REFERENCE STANDARDS - GENERAL

- A. Publications of organizations and societies listed in individual Specification Sections shall be considered integral with Contract Documents to extent referenced.
- B. Publications are referred to in text by basic designation only with organizations and societies referenced by abbreviations.
- C. When standard is referenced to in individual Specification Section but is not listed in this Section by title and date, it shall be considered to be latest revision at date of Project Manual issuance.
- D. Make available at site, copies of referenced documents as Engineer or Owner may request.
- E. Following listings include full title and applicable revision date.

1.06 REFERENCE STANDARDS

- A. American Concrete Institute (ACI):
 - 1. 211.1-81 (Revised 1985), Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
 - 2. 211.2-81, Standard Practice for Selecting Proportions for Structural Lightweight Concrete.
 - 3. 211.3-75 (Revised 1987), Standard Practice for Selecting Proportions for No-Slump Concrete.
 - 4. 301-84 (Revised 1987), Specification for Structural Concrete for Buildings.
 - 5. 304R-85, Guide for Measuring, Mixing, Transporting, and Placing Concrete.
 - 6. 306R-77 (Revised 1982), Hot Weather Concreting.
 - 7. 306R-78 (Revised 1983), Cold Weather Concreting.
 - 8. 308-81 (Revised 1986), Standard Practice for Curing Concrete.
 - 9. 309-72 (Revised 1982), Standard Practice for Consolidation of Concrete.
 - 10. 315-80, Details and Detailing of Reinforced Concrete (included in SP-66).
 - 11. 318-83 (Revised 1986), Building Code Requirements for Reinforced Concrete.
 - 12. 347-78 (Reapproved 1984), Recommended Practice for Concrete Formwork.
 - 13. SP-66, ACI Detailing Manual (1980 Edition).
- B. American Institute of Steel Construction (AISC):
 - 1. Code of Standard Practice for Steel Buildings and Bridges (with Commentary), September 1, 1976.
 - 2. Manual of Steel Construction, Eighth Edition.
 - 3. Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings (with Commentary), November 1, 1978.
 - 4. Specification for Structural Joints Using ASTM A325 or A490 Bolts, April 26, 1978.
- C. American Society for Testing and Materials (ASTM)
 - 1. A 36-84a, Specification for Structural Steel.
 - 2. A 47-84, Specification for Ferritic Malleable Iron Castings.
 - 3. A 53-84a, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - 4. A 82-85, Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - 5. A 108-81, Specification for Steel Bars, Carbon, Cold-Finished, Standard Quality.
 - 6. A 116-81, Specification for Zinc-Coated (Galvanized) Steel Woven Wire Fence Fabric.
 - 7. A 123-84, Specification for Zinc (Hot-Galvanized) Coatings on Iron and Steel Products.

8. A 153-84, Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
9. A 185-85, Specification for Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement.
10. A 242-87, Specification for High-Strength Low-Alloy Structural Steel.
11. A 307-86, Specification for Carbon Steel Bolts and Studs, 6000 psi Tensile Strength.
12. A 325-86a, Specification for High-Strength Bolts for Structural Steel Joints.
13. A 370-86a, Methods and Definitions for Mechanical Testing of Steel Products.
14. A 416-86, Specification for Steel Strand, Uncoated Seven-Wire Stress-Relieved for Prestressed Concrete.
15. A 421-80 (1985), Specification for Uncoated Stress-Relieved Wire for Prestressed Concrete.
16. A 446-85, Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
17. A 475-85, Specification for Zinc-Coated Steel Wire Strand.
18. A 490-85, Specification for Heat-Treated, Steel Structural Bolts 150 KSI Tensile Strength.
19. A 500-84, Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
20. A 501-84, Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
21. A 514-87a, Specification for High-Yield Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding.
22. A 525-83, Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, General Requirements.
23. A 572-84, Specification for High-Strength Low-Alloy Columbium-Vanadium Steel of Structural Quality.
24. A 576-81, Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality.
25. A 588-87, Specification for High-Strength Low-Alloy Structural Steel with 50,000 psi Minimum Yield Point to 4 in. Thick.
26. A 611-85, Specification for Steel, Sheet, Carbon, Cold-Rolled Structural Quality.
27. A 615-87, Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
28. A 706-84a, Specification for Low-Alloy Steel Deformed Bars for Concrete Reinforcement.
29. A 775-85, Specification for Epoxy-Coated Reinforcing Steel Bars.
30. A 633-85, Specification for Electrodeposited Coatings of Zinc on Iron and Steel.
31. C 31-85, Method for Making and Curing Concrete Test Specimens in the Field.
32. C 33-86, Specification for Concrete Aggregates.
33. C 39-86, Test for Compressive Strength of Cylindrical Concrete Specimens.
34. C 42-84a, Methods for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
35. C 90-85, Specification for Hollow Load-Bearing Concrete Masonry Units.
36. C 91-86, Specification for Masonry Cement.
37. C 94-86, Specification for Ready-Mixed Concrete.
38. C 109-86, Test Method for Compressive Strength of Hydraulic Cement Mortars.
39. C 138-81, Test Method for Unit Weight, Yield and Air Content (Gravimetric) of Concrete.
40. C 140-75 (1980), Method of Sampling and Testing Concrete Masonry Units.
41. C 143-78, Test Method for Slump of Portland Cement Concrete.
42. C 144-87, Specification for Aggregate for Masonry Mortar.

43. C 150-85a, Specification for Portland Cement.
 44. C 171-69 (1986), Specification for Sheet Materials for Curing Concrete.
 45. C 172-82, Method of Sampling Freshly Mixed Concrete.
 46. C 173-78, Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
 47. C 190-85, Test Method for Tensile Strength of Hydraulic Cement Mortars.
 48. C 207-79 (1984), Specification for Hydrated Lime for Masonry Purposes.
 49. C 231-82, Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 50. C 260-85, Specification for Air-Entraining Admixtures for Concrete.
 51. C 270-86b, Specification for Mortar for Unit Masonry.
 52. C 309-81, Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
 53. C 311-85, Method for Sampling and Testing Fly Ash or Natural Pozzolans for Use as a Mineral Admixture in Portland Cement Concrete.
 54. C 330-87, Specification for Lightweight Aggregates for Structural Concrete.
 55. C 404-87, Specification for Aggregates for Masonry Grout.
 56. C 476-83, Specification for Grout for Reinforced and Non-reinforced Masonry.
 57. C 494-86, Specification for Chemical Admixtures for Concrete.
 58. C 567-85, Test Method for Unit Weight of Structural Lightweight Concrete.
 59. C 595-86, Specification for Blended Hydraulic Cements.
 60. C 618-85, Specification for Fly Ash and Raw or Calcined Natural Pozzolan for use as a Mineral Admixture in Portland Cement.
 61. C 780-80 (1985), Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
 62. C 827-82, Test Method for Early Volume Change of Cementitious Mixtures.
 63. C 938-80 (1985), Practice for Proportioning Grout Mixtures for Preplaced-Aggregate Concrete.
 64. C 942-86, Test Method for Compressive Strength of Grouts for Preplaced-Aggregate Concrete in the Laboratory.
 65. C 989-85a, Specification for Ground Iron Blast-Furnace Slag for Use in Concrete and Mortars.
 66. D 98-80, Specification for Calcium Chloride.
 67. D 994-71 (Reaffirmed 1982), Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
 68. D 1751-83, Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
 69. D 1752-84, Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
 70. D 2092-86, Recommended Practices for Preparation of Zinc-Coated Galvanized Steel Surfaces for Painting.
 71. D 2240-86, Test for Rubber Property - Durometer Hardness.
 72. D 3034, Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 73. E 164-81, Practice for Ultrasonic Contact Examination of Weldments.
 74. E 329-77 (1983), Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction.
 75. E 447-84, Test Methods for Compressive Strength of Masonry Prisms.
- D. American Welding Society (AWS):
1. A5.1-81, Specification for Carbon Steel Covered Arc-Welding Electrodes.

2. A5.5-81, Specification for Low-Alloy Steel Covered Arc-Welding Electrodes.
 3. A5.17-80, Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc-Welding.
 4. A5.20-79, Specification for Carbon Steel Electrodes for Flux Cored Arc-Welding.
 5. B2.1-84, Welding Procedure and Performance Qualification.
 6. D1.1-86, Structural Welding Code - Steel.
 7. D1.3-81, Specification for Welding of Sheet Metal in Structures.
 8. D1.4-79, Structural Welding Code - Reinforcing Steel.
 9. QC-1-86, Standard for Qualification and Certification of Welding Inspectors.
- E. Prestressed Concrete Institute (PCI):
1. MNL 116-77, Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products.
 2. MNL 117-77, Manual for Quality Control of Plants and Production of Architectural Precast Concrete Products
- F. Steel Deck Institute (SDI):
1. Specification for Composite Steel Floor Deck, 1987.
 2. Specification for Non-Composite Steel Form Deck, 1987.
 3. Specification for Steel Roof Deck, 1987.
- G. Steel Joist Institute (SJI):
1. Recommended Code of Standard Practice for Steel Joists, November 4, 1985.
 2. Standard Specification for Joist Girders, November 4, 1985.
 3. Standard Specification for Longspan Steel Joists, LH-Series and Deep Longspan Steel Joists, DLH-Series, November 4, 1985.
 4. Standard Specification for Open Web Steel Joists, K-Series, November 1, 1985.

*****End of Section 01 42 16*****

SECTION 01 42 19 – REFERENCE STANDARDS

PART 1: GENERAL

1.01: Description

- A. Throughout the Contract Documents, reference is made to codes and standards which establish qualities and type of workmanship and materials, and which establish methods for testing and reporting on the pertinent characteristics.
- B. Where materials or workmanship are required by these Contract Documents to meet or exceed the specifically named code or standard, it is the Contractor's responsibility to provide materials and workmanship which meet or exceed the specifically named code or standard.
- C. It is also the Contractor's responsibility, when so required by the Contract Documents or by written request from the Architect, to deliver to the Architect all required proof that the materials or workmanship, or both, meet or exceed the requirements of the specifically named code or standard. Such proof shall be in the form requested in writing by the Architect, and generally will be required to be copies of a certified report of tests conducted by a testing agency approved for the purpose by the Architect.
- D. Related Work Described Elsewhere: Specific naming of codes or standards occurs on the Drawings and in other sections of these Specifications.

1.02: Quality Assurance

- A. Familiarity with Pertinent Codes and Standards: In procuring all items used in this Work, it is the Contractor's responsibility to verify the detailed requirements of the specifically named codes and standards and to verify that the items procured for use in this Work meet or exceed the specified requirements.
- B. Rejection of Non-Complying Items: The Architect reserves the right to reject items incorporated into the Work that fails to meet the specified minimum requirements. The Architect further reserves the right, and without prejudice to other recourse the Architect may take, to accept non-complying items subject to an adjustment in the Contract Amount as approved by the Architect and the Owner. Such adjustment shall not under any circumstances cost the Owner more than would the originally specified item.
- C. Applicable standards listed in these Specifications include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:

AAN: American Association of Nurserymen,
835 Southern Bldg.,
Washington, D.C. 20006

ACI: American Concrete Institute
P.O. Box 4754, Redford Station,
Detroit, MI 48219

AGA: American Gas Association
605 Third Avenue
New York, N.Y. 10016

AIA:	American Institute of Architects 1735 New York Ave. Washington, D.C. 20006
AIMA:	Acoustical and Insulating Materials Association 205 West Tough Ave Park Ridge, IL 60068
AISC:	American Institute of Steel Construction 101 Park Ave. New York, N.Y. 10017
AISI:	American Iron and Steel Institute 150 East 42 nd St. New York, N.Y. 10018
AMCA:	Air Moving and Conditioning Association, Inc. 30 West University Drive Arlington Heights, IL 60004
ANSI:	American National Standards Institute 1430 Broadway, New York, N.Y. 10018
APA:	American Plywood Association P.O. Box 11700 Tacoma, WA 98411
APWA:	American Public Works Association Washington State Chapter Olympia, WA 98504
ASME:	American Society of Mechanical Engineers 29 West 39 th Street New York, N.Y. 10018
ASTM:	American Society for Testing & Materials 1916 Race Street Philadelphia, PA
AWI:	Architectural Woodwork Institute Chesterfield House, Suite A 5055 South Chesterfield Road Arlington, VA 22206
AWS:	American Welding Society 33 West 39 th Street New York, N.Y. 10018
AWWA:	American Water Works Association 2 Park Avenue New York, N.Y. 10000
CRSI:	Concrete Reinforcing Steel Institute 38 th South Dearborn Street Chicago, IL
CS:	Commercial Standard of the U.S. Department of Commerce Washington, D.C. 20025

CSI:	Construction Specification Institute 1717 Massachusetts Avenue, N.W. Washington, D.C. 20036
FGMA:	Flat Glass Marketing Association 3310 Harrison, White Lakes Prof. Bldg. Topeka, KS 66611
ICC:	International Code Council 2122 - 112 Avenue N. E., Suite C Bellevue, WA 98004
IEEE:	Institute of Electrical & Electronic Engineers 33 West 39 th Street New York, N.Y. 10018
IPCEA:	Insulated Power Cable Engineers Association 283 Valley Road Montclair, New Jersey 07042
NAAMM:	National Association of Architectural Metal Manufacturers 228 North La Salle Chicago, IL 60601
NEMA:	National Electrical Manufacturer's Association 155 East 44 th Avenue New York, N.Y. 10017
NFPA:	National Fire Protection Association 60 Betterymarch Street, Boston, MA 02110
NWMA:	National Woodwork Manufacturers Association 400 West Madison Chicago, IL 60600
PS:	Product Standard of U.S. Dept., of commerce Washington, D.C. 20025
SDI:	Steel Deck Institute 9836 West Roosevelt Road Westchester, IL 60153
SDI:	Steel Door Institute 1230 Keith Building Cleveland, Ohio 44115
SMCNA:	Sheet Metal & Air Conditioning National Association 107 Center Street Elgin, IL 60210
SSPC:	Steel Structures Painting Council 4400 Fifth Avenue Pittsburgh, PA 15312
TCA:	Tile Council of America 800 Second Avenue New York, N.Y. 10017

UL: Underwriter's Laboratories
333 Pfinsten Road
Northbrook, IL 60062

WWPA: Western Wood Products Association
Neon Building, Portland, OR 97204

PART 2: PRODUCTS

Not Applicable

PART 3: EXECUTION

Not Applicable

*****End of Section 01 42 19*****

SECTION 01 45 23 – TESTING AND INSPECTION SERVICES

PART 1: GENERAL

1.01: General

- A. The Owner will employ and pay for the inspection firms to perform specified inspection services as listed. The Contractor will include an allowance in the bid for payment of those specified inspection services
 - 1. The Contractor's cooperation with the inspecting firm is required to facilitate their required services.
 - 2. Employment of inspection firm does not relieve the Contractor from obligation to perform any Contract Work, nor does it relieve him from the responsibility to supervise all work.
 - 3. It will be the Contractor's responsibility to act promptly on all deficiencies indicated by inspections.
 - 4. It is the Contractor's responsibility to correct all deficiencies to the satisfaction of the Owner at no cost to the Owner (except for unanticipated problems occurring that cannot be reasonably inferred from the Contract Documents).
- B. The employment and presence of the inspector is not to be construed that the inspecting firm is accepting any responsibility for construction supervision, job safety supervision or compliance of the Work to the Contract Documents.

1.02: Related Requirements Specified Elsewhere

- A. Section 00 72 00: General Conditions of the Contract for Construction
- B. Section 00 73 00: Supplementary Conditions
- C. Section 32 13 13: Concrete Paving
- D. Site Concrete Work
- E. Section 03 30 00: Cast-in-Place Concrete

1.03: Inspector's Duties

- A. Promptly submit written report of each test and inspection; one copy each to Architect, Structural Engineer, Owner, Contractor, City Authorities, and Record Documents File. Include in each report:
 - 1. Date issued.
 - 2. Project Title and number.
 - 3. Testing Firm name, address, and telephone number.
 - 4. Name and signature of testing firm's inspector.
 - 5. Date and time of sampling or inspection.
 - 6. Record of temperature and weather conditions.
 - 7. Date of testing.
 - 8. Identification of product and Specification Section.
 - 9. Location of sample or test in the Project.

10. Type of inspection.
 11. Results of inspection/testing and compliance with Contract Documents.
 12. Interpretation of results, when requested by Architect, Structural Engineer, or Owner.
- B. Perform additional inspections as required by Architect, Structural Engineer, or Owner.

1.04: Limitations of Authority of Inspector

- A. Inspector is not authorized to:
1. Release, revoke, alter or enlarge on requirements of Contract Documents.
 2. Approve or accept any portion of the Work.
 3. Perform any duties of the Contractor.

1.05: Contractor's Responsibilities

- A. Cooperate with inspection personnel, provide access to Work, and to Manufacturer's operations.
- B. Secure and deliver to laboratory adequate quantities of representational samples of materials proposed for use, and which require testing.
- C. Provide to inspector preliminary design mix proposed to be used for concrete, and other materials mixes requiring control by testing laboratory.
- D. Furnish copies of Products test reports as required.
- E. Furnish incidental labor and facilities:
- F. Provide access to work to be tested.
- G. Obtain and handle samples at the Project site or at the source of the product to be tested.
- H. Facilitate inspections and tests.
- I. Storage and curing of test samples.
- J. Notify inspecting firm sufficiently in advance of operations to allow for assignment of personnel and scheduling of inspection and tests.
 1. When tests or inspections cannot be performed after insufficient notice, reimburse the inspecting agency for personnel and travel expenses incurred due to contractor's negligence.
- K. Employ and pay for services of inspection firm to perform additional inspections, sampling and testing required.
 1. For contractor's convenience.
 2. When initial tests indicate work does not comply with Contract Documents.

1.06: Inspections, Tests and Methods Required

- A. Testing laboratory shall establish methods used for testing, retesting and frequency of inspections and tests. Procedures shall be approved by authority having jurisdiction.
- B. Tests and inspections to be made shall be those required by governing authority having jurisdiction for the issuance of the building permit. They shall include, but not be limited to; compaction and bearing, concrete, masonry, steel and steel erection.

*****End of Section 01 45 23*****

SECTION 01 45 24: CIVIL MATERIALS TESTING

PART 1: GENERAL

- A. All requirements of Divisions 0 and 1 apply to the Work of this section.
- B. In addition to tests called for in other Sections, Work shall be tested to insure compliance with the Contract Documents by third party authority accepted agencies. Test shall be contracted by Owner and scheduled by Contractor, and paid for by Owner upon pre-arranged agreement between Owner and Testing Agency.

PART 2: PRODUCTS

- A. Minimum test regarding compaction of in-situ materials.
 - 1. Laboratory moisture/density relationship (modified proctor), ASTM D 1557(one test for each type of soil encountered.)
 - 2. Field density test, ASTM D 2922 method B.
 - a. Trenches: one test per 50 L.F per lift.
 - b. Building pads: one test /1000 sq. ft. per lift.
 - c. Pavement: one test per 2500 sq. ft. per lift.
- B. Imported materials, including base course for pavements.
 - 1. Laboratory moisture/density relationship (modified proctor), ASTM D 1557 (one test for each type of fill)
 - 2. Plasticity Index test, ASTM D 424 (one test for each type of fill)
 - 3. Graduation test ASTM D 424 (one test for each type of fill)
 - 4. Field density test, ASTM 0 2922, method B
 - a. Trenches: one test per 50 L.F per lift.
 - b. Building pads: one test /1000 sq. ft. per lift.
 - c. Pavement: one test per 10000 sq. ft. per lift.
- C. Flexible Pavements
 - 1. Bituminous wearing course.
 - a. Laboratory Marshall mix, ASTM D 1559 (one test for each type of mix proposed)
 - b. Field Marshall test, ASTM D 1559 (modified for field asphalt content only). One test.
 - c. Extraction test, ASTM D 2172 (one test per 2500 tons of hot mix)
 - d. Graduation, ASTM D 546 (one test per 2500 tons of hot mix)
 - e. Thickness determination. (one test per 40,000 sq.ft.)
 - f. Field density test, ASTM D 2922, Method A (backscatter) Non-destructive: One test per 10,000 sq. ft. Core sample: One core per 100,000 sq. ft.
 - 2. Base course, Sub-base, and sub-grade (Same as required for imported fill material)

- D. Rigid Pavements
 - 1. Portland Cement Concrete for Pavement, Buildings and Structures
 - a. Mix design including water/cement ratio. (One design for each type and strength)
 - b. Field test for each type and strength of concrete.
 - i. Slump, ASTM C 143: One test per truck.
 - ii. Air Content: One test per truck. Roller meter not permitted.
 - iii. Strength: ASTM 431 3 cylinders per 50 cu. yds. or days placement if less than 50 cy. yds. Test 7 day, 28 day, reserve if test fail.
 - 2. Base course, Sub-base, and sub-grade (Same as required for imported fill material)

PART 3: EXECUTION

- A. Concrete passing field testing shall not be altered at completion of test.
- B. Testing agency shall be empowered and required to retest any concrete altered following passing of original test. The cost of retesting concrete due to altering the original mix shall be borne by Contractor.
- C. Failure of the testing agency to conduct test in this manner, and failure to perform subsequent retesting shall cause rejection and payment to the testing agency. This provision shall be written into the testing agency agreement for services.
- D. Contractor shall not place concrete failing testing agency results.

*****End of Section 01 45 24*****

SECTION 01 50 00 – TEMPORARY UTILITIES

PART 1: GENERAL

1.01: General

- A. Furnish, install and maintain temporary utilities required for construction. Remove upon completion of Work.
- B. Related Requirements Specified in Other Sections:
 - 1. Summary of Work: Section 01 11 00
 - 2. Field Offices and Sheds: Section 01 52 13
 - 3. General Conditions of the Contract for Construction: Section 00 72 00
 - 4. Supplementary Conditions: Section 00 73 00

1.01: Requirements of Regulatory Agencies

- A. Comply with Regulatory Requirements per Divisions 0 and 1
- B. Comply with Federal, State, City and all local codes and regulations.
- C. Comply with utility company requirements.

PART 2: PRODUCTS

2.01: Materials – General

- A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, nor violate applicable codes and standards.

2.02: Temporary Electricity and Lighting

- A. Provide connections to existing facilities, size to provide service required for power and lighting during construction. Contractor to pay costs of power used during construction.
- B. Install circuit and branch wiring: Locate area distribution boxes so power and lighting are available throughout construction by use of construction-type power cords.
- C. All temporary power cords to be provided in good working order and protected from damage as necessary, Ensure usage to be safe.
- D. Provide adequate artificial lighting for:
 - 1. All work areas where natural light is not adequate for work.
 - 2. Areas accessible to public.

2.03: Temporary Heat and Ventilation

- A. Provide facilities and temporary units as required. Pay all costs of installation, maintenance, fuel, operation and removal.
 - 1. Provide temporary heat and ventilation required to:
 - a. Maintain adequate environmental conditions to facilitate progress of the Work.
 - b. Meet specified minimum conditions for installation of materials.
 - c. Protect materials and finishes from damage due to temperature or humidity.
 - 2. Provide adequate forced ventilation of enclosed areas to:
 - a. Cure installed materials.
 - b. Disperse humidity.
 - c. Prevent hazardous accumulations of dust, fumes, vapors, or gases.
 - 3. Portable heaters:
 - a. Use standard approved units complete with controls.

2.04: Temporary Telephone Service

- A. Arrange with local telephone service company; provide direct line telephone service at construction site for use of personnel and employees. Service required:
 - 1. One direct line instrument in Field Office.
 - 2. One fax machine.
 - 3. Other instruments at Contractor's option, or as required by regulations.
- B. Pay all costs for installation, maintenance and removal. Pay service charges for local calls. Toll charges paid by party placing call.

2.05: Temporary Water

- A. Make connections to existing facilities, provide water for construction purposes. Contractor to pay costs of water used.
- B. Install branch piping with taps located so that water is available throughout the construction by the use of hoses. Protect piping and fittings against freezing.

2.06: Temporary Sanitary Facilities

- A. Provide sanitary facilities in compliance with laws and regulations.
- B. Service, clean, and maintain facilities and enclosures.

PART 3: EXECUTION

3.01: General

- A. Comply with the applicable requirements specified in Division 22 Plumbing, Division 23 – HVAC, and Division 26 - Electrical.
- B. Maintain and operate systems to assure continuous service.

- C. Modify and extend systems as work progress requires.

3.02: Removal

- A. Completely remove temporary materials and equipment when no longer required.
- B. Clean and repair damage caused by temporary installations and use of temporary facilities.
- C. Restore existing and permanent facilities used for temporary services to specified, or to original, condition.
- D. Prior to Final Inspection, remove temporary lamps and install new lamps.

*****End of Section 01 50 00*****

SECTION 01 52 13 – FIELD OFFICES AND SHEDS

PART 1: GENERAL

1.01: Description

- A. Furnish, install, and maintain temporary field offices as required during entire construction period.
- B. Furnish, install, and maintain storage and work sheds needed for construction period.
- C. At completion of Work, remove field offices, sheds, and contents.
- D. Related Requirements Specified in Other Sections:
 - 1. Summary of Work: Section 00 73 00.
 - 2. Temporary Utilities: Section 01 50 00.
 - 3. Material and Equipment: Section 01 87 00.

1.02: Requirements of Regulatory Agencies

- A. Comply with requirements of Federal, State, City and all local codes and regulations.

1.03: Other Requirements

- A. Prior to installation of offices and sheds, consult with Architect and Owner on location, access, and related facilities.

1.04: Requirements for Facilities

- A. Construction:
 - 1. Structurally sound, weather and water tight, with floors raised above ground and level.
 - 2. Insulated as compatible with occupancy and storage requirements.
 - 3. At contractor's option, portable or mobile buildings may be used. Mobile homes, when used, shall be modified for office use.

PART 2: PRODUCTS

2.01: Materials, Equipment, Furnishings

- A. May be new or used, but must be serviceable, adequate for required purpose, and must not violate applicable codes or regulations.

2.02: Facilities

- A. Contractor's Offices and Facilities:
 - 1. Size: As required for general use to provide space for project meetings, contractor's files, etc.
 - 2. Telephone: One direct line instrument per 01 52 13.
 - 3. Layout table: Suitable for Construction Documents, shop drawings and other drawings.
 - 4. Other furnishings: At Contractor's option, provide desk, conference table, chairs, coat rack, waste receptacle.
 - 5. One 10 in. outdoor-type thermometer.
 - 6. Automatic heating equipment to maintain comfort level in cool weather.
 - 7. Convenient access to drinking water and sanitary facilities.
 - 8. View window with orientation towards construction area (preferred, not required).
- B. Storage Sheds:
 - 1. To requirements of various trades adequate for storage and handling of materials housed.
 - 2. Ventilation: Comply with specified and code requirements for products stored.
 - 3. Heating: Adequate to maintain minimum temperatures specified in respective sections for materials stored.

PART 3: EXECUTION

3.01: Preparation:

- A. Fill and grade sites for temporary structures to provide surface drainage and level floors.

3.02: Installation

- A. Construct temporary field offices and storage sheds on proper foundations; provide connections for utility services.
 - 1. Secure portable or mobile buildings when used.
 - 2. Provide steps and landings at entrance doors.
- B. Mount thermometer at convenient outside location, not in direct sunlight.
- C. Relocate as necessary to facilitate progression of Work providing new location similar to condition of original site.

3.03: Maintenance and Cleaning

- A. Provide periodic maintenance and cleaning for temporary structures, furnishings, equipment, and services.

3.04: Removal

- A. Remove temporary structures, contents, and services when no longer needed.
- B. Remove foundations and debris. Grade site to required elevations and specifications. Leave area clean, ready for final finishing as specified. Complete Construction at area.

*****End of Section 01 52 13*****

SECTION 01 54 00 – CONSTRUCTION AIDS

PART 1: GENERAL

1.01: Description

- A. Unless otherwise specified, furnish, install, and maintain required construction aids. Remove on completion of Work.
- B. Related Sections
 - 1. Section 01 11 00, Summary of the Work

1.02: Requirements of Regulatory Agencies

- A. Comply with Federal, State, City, and all local codes and regulations.

PART 2: PRODUCTS

2.01: Materials – General

- A. Materials may be new or used as suitable for the intended purpose, but must not violate requirements of applicable codes and standards.

2.02: Construction Aids

- A. Provide construction aids and equipment required by personnel and to facilitate the execution of the Work. Include scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes, and other such facilities and equipment. Refer to respective sections for particular requirements for each trade.
- B. Maintain all facilities and equipment in a first-class condition.

2.03: Temporary Enclosures

- A. Weathertight: Provide temporary weathertight enclosure of exterior walls for successive areas of the building as work progresses, as necessary to provide:
 - 1. Acceptable working conditions.
 - 2. Weather protection for interior materials.
 - 3. Allowances for effective temporary heating.
 - 4. Prevention of entry by unauthorized persons.
- B. Provide temporary exterior doors with self-closing hardware and padlocks.
- C. Other enclosures shall be removable as necessary for work and for handling of materials.
- D. Construction Fencing: provide temporary fencing suitable for enclosing the construction site and preventing unauthorized entry

PART 3: EXECUTION

3.01: Preparation

- A. Consult with Owner: Review site conditions and factors affecting construction procedures and construction aids, including adjacent properties and public facilities affected by the execution of Work.

3.02: General

- A. Comply with applicable requirements specified in Sections of Divisions 2 through 33.
- B. Relocate construction aids as required by:
 - 1. Construction progress.
 - 2. Storage of work requirements.
 - 3. Accommodation of Owner's legitimate requirements.
 - 4. Accommodation of any other contractor's needs on Project employed at site.
 - 5. NOT USED

3.03: Removal

- A. Completely remove temporary materials, equipment and services:
 - 1. When construction needs can be met by use of permanent construction.
 - 2. At Project completion.
- B. Clean and repair damage caused by installations, or by use of temporary facilities.
 - 1. Remove foundations and underground installations for construction aids.
 - 2. Grade and clean site areas affected by temporary installations to required elevations and slopes.
- C. Restore existing facilities used for temporary purposes to specified, or to original, condition.
- D. Restore permanent facilities used for temporary purposes to specified condition.

*****End of Section 01 54 00*****

SECTION 01 55 19 – TEMPORARY PARKING AREAS

PART 1: General

1.01 SECTION INCLUDES

- A. Parking.
- B. Maintenance.
- C. Removal, repair.
- D. Mud from site vehicles.

1.02 RELATED SECTIONS

- A. Section 01 31 13 – Project Coordination.
- B. Section 01 52 13 – Field Offices and Sheds

PART 2: Products

Not Used

PART 3: Execution

3.01 PARKING

- A. Provide and locate on-site parking for all construction personnel.

3.02 MAINTENANCE

- A. The General Contractor shall maintain traffic and parking areas in sound condition free of excavated materials, construction equipment, products and mud.

3.03 REMOVAL AND REPAIR

- A. Remove temporary materials and construction before Substantial Completion.
- B. Remove underground work and compacted materials to a depth of 2 feet, fill and grade site as specified.
- C. Repair facilities damaged by use, to original condition acceptable to the Owner and Architect.

3.04 MUD FROM SITE VEHICLES

- A. Provide means of removing mud from vehicle wheels before entering streets.

*****End of Section 01 55 19*****

SECTION 01 55 26 – CONSTRUCTION TRAFFIC CONTROL

Part 1: General

1.01: Description

This item shall consist of furnishing all labor, materials and equipment for installing, maintaining and operating a traffic control system necessary to ensure the safety of the general public and project personnel.

1.02: Drawings

Work under this section is to be in conformance with the traffic control plans included in the plan sheets, unless revised traffic control plans have been submitted by the Contractor and approved by the Engineer.

1.03: Notifications

- A. The Contractor shall coordinate all his construction activities to minimize conflicts at the work site, off-site events or other construction projects.
- B. The Contractor shall provide to the Engineer, the construction traffic control plan at least one week prior to the beginning of construction or change in segment of work on the project. The Engineer will review the traffic control plan relative to off-site activities and may require some modification to the plan or construction timing to coordinate events.

1.04: Traffic Control Devices

- A. All signs and barricades shall be reflectorized. All traffic control devices in use at night shall be equipped with lighting devices as required in the “Manual of Uniform Traffic Control Devices.”
- B. All traffic control devices and their application or usage shall conform to the “Manual of Uniform Traffic Control Devices” and the “Traffic Control Handbook.” Both may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington DC 20492.
- C. All traffic control devices shall be clean, clearly legible and operable.

1.05 Work Methods

- A. The Contractor shall position all traffic control devices according to plan prior to positioning men or equipment on the traveled way. The sequence of installation will be signs, cones and barricades.
- B. The Contractor shall inspect the work area at least once each day throughout construction activity and keep work records.
- C. The Contractor shall check the applicability of signing before changing to a new phase of work or before leaving the site at the end of the day.

- D. The Contractor shall remove the traffic control devices in reverse order of installation at the conclusion of the project construction.
- E. Construction traffic control devices shall be removed from visual contact with the traveling public when they are not being used for the construction activities.

1.06: Watering

The Contractor shall sprinkle water on the traveled way as necessary to control dust.

1.07: Non-Compliance Penalty

- A. The Contractor is solely responsible for the construction traffic control system. Daily review of the system shall be made by the Contractor and any traffic control device not providing its intended function shall immediately be replaced, repaired or cleaned.
- B. If required traffic control devices are not in position, the Contractor shall not be allowed to commence work on the project, but time will be allowed to start or continue to accumulate against the construction contract time.
- C. Inspection of the traffic control system will be made periodically by the Engineer. The Contractor will be notified of any non-compliance.

If the Contractor fails to correct any deficiency in the traffic control system within a reasonable time, when directed by the Engineer, a deduction from the contract payment shall be made on the next progress payment. Definition of reasonable time and the amount of reduction shall be the sole discretion of the Engineer.

If the Contractor fails to correct a deficiency in the traffic control system that the Engineer deems an emergency hazard to life and property, the Owner may correct the deficiency and be reimbursed for all costs from the next progress payment to the Contractor.

1.08 Flagging

Flagging shall be performed by competent and properly equipped flagger. Flagger shall be certified as a flagger, and have successfully completed Colorado Department of Transportation approved flagging training.

*****End of Section 01 55 26*****

SECTION 01 57 13 – EROSION AND SEDIMENT CONTROL

PART 1: GENERAL

1.01: Description

- A. Furnish all labor, materials, tools, equipment, and services for all soil erosion and sediment control, as indicated, in accord with provisions of Contract Documents.
- B. Completely coordinate with work of all other trades.
- C. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to, or necessary, for a sound, secure and complete installation.
- D. See Division 1 for General Requirements.
- E. Conform to Jurisdictional regulations.

1.02: Quality Assurance

- A. Erosion control standards shall be in accordance with City of Baton Rouge and State of Louisiana requirements.

PART 2: PRODUCTS

2.01: Materials

- A. See drawings.

PART 3: EXECUTION

3.01: At Beginning of Sitework

- A. Prior to general stripping of topsoil and excavating:
 - 1. Stabilize construction entrance.
 - 2. Clear site after silt fence is installed.
 - 3. Construct temporary erosion and silt control system with storm system required to drain silt panels.

3.02: During Construction Period

- A. Maintain basins, dikes, traps, stone filters, straw bales, etc. Inspect regularly, especially during and after rainstorms. Repair and/or replace damaged, missing, or nonfunctioning items.

- B. After rough grading sow temporary grass cover over all exposed earth areas not draining into sediment basin or trap.
- C. Construct inlets as soon as possible.
- D. Provide necessary swales and dikes to direct all water towards, and into, sediment basins and traps.
- E. Do not disturb existing vegetation (grass and trees) in areas shown on plans "not to be disturbed" or "existing to remain." Take especial care to protect root zones of mature trees. Fence and do not allow construction activities or parked vehicles within driplines of trees.
- F. Excavate sediment out of basins and traps when capacity has been reduced by 50 percent. Remove sediment from behind rock check dams and filter fabric fences to prevent overlapping.
- G. Topsoil and fine grade slopes and swales, etc. to have seed and mulch as soon as possible in areas as they become ready.

3.03: Near Completion of Construction

- A. Eliminate basins, dikes, traps, etc.
- B. Grade to finished or existing grades.
- C. Fine grade all remaining earth areas, then seed and mulch.

*****End of Section 01 57 13*****

SECTION 01 58 13 – PROJECT IDENTIFICATION AND SIGNS

PART 1: GENERAL

1.01: Description

- A. Furnish, install, and maintain project identification sign.
- B. Provide temporary on-site informational signs:
 - 1. Project identification sign.
 - 2. Signs as required by codes, laws and regulatory agencies.
 - 3. Signs to direct pedestrian and vehicular traffic as necessary.
- C. Remove signs upon completion of construction.
- D. Allow no other signs to be displayed.
- E. Related Requirements Specified in Other Sections:
 - 1. Summary of Work: Section 01 11 00

1.02: Project Identification Sign

- A. One painted sign of not less than 16 sq. ft. area with painted graphic content to include:
 - 1. Title of Project.
 - 2. Name of Owner
 - 3. Titles and Names of:
 - a. Architect
 - b. Professional Consultants
 - 4. General Prime Contractor.
 - 5. Major Subcontractors
- B. Graphic design, style of lettering, and colors as approved by Architect.
- C. Erect on site at lighted location of high public visibility, adjacent to main entrance to site, as approved by Architect.

1.03: Informational Signs

- A. Painted signs with painted lettering, or standard products.
 - 1. Size of signs and lettering: As required by regulatory agencies, or as appropriate to usage.
 - 2. Colors: As required by regulatory agencies, otherwise of uniform colors throughout Project.
- B. Erect at appropriate locations to provide required information.

1.04: Quality Assurance

- A. Sign Painter: Professional experience, skilled in type of work required.
- B. Finishes, Painting: Adequate to resist weathering and fading for scheduled construction period.

PART 2: PRODUCTS

2.01: Sign Materials

- A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate and suitable for specified finish.
- B. Sign Surfaces: Exterior plywood with medium density overlay sized to eliminate joints.
- C. Thickness: As required by standards to span across framing members, to provide even, smooth, warp and buckle free surface.
- D. Hardware: Galvanized.
- E. Paint: Exterior quality, as specified in Section 09 90 00 colors for structure, framing, sign surfaces and graphics as approved by Architect.

PART 3: EXECUTION

3.01: Project Identification Sign

- A. Paint all exposed surfaces of supports, framing, and surface material; one coat of primer and one coat of exterior paint.
- B. Paint graphics in styles, sizes, and colors selected.

3.02: Informational Signs

- A. Paint all exposed surfaces; One coat primer and one coat of exterior paint.
- B. Paint graphics in styles, sizes, and colors selected.
- C. Install at height for optimum visibility, on ground-mounted poles or attached to temporary structural surfaces.

3.03: Maintenance

- A. Maintain signs and supports in neat, clean condition; repair damage to structure, framing or sign as needed.
- B. Relocate informational signs as required by work progress.

3.04: Removal

- A. Remove signs, framing, supports, and foundations at completion of Project.
- B. Areas where signs are removed shall be finished as specified.

*****End of Section 01 58 13*****

SECTION 01 71 24: CONSTRUCTION LAYOUT

PART 1: GENERAL

1.01: General Conditions

- A. The work under this section applies to all contract documents for this project.

PART 2: PRODUCTS

Not used.

PART 3: EXECUTION

3.01: Layout/Recording

- A. Contractor shall be responsible for performing construction layout work in accordance with data as indicated on the construction drawings or as directed by the Engineer. Use control benchmarks established by the Engineer to set all elevations. Utilize the dimensions and coordinates established on the site work drawings for all construction layout. Confirm the coordinate datums with the Engineer before commencing this effort. Do not scale drawings as basis for construction layout. Contractor shall maintain a log of layout work. Record deviations (if any) from drawing information on existing conditions and review with Engineer at time of discovery. This recorded information to be made available to other contractors who may perform work on this project.
- B. Construction Layout:
 - 1. Contract drawings indicate limits required for clearing and construction. The Owner's Representative will provide the following initial construction layout items:
 - a. Provide two (2) control benchmark locations and elevations.
 - b. Any of the above initial construction layout items disturbed or destroyed will be replaced at the expense of the responsible contractor.
 - 2. Specifications shall be considered minimum requirements and be supplemented by additional work on the part of this Contractor if necessary.
 - 3. Contractor shall be responsible for all construction layout required beyond the initial layout provided by the Engineer.

*****End of Section 01 71 24*****

SECTION 01 73 29 – CUTTING AND PATCHING

PART 1: GENERAL

1.01: Related Documents

- A. Drawings and general provisions of this contract apply to this Section, including General and Supplementary Conditions and other Division 1 Specifications Sections.

1.02: Summary

- A. This section specifies administrative and procedural requirements for cutting and patching, including the following cutting and patching necessary to:
 - 1. Complete the Work, including cutting and patching for work specified in Division 15 and 16 Sections.
 - 2. Make several parts fit together.
 - 3. Uncover portions of the Work to provide for installation of ill-timed work.
 - 4. Remove and replace defective work.
 - 5. Remove and replace work not conforming to requirements of the contract documents.
 - 6. Remove samples of installed work as specified for testing, and patch construction accordingly.
 - 7. Provide openings in structural and nonstructural elements for penetrations of mechanical and electrical work.
- B. Refer to other sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- C. Requirements of this section apply to mechanical and electrical installations. Refer to Division 15 and Division 16 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.
- D. Demolition of selected portions of the building for alterations is included in Section 02 41 19, “Selective Demolition.”

1.03: Submittals

- A. Cutting and Patching Proposal: Submit written request in advance of cutting or altering structural elements. Include the following information, as applicable, in the proposal:
 - 1. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
 - 2. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building’s appearance and other significant visual elements.
 - 3. List products to be used and firms or entities that will perform Work.
 - 4. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.

5. Determine locations of existing reinforcement and mark locations on concrete surface in field. Show required penetrations in addition to existing reinforcement.

1.04: Sequencing and Scheduling

- A. Sequence Work to minimize time between cutting and the installation of new construction.
- B. After uncovering work, examine conditions affecting product installations and work performance.

1.05: Quality Assurance

- A. Requirements for Structural Work
 1. Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load deflection ratio.
 2. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
 - a. Bearing Walls
 - b. Structural Concrete
 - c. Structural Steel

1.06: Operational and Safety Limitations

- A. Do not cut and patch operating elements or safety-related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance or decreased operational life or safety.
- B. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety-related systems:
 1. Primary operational systems and equipment
 2. Fire protection systems
 3. Control systems
 4. Communications and data systems

1.07: Visual Requirements

- A. Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching.
- B. Remove and replace Work cut and patched in a visually unsatisfactory manner.

PART 2: PRODUCTS

2.01: Materials

- A. Use materials that are identical to the existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match adjacent existing surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3: EXECUTION

3.01: Inspection

- A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Inspect elements subject to damage or movement during cutting and patching. If unsatisfactory conditions are encountered, notify Architect in writing of unsatisfactory conditions. Do not proceed with Work until Architect issues further instructions.
- B. Before proceeding, meet at the site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.02: Preparation

- A. Temporary Support: Provide temporary support of work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Take all precautions necessary to avoid cutting existing pipe, conduit, or ductwork serving the building, but scheduled for removal or relocation until provisions have been made to bypass them.
- E. Maintain excavations free from water.

3.03: Performance

- A. General: employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- B. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- C. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction.

1. In general, where cutting is required, use hand or small power tools for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 3. Cut through concrete and masonry using a cutting machine such as a carborundum saw or a diamond core drill.
 4. Comply with requirements of applicable Sections of Division 2 where cutting and patching requires excavating and backfilling.
 5. Bypass utility services such as pipe or conduit before cutting, where services are shown to be removed, relocated, or abandoned. Cut off pipe or conduit in wall or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after bypassing and cutting.
 6. Do not cut through reinforcing bars unless specifically indicated on structural drawings. If reinforcement is encountered, notify Architect immediately and obtain instructions for proceeding.
 7. Perform coring of concrete structure in manner to minimize damage to adjacent areas of concrete.
- D. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 3. Fit work tight to adjacent elements. Maintain integrity of wall, ceiling, or floor construction. Completely seal voids.
 4. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 5. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch, after the patched area has received primer and second coat.

3.04: Cleaning

- A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access.
- B. Completely remove paint, oils, putty, and items of a similar nature.
- C. Thoroughly clean piping, conduit, and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

*****End of Section 01 73 29*****

SECTION 01 74 23 – CLEANING

PART 1: GENERAL

1.01: Description

- A. Clean during work progress and at work completion as required by General Conditions and this section.

PART 2: PRODUCTS

- A. Use only those cleaning materials which do not create hazards to health or property and do not damage surfaces.
- B. Use only those cleaning materials and methods recommended by manufacturer of surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by the cleaning material manufacturer.

PART 3: EXECUTION

3.01: During Construction

- A. Clean work site periodically to keep work and adjacent properties free from accumulation of waste materials, rubbish, and windblown debris. Periodically remove waste materials, debris, and rubbish from site and dispose of at legal disposal areas away from site.
- B. Dust Control
 - 1. Prior to painting, clean interior spaces. Continue cleaning on an as-needed basis until painting is complete.
 - 2. Schedule operations so that cleaning processes do not interfere with painting.
- C. Final Cleaning
 - 1. Employ skilled personnel for cleaning.
 - 2. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from interior and exterior surfaces.
 - 3. Wash and shine glazing and mirrors. Polish glossy surfaces.
 - 4. Ventilation Systems
 - a. Clean permanent filters and replace disposable filters if units were operated during construction.
 - b. Clean ducts, blowers, and coils if units were operated during construction.
 - 5. Exterior Surfaces
 - a. Broom clean Exterior Paved Surfaces; rake clean other surfaces.
 - 6. Prior to final completion, Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces, and all work areas to verify that the entire work area is clean.

*****End of Section 01 74 23*****

SECTION 01 77 00 – CONTRACT CLOSEOUT

PART 1: GENERAL

1.01: Description

- A. Administrative Procedures in Closing Out the Work:
 - 1. Comply with requirements stated in Conditions of the Contract, and in Specifications.
- B. Related Requirements specified in other Sections:
 - 1. Summary of Work: Section 01 11 00
 - 2. Cleaning: Section 01 74 23
 - 3. Project Record Documents: Section 01 78 39
 - 4. Operating and Maintenance Data: Section 01 78 23
 - 5. Warranties and Bonds: Section 01 78 36
 - 6. Closeout Submittals required of trades per respective Sections of Specifications.

1.02 Section Includes

- A. Substantial completion requirements.
- B. Final acceptable requirements
- C. Project record documents.
- D. Operation and maintenance data.
- E. Warranties.
- F. Spare parts and maintenance materials.
- G. Final cleaning

1.03 Prerequisites to Substantial Completion

- A. Complete the following before requesting Architect/Engineer inspection for certification of substantial completion, either for entire Work or for portions of the Work. **List known exceptions in request.**
- B. In progress payment that accompanies, or is first request following date substantial completion is claimed, show either 100% completion for portion of the Work claimed as substantially complete or list incomplete items, value of incomplete work, and reasons for work being incomplete.
- C. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents.
- D. Deliver tools, spare parts, extra stock of material and similar physical items to Owner.

- E. Make final change-over of locks and transmit keys to Owner. Advise Owner's personnel of change-over in security provisions.
- F. Complete start-up testing of systems and instruction of Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities and services from project site, along with construction tools and facilities, mock-ups, and similar elements.
- G. Complete final cleaning requirements, including touch-up painting of marred surfaces.
- H. Touch-up and otherwise repair and restore marred exposed finishes.
- I. Obtain Certificate of Occupancy.

1.04 Substantial Completion Inspection

- A. Submit to the Architect written certification that the project is substantially complete in accordance with the Contract Documents, along with a list of major items still to be completed or corrected.
- B. Within ten business days after receipt of certification, the Architect and the Owner or his representative will either proceed with inspection or notify Contractor of unfilled prerequisites.
- C. Following initial inspection, Architect/Engineer will either prepare a Certificate of Substantial Completion (AIA Document No. G704) or will notify Contractor of work which must be performed before certificate will be issued.
- D. Architect/Engineer will repeat inspection when requested and when assured that work has been substantially completed.
- E. Results of completed inspection will form initial "items to be completed" for final acceptance.

1.05 Prerequisites for Final Acceptance

- A. Complete the following before requesting Architect/Engineer's final inspection for certification of final acceptance and final payment as required by General Conditions. **List known exceptions, if any, in the request.**
- B. Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
- C. Submit updated final statement, accounting for final additional changes to Contract Sum.
- D. Submit copy of Architect/Engineer's punch list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by Architect/Engineer.
- E. Submit final meter readings for utilities, a measured record of stored fuel, and similar data either as of the date of substantial completion, or when Owner took possession of and responsibility for corresponding elements of the Work.

- F. Submit Consent of Surety, receipts for testing costs, and final liquidated damages settlement statement acceptable to Owner.

1.06 Final Inspection

- A. Submit written certification that all work, including punch list item resulting from earlier inspections, has been complete except for items whose completion has been deleted because of circumstances acceptable to Architect/Engineer.
- B. Upon completion of inspection, Architect/Engineer will either prepare certificate of final acceptance, or will advise Contractor of work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance.
- C. Should the Architect/Engineer be required to perform second inspection because of failure of Work to comply with original certifications of contractor, Owner shall compensate Architect for additional services and travel expenses, and deduct amount paid from final payment to Contractor.

1.07 Final Payment

- A. Submit final Application for Payment in accordance with the requirements of the General Conditions of the Contract, along with final statement of account showing original contract sum, all additions and deductions, adjusted contract sum, previous payments, and sum remaining due. If necessary, Architect will issue final Change Order reflecting approved adjustments to Contract Sum not made by previous Change Order. Architect will then issue final Certificate for Payment in accordance with provisions of the General Conditions.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 - 1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
 - 2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
 - 3. Note related Change Order numbers where applicable.
 - 4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.

1. Upon completion of the Work, submit record Specifications to the Architect for the Owner's records.
- D. Submittal:
1. At completion of project, deliver original mark-up of Record Documents to Architect, one copy of all shop drawings including product data, and one copy of the Project Manual. Accompany submittal with letter of transmittal in duplicated containing date; project title and number of each Record Document; certification that each document as submitted is complete and accurate; signature of Contractor or his legally authorized representative.
- E. Miscellaneous Record Submittals:
1. Refer to individual specification sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to date or dates of substantial completion, complete miscellaneous records and place in good order properly identified and bound or filed, ready for continued use and reference. Submit to Architect/Engineer for Owner's record.

1.08 Operating And Maintenance Data

- A. Prior to final inspection, submit three sets of data for all operating equipment and controls, bound in three-ring side binders with durable covers. Each binder shall be tabbed 1 through 11 to match Section 1.7, Paragraph C below.
- B. Part 1 shall consist of a directory listing names, addresses, and telephone numbers of the Architect, Contractor and subcontractors.
- C. Part 2 shall consist of operation and maintenance instruction arranged by system. For each system, give names, addresses, and telephone numbers of subcontractors and suppliers. Include the following:
 1. Appropriate design criteria.
 2. Wiring diagrams.
 3. List of equipment and parts list.
 4. Operating instructions.
 5. Recommended "turn-around" cycles.
 6. Inspection procedures.
 7. Maintenance instructions for equipment.
 8. Maintenance instructions for finishes.
 9. Emergency instructions.

- 10. Shop drawings and product data.
- 11. Warranties.

1.09 Spare Parts and Maintenance Materials

- A. In additions to those used for construction, provide products, spare parts, and MAINTENANCE materials in quantities specified in each Specifications section. Coordinate with Owner, deliver to project site, and obtain receipt prior to final payment.
- B. Refer to individual specification sections for required quantities of spare parts, extra and overrun stock, maintenance tools and devices, keys, and similar physical items to be submitted.

1.10 Warranties and Bonds

- A. Provide duplicate, notarized copies of all product, systems and equipment warranties. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in binder with durable cover.
- B. Submit material prior to final Application for Payment. For equipment put into use with Owner's permission during construction, submit within ten days after first operation. For items of Work delayed materially beyond Date of Substantial completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.
- C. Provide warranties, guarantees and certificates as identified in the individual specification sections to the Owner upon completion.

1.11 Other Closeout Submittals

- A. In addition to submittals required by this section, provide all submittals required by governing authorities.
- B. Submit all keys and keying schedule; certificates of inspection by governing authorities on major items of equipment and service; and Certificate of Occupancy.
- C. Submit Affidavit of Payment of Debts and Claims (AIA G706) and Affidavit of Release of Liens (AIA G706A).

1.12 Warranty Inspection

- A. Approximately ten months after the date of final acceptance of the Work, the General Contractor will contact the Owner and Architect to arrange for a one-year warranty inspection at the project site. At the conclusion of the inspection, the Architect will provide the Owner and Contractor with a written list of items to be corrected by the Contractor under the terms of the project warranties.

PART 2: PRODUCTS

- A. Not Applicable

PART 3: EXECUTION

3.01 Instructing Operating Personnel

- A. Arrange for each installer of operating equipment and other work that requires regular of continuing maintenance to meet at the site with Owner's operation and maintenance personnel to provide necessary basic instruction in proper operation and maintenance of Work. Where installers are not experienced in required procedures, include instruction by manufacturer's representatives.
- B. As part of instruction for operating equipment, demonstrate the following procedures:
 - 1. Start-up.
 - 2. Shut-down.
 - 3. Emergency operations.
 - 4. Noise and vibration adjustments.
 - 5. Safety procedures.
 - 6. Economy and efficiency adjustments.
 - 7. Effective energy utilization.

3.02 Final Cleaning

- A. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all sight-exposed surfaces. Employ experienced workers or professional cleaners. Leave project clean and ready for occupancy.
- B. For cleaning of specific products or portions of the Work, refer to Specification section for that product or portion of the Work. Contractor shall use only cleaning materials recommended by manufacturer of surface to be cleaned. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.
- C. Remove grease, dirt, dust, stains, labels, fingerprints, and other foreign materials form sight-exposed interior and exterior finished surfaces. Polish all glass and bright metal surfaces. Repair, patch, and touch-up marred surfaces to specified finish matching adjacent surfaces. Broom clean paved surfaces, and rake clean other site areas. Replace air-conditioning filters if units were operated during construction. Replace chipped or broken glass. Clean ducts, blowers, and coils if air-conditioning units were operated without filters during construction. Vacuum carpeted surfaces. Clean plumbing fixtures to a sanitary condition. Maintain cleaning until Work is accepted by Owner.
- D. Except as otherwise indicated, remove temporary protections previously installed.
- E. Remove project sign.
- F. Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials on site. Do not bury debris or excess materials on Owner's property. Do not

discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from site and dispose of in a lawful manner.

3.03: Substantial Completion Review

- A. When Contractor considers Work substantially complete, he shall submit written certification that:
 - 1. Contract Documents have been reviewed;
 - 2. Work has been reviewed for compliance with Contract Documents;
 - 3. Work has been completed in accordance with Contract Documents;
 - 4. Equipment and systems have been tested in the presence of the Owner's representative and are operational;
 - 5. Work is completed and ready for final reviewing.
- B. Architect will review to verify completion status with reasonable promptness after receipt of certification.
 - 1. Should Architect consider Work to be incomplete or defective:
 - a) He will promptly notify Contractor in writing, listing incomplete or defective work.
 - b) Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to the Architect that Work is complete.
 - c) Architect will re-review.

3.04: Final Review

- A. When Contractor considers Work 100% complete, he submits written certification as directed above for final review by Architect and Owner.
- B. Contractor to complete final cleaning.
- B. Architect and Owner will review to verify completion status with reasonable promptness after receipt of certification.
- C. Should Architect and Owner consider the Work incomplete or defective they will notify Contractor as outlined above for corrections as outlined above, to be re-reviewed.
- D. When the Architect and Owner find the Work acceptable under Contract Documents they will request the Contractor to make closeout submittals.

3.05: Re-Review Fees

- A. Should Architect perform re-reviewing due to failure of Work to comply with claims of completion status made by Contractor, the Owner will compensate Architect for such additional services and deduct said amount from final payment to Contractor.

3.06: Contractor's Closeout Submittals to Owner

- A. Evidence of compliance with requirements of governing authorities:
 - 1. Certificates of Occupancy
 - 2. Certificates of Inspection.

- a. Mechanical.
- b. Plumbing
- c. Electrical.
- B. Project Record Documents, Operating and Maintenance Data, and Warranty information as required in other Sections.
- C. Keys and Keying Schedule: To requirements of Section 08 71 00.
- D. Evidence of Payment and Release of Liens: To requirements of General and Supplementary Conditions.
- E. Certificates of Insurance for Products and Completed Operations.

3.07: Final Adjustment of Accounts

- A. Submit final statement of accounting to Owner.
- B. Statement reflects all adjustments to Contract Sum:
 - 1. Original Contract Sum.
 - 2. Additions and Deductions resulting from:
 - a. Previous Change Orders.
 - b. Deductions for uncorrected Work
 - c. Deductions for liquidated damages
 - d. Deductions for re-reviewing payments
 - e. Adjustments for additional Architect's and/or Consultant's services
 - f. Other adjustments
 - 3. Total Contract Sum, as adjusted.
 - 4. Previous payments.
 - 5. Sum remaining due.
- C. Architect will prepare final Change Order, reflecting approved adjustments to Contract Sum not previously made by Change Orders.

3.08: Final Application for Payment

- A. Contractor submits Final Application of Payment in accordance with procedures and requirements stated per Conditions of the Contract.

*****End of Section 01 77 00*****

SECTION 01 78 23 – OPERATING AND MAINTENANCE DATA

PART 1: GENERAL

1.01: Description

- A. Compile product data and related information appropriate for Owner's maintenance and operation of products, equipment, and materials furnished under this contract and prepared as specified herein.
- B. Instruct Owner's personnel in operating and maintaining procedures for products furnished in this Contract.
- C. Related Requirements Specified in Other Sections:
 - 1. Contract Closeout: Section 01 77 00.
 - 2. Warranties and Bonds: Section 01 78 36.

1.02: Form of Submittals

- A. Prepare data in instructional manual form for use by Owner's personnel.
- B. Provide in commercial quality, cleanable, 3-ring binder with 8-1/2" x 11" format of 20# white paper, or manufacturer's printed data, neatly typewritten. Provide with appropriate drawings (folded to 8-1/2" x 11", usable in binder) and separate index-tabbed flyleaf for each product.
- C. Provide each manual with printed title, "OPERATING AND MAINTENANCE INSTRUCTIONS" and volume number (if needed) and the Project name and address on the cover in durable letters.

1.03: Contents of Manual

- A. Neatly typewritten table of contents for each volume, arranged in systematic order.
 - 1. Contractor name, name of responsible principal, address and telephone number.
 - 2. List of each product included, indexed to content of volume.
 - 3. For each product list the name, address, and telephone number (with area of responsibility for each identified) of:
 - a. Subcontractor or installer.
 - b. Maintenance contractor, as appropriate.
 - c. Local source of supply for parts and replacement.
 - 4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
- B. Include only those sheets that are pertinent to the specific product, clearly identified on each sheet, with inapplicable information deleted.
- C. Supplement product data with appropriate drawings as necessary to illustrate relations of component parts of equipment and systems and control and flow diagrams.
 - 1. Coordinate with Project Record Documents.

2. Do not use Project Record Documents as maintenance drawings.
 3. Written text, as necessary, to supplement product data provided in an organized, logical sequence and format for each product.
- D. Copy of each warranty, bond, and service contract issued for each product showing proper procedures in the event of failure and instances that might affect validity of warranties and bonds.

PART 2: PRODUCTS

2.01: Manual for Materials and Finishes

- A. Provide manual for materials and finishes of Project components.
- B. Show information on Architectural products, applied materials and finishes giving manufacturer's data, instructions for care and maintenance, and re-ordering information.
- C. Show additional information on moisture-protection and weather-exposed products regarding chemical composition, details of installation, and inspection, maintenance, and repair data.
- D. Additional requirements for maintenance data as required or listed in the respective sections of the Specifications.

2.02: Manual for Equipment and Systems

- A. Provide manual for equipment and systems provided in Construction Contract.
- B. Show for each unit of equipment and/or system, as appropriate:
 1. Description of unit and component parts and their function, operating characteristics, limiting conditions, engineering data and tests, and complete nomenclature and commercial number of all replaceable parts.
 2. Operating procedures for start-up, break-in, normal operation, regulation and control, shut-down (emergency and normal), special conditions, and seasonal modifications to operations.
 3. Maintenance procedures for routine operation, trouble-shooting, disassembly and reassembly, repair and adjustments.
 4. Servicing schedule (identifying materials needed).
 5. Manufacturer's printed operating and maintenance instructions.
 6. Description of sequence of operation by control manufacturer (as necessary).
 7. Original manufacturer's component parts information.
 8. As-installed information as differing from provided data.
 9. Location and Contractor's coordination information.
 10. Manufacturer's spare parts recommendations.
- C. Show for each electric unit and electronic system:
 1. Description of system and component parts and their function, operating characteristics, limiting conditions, engineering data, and complete nomenclature and commercial number of replaceable parts.

2. Circuit directories of panelboards (including for controls and communications).
 3. As-installed color-coded wiring diagrams.
 4. Operating procedures (including sequences and other special instructions).
 5. Maintenance procedures for routine operations, trouble-shooting, disassembly and reassembly, repair and adjustments.
 6. Manufacturer's printed operating and maintenance instructions.
 7. As-installed information as differing from provided data.
 8. Manufacturer's spare parts recommendations.
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
- E. Provide additional data on other equipment as called for in other sections of the Specifications, including products specified in Divisions 15 and 16.

PART 3: EXECUTION

3.01: Submittals

- A. Submit two copies of the Manual for Materials and Finishes, and three copies of the Manual for Equipment and Systems (equipment and systems, mechanical and electric).
- B. Submit draft copy to Architect for review fifteen days prior to final inspection.
- C. Submit final copies ten days after final inspection or acceptance.

3.02: Instruction of Owner's Personnel

- A. Prior to final inspection or acceptance fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment, and maintenance of all products, equipment and systems.
- B. Operating and maintenance manual shall constitute the basis of instruction and shall be reviewed with personnel in full detail to explain all aspects of operations and maintenance.

*****End of Section 01 78 23*****

SECTION 01 78 36 – WARRANTIES AND BONDS

PART 1: GENERAL

1.01: Description

- A. The Contractor shall guarantee the work and equipment for a period of 1 year after final payment
- B. Roofing and flashing systems shall be guaranteed for 2 years.
- C. In cases where manufacturers' warranties on equipment, work and services are less than the guarantee period the contractor shall guarantee the equipment, work and services for the guarantee period.
- D. In the event that repairs are required during the guarantee period, the guarantee on that portion of the work will extend for a period of 1 year beyond the date of repair except the guarantee on roofing and flashing systems shall be for 2 years.
- E. Provide the Owner's Maintenance Manager with the name of a person and an alternate at the Contractor's Office who will be responsible for performing all Guarantee and Warranty Work. This person shall be available on a 24-hour emergency basis. In event that either person will not be available the contractor shall assign a temporary person and notify the Owner's Maintenance Manager.
- F. Provide the Owner's Maintenance Manager with a complete list of service agencies that will be retained by the General Contractor to perform Warranty and Guarantee Work.

1.02: Requirements from other parts of Project Manual

- A. Related Requirements in Other Parts of Project Manual:
 - 1. Performance Bond and Labor and Material Payment Bond: Conditions of the Contract.
 - 2. Maintenance Bonds: Supplementary Conditions.
 - 3. General Warranty of Construction: Conditions of the Contract.
- B. Related Requirements Specified in Other Sections:
 - 1. Contract Closeout: 01 77 00
 - 2. Operating and Maintenance Data: 01 78 23
 - 3. Certificates, Warranties, and Bonds Required for Specified Products: each respective section of Specifications listed below.
 - 4. Provisions of Warranties & Bonds, Duration: the respective section of Specifications specifying the product.

PART 2: PRODUCTS

2.01: Not Applicable

PART 3: EXECUTION

3.01: Submittal Requirements

- A. Assemble certificates, warranties, bonds, and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.
- B. Provide two original signed copies of submittals
- C. Table of Contents: Provide the following, neatly typed in orderly sequence and including complete information for each item:
 - 1. Product or work item.
 - 2. Firm, with name of principal, address, and telephone number.
 - 3. Scope.
 - 4. Date of beginning of warranty, bond or service and maintenance contract.
 - 5. Duration of warranty, bond or service maintenance contract.
 - 6. Provide information for Owner's personnel:
 - a. Proper procedure in case of failure.
 - b. Instances which might affect validity of warranty or bond.
 - 7. Contractor, name of responsible principal, address and telephone number.
- D. Review submittals to verify compliance with Contract Documents.
- E. Submit to Architect for review and transmittal to Owner.

3.02: Form of Submittals

- A. Prepare in duplicate packets.
- B. Format:
 - 1. Size 8-1/2 in. x 11 in., punch sheets for 3-ring binder.
 - 2. Fold larger sheets to fit into binders.
- C. Cover:
 - 1. Identify each packet with typed or printed title: "Warranties and Bonds".
 - 2. List:
 - a. Title of Project.
 - b. Name of Contractor.
- D. Binders shall be of commercial quality, three-ring, with durable and cleanable plastic covers.

3.03: Time of Submittals

- A. Submit documents within 10-days after inspection and acceptance for equipment or component parts of equipment put into service during progress of construction:

3.04: Submittals Required

- A. Contractor to coordinate and submit certificates, warranties, bonds, service and maintenance contracts as specified in the respective sections of the Specifications.

*****End of Section 01 78 36*****

SECTION 01 78 39 – PROJECT RECORD DOCUMENTS

PART 1: GENERAL

1.01: Description

- A. Contractor shall provide drawings showing all changes, deviations, and differences from the original Architect's drawings, representing the as-built condition of the facility

PART 2: PRODUCTS

2.01. Prior to final acceptance, furnish copies of each of the following to the Owner:

- A. One legibly marked copy of as-built construction documents and shop drawings indicating:
 - 1. Significant detail and dimension changes or omissions.
 - 2. Final location of underground and concealed utilities and appurtenances.
- B. One copy, with pertinent notes and comments, legibly marked and bound of:
 - 1. Addenda.
 - 2. Change Orders and other Contract Modifications.
 - 3. Field Orders and/or written instructions.
 - 4. Field test reports or records.
- C. Two bound copies for review and distribution of the following:
 - 1. Guarantees, warranties, certificates, bond releases, etc.
 - 2. Operating and maintenance instructions for all equipment.

PART 3: EXECUTION

3.01. Maintenance

- A. Store documents and samples in Contractor's field office apart from those used for construction.
- B. Store in orderly, clean, dry, legible condition.
- C. Do not use documents for construction purposes.
- D. Documents shall be available, at all times, to Architect for review and inspection.

3.02: Recording

- A. Label each document "PROJECT RECORD" in neat, large printed letters.
- B. Record construction information and changes on drawings concurrently with construction progress, prior to concealing of Work.

- C. If differences between Construction Documents and in-place construction are extensive the information shall be recorded on reproducible drawings.
- D. Include the following information on Project Record Documents:
 - 1. Depth of various elements of the foundation footings as they vary from the Construction Documents.
 - 2. Horizontal and vertical locations of underground and underslab utilities and appurtenances referenced to a visible, accessible feature of the structure.
 - 3. Location of internal utilities and appurtenances concealed in the Construction referenced to visible and accessible features of the Construction.
 - 4. Field changes of dimension and detail.
 - 5. Changes made by Field, Change, or other orders.
 - 6. Details not on original Contract Documents.

3.03: Submittal

- A. Pay all costs associated with providing Project Record Documents.
- B. Accompany submittal with transmittal letter with pertinent project information signed by the Contractor, or his authorized representative.

*****End of Section 01 78 39*****

SECTION 01 87 00 – MATERIAL AND EQUIPMENT

PART 1: GENERAL

1.01: Description

- A. General:
 - 1. Furnish all labor, materials, tools, equipment, work and services for delivery, receiving, handling, storage and protection of materials and equipment.
 - 2. See technical sections for additional requirements.
 - 3. Completely coordinate with work of other trades.
 - 4. Although such work is not specifically indicated, furnish all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
- B. Material and Equipment:
 - 1. Comply with size, make, type and quality specified, or as specifically approved in writing by Architect.
 - 2. Manufactured and Fabricated Products:
 - a. Design, fabricate, and assemble in accord with best engineering and shop practices.
 - b. Like parts of duplicate units to be manufactured to similar sizes and gauges, to be interchangeable.
 - c. Two or more items of the same kind shall be identical and by same manufacturer.
 - 3. Do not use materials and equipment for other than designed or specified purposes and service conditions.

1.02: Codes and Construction Requirements

- A. Comply with applicable codes.
- B. Accomplish work to avoid damage to property.
- C. Clean debris from streets and walks.
- D. Provide fire protection.

1.03: Related Requirements Specified in Other Sections:

- A. Request for Substitution Form: Section 00 43 25
- B. Summary of Work: Section 01 11 00
- C. Shop Drawings, Product Data, and Samples: Section 01 33 23

1.04 Products

- A. Products are defined as new material, machinery, components, equipment, fixtures, and systems forming the Work. Products do not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Provide interchangeable components of the same manufacturer, for similar components.

1.05 Transportation and Handling

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.06 Storage and Protection

- A. Contractor to store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports, above ground.
- C. Provide off-site storage and protection when site does not permit on-site storage or protection.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area. Provide barrier to prevent mixing with foreign matter.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.07 Product Options and Substitutions

- A. Standard of Quality:
 - 1. Where one manufacturer or material is called for, listed, or otherwise designated by the drawings or specification, provide only that product or material, unless the specification notes that substitutions are permitted. Where the words "equivalent", "or equal" or similar wording is used, it shall be understood to mean that the item referred to shall be, in the opinion or judgment of the Architect or Owner, the equivalent of, or equal to the specified item, and suitable for the intended use.
 - 2. Unless otherwise specified, all materials shall be the best of their respective kind and shall be in all cases fully equal to approved samples.
 - 3. With the written approval of the Owner or Owner's Representative and the Architect as provided below, other manufacturers or materials may be used provided there is not a decrease in the quality of the finished product. The Contractor shall assume responsibility for certification of equal quality on substitutions, and shall provide the same warranty for substituted items as for those originally specified.

B. Substitutions:

1. Notwithstanding the use in the specifications of the term "or equal", or other such expressions as applied to a material, manufactured article or process, the item specifically designated shall be used unless a substitute as approved in writing by the Architect or Owner, and they shall have the right to require the use of such specifically designated materials, articles or processes.
2. During the Bidding phase written Requests for Substitutions will be considered. Written requests must be submitted on the "Substitution Request Bidding Phase Form" (For substitutions prior to bidding) at the end of this Section. Substitution requests made during the bidding period must be submitted in writing to the Architect, 7 business days prior to bid date. Substitutions requested during the bidding period, which have been accepted prior to Bid Date, will be included in the Contract Documents by Addendum.
3. After the date of the Contract, the Owner may consider formal requests from the Construction Manager for substitution of products in place of those specified when submitted in accordance with the requirements of this Section. One or more of the following conditions must also be documented. Written requests must be submitted on the "Substitution Request after Execution of Contract Form" at the end of this Section.
 - a. The substitution must be required for compliance with interpretation of code requirements or insurance regulations.
 - b. The substitution must be due to the unavailability of the specified products, through no fault of the Contractor.
 - c. The substitution may be requested when subsequent information discloses the inability of the specified products to perform properly or to fit in the designated space.
 - d. The substitution may be due to the manufacturer's or fabricator's refusal to certify or guarantee performance of the specified product as required.
 - e. The substitution may be requested when it is clearly seen, in the judgment of the Architect/Engineer that a substitution would be substantially to the Owner's best interest in terms of cost, time or other considerations.
 - f. When substitution is rejected provide material or product as specified.
4. Request for Substitution submitted prior to bidding must include the following:
 - a. Complete data substantiating compliance of proposed substitution with Contract Documents.
 - i. Product identifications, including manufacturer's name and address.
 - ii. Manufacturer's literature including product description, performance and test data, and reference standards.
 - iii. Name and address of similar projects on which product was used and date of installation.
 - b. Itemized comparison of proposed substitution with product or method specified.
 - c. A statement setting forth changes in other materials, equipment, or other portions of the Work including changes in the work of other contracts that incorporation of the proposed substitution would require shall be included. The burden of proof of the merit of the proposed substitution is upon the Contractor.
 - d. When substitution is rejected, provide materials or product as specified.

5. Request for Substitution submitted after contract is signed indicates that the Manufacturer, Subcontractor or Contractor makes the following representations.
 - a. They have personally investigated proposed product and insure that it is acceptable or superior in all respects to that specified.
 - b. They will provide the same guarantee for substitution as for product specified and that substitution will not adversely effect any related specified products guarantee.
 - c. They will coordinate installation of accepted substitution into Work, making such changes as may be required for Work to be completed in all respects as originally specified.
 - d. They waive all claims for additional costs related to substitution which consequently become apparent.
 - e. They have included accurate cost data on proposed substitution in comparison with products or method specified and date relating to changes in construction schedule.
 - f. Cost data is complete and includes all related costs under the Contract, but excludes:
 - i. Cost under separate Contracts.
 - ii. Design consultant's redesign.
 6. Substitutions will not be considered if:
 - a. They are indicated or implied on Shop Drawings or Product Data submittals without request.
 - b. Acceptance will require substantial revision of Contract Documents.
- C. Replacement:
- Within the warranty period, should an accepted substitution prove to be defective or otherwise unsatisfactory for the function intended, it shall be replaced at no cost to the Owner with the material or equipment originally specified.

PART 2: PRODUCTS

2.01 General Compliance

- A. General: Requirements for individual products are indicated in the Contract Documents; compliance with these requirements is in itself a contract requirement. These requirements may be specified in any one of several different specifying methods, or in any combination of these methods. These methods include the following.
 1. Propriety
 2. Descriptive
 3. Compliance with Reference Standards.
 4. Compliance with codes, compliance with graphic details, allowances, and similar provisions of the Contract Documents.
- B. Procedure for Selecting Products: The Contractor's option to select products is limited by requirements of the Contract Documents and governing regulations. They are not to be solely controlled by industry traditions or procedures experienced by the Contractor on previous construction projects. Required procedures include but are not limited to the following for the various indicated methods of specifying:

1. Propriety and Semi-proprietary Specification Requirements:
 - a. Proprietary Specification: Where only a single product or manufacturer is named, provide the product indicated, unless the specification indicates possible consideration of other products. The contractor shall advise the Architect/Engineer before proceeding, when it is discovered that the named product is not a reasonable or feasible solution.
 - b. Semi-proprietary Specification: Where two or more products or manufacturers are named, provide one of the products named, at the Contractor's option. Exclude products that do not comply with specification requirements. Do not provide or offer to provide an unnamed product, unless the specification indicates possible consideration of "acceptable substitutions". Acceptable substitutions will be considered prior to bidding unless meeting requirements of 1.05, B, 3 of this specification for substitutions. The contractor shall advise the Architect/Engineer before proceeding where none of the named products comply with specification requirements, or are feasible for use.
2. Descriptive Specification Requirements: Where the specifications describe a product or assembly generically, in detail, listing the exact characteristics required, but without use of a brand or trade name, provide products or assemblies that provide the characteristics indicated and otherwise comply with contract requirements.
- C. Compliance with Standards, Codes and Regulations: Where the specifications require only compliance with an imposed standard, code or regulation, the Contractor has the option of selecting a product that complies with specification requirements, including the standards, codes and regulations.
- D. Visual Matching: Where matching an established sample is required, the final judgment of whether a product proposed by the Contractor matches the sample satisfactorily will be determined by the Architect. Where there is no product available within the specified product category that matches the sample satisfactorily and also complies with other specified requirements, comply with the provisions of the Contract Documents concerning "substitutions" and "change orders" for the selection of a matching product in another category, or for non-compliance with specified requirements.
- E. Visual Selection: Except as otherwise indicated, where specified product requirements include the phrase "...as selected from the manufacturer's standard colors, patterns, textures..." or similar phrases, the Contractor has the option of selecting the product and manufacturer, provided the selection complies with other specified requirements. The Architect is subsequently responsible for selecting the color, pattern and texture from the product line selected by the Contractor.

PART 3: EXECUTION

3.01: See individual Specification Sections

*****End of Section 01 87 00*****

SECTION 01 91 13 – GENERAL COMMISSIONING REQUIREMENTS

PART 1: General

1.01 REQUIREMENTS INCLUDED

A. Starting Of Systems

1. System demonstrations and Owner personnel instruction for equipment and systems for which operating and maintenance data is required.

1.02 RELATED SECTIONS

- ##### **A. Section 01 77 00 - Contract Closeout.**

1.03 QUALITY ASSURANCE:

A. Instructors

1. Qualified member(s) of installers' staffs and authorized representative(s) of component, assembly, or system manufacturer(s).
2. Refer to individual specification sections for additional requirements.

1.04 PRESENTATION

A. Project information

1. Submit separate report for each system or type of equipment, subject to Owner's approval.
 - a. Submit report (form attached), with preliminary information indicated, to Owner at least 2 weeks prior to first instruction period.
 - b. Submit completed report; one copy each to Owner and Architect.
2. Submit Owner Instruction Schedule to Owner, 30 days prior to first instruction. Coordinate schedule with Owner

1.05 STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.**
- B. Notify Owner or Owner's Representative, Architect and Owner 7 days prior to start-up of each item.**
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.**

- D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of responsible manufacturer's technical representative and Contractor's personnel in accordance with manufacturer's instructions.
- G. When specified in individual specification sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. Submit a written report in accordance with Section 01400 that equipment or system has been properly installed and is functioning correctly.

1.06 DEMONSTRATIONS AND INSTRUCTIONS

- A. Instruct Owner's personnel in operation, adjustment and maintenance of operating equipment, and systems and finish materials.
 - 1. Schedule instruction at times agreed upon by Owner in accordance with Special Conditions.
 - 2. For equipment requiring seasonal operation, perform instructions for other season within 6 months.
- B. Instruct Owner's personnel in proper maintenance of finish materials.
- C. Amount of time to be devoted to instructions shall be reasonable and instruct Owner's personnel in proper, safe operating and maintenance of equipment
- D. Use operating and maintenance manual as basis of instruction. Explain use of operating and maintenance manuals.
- E. Tour building areas involved and identify:
 - 1. Maintenance points and access.
 - 2. Control locations and equipment
- F. Explain operating sequences.
 - 1. Identify location and show operation of switches, valves, and controls, used to start, stop and adjust systems.
 - 2. Explain use of flow diagrams, operating sequence diagrams, and other instructions.
 - 3. Demonstrate operation through complete cycle(s) and full range of operation in all modes, including testing and adjusting relevant to operation.

- G. Explain use of control equipment, including temperature settings, switch modes, available adjustments, reading of gages; and functions that must be serviced only by authorized factory representatives.
- H. Explain trouble shooting procedures.
 - 1. Demonstrate commonly occurring problems.
 - 2. Note procedures which must be performed by factory personnel.
- I. Explain maintenance procedures and requirements.
 - 1. Identify items requiring periodic maintenance.
 - 2. Demonstrate typical preventive maintenance procedures and recommended typical maintenance intervals.
 - 3. Demonstrate other commonly occurring maintenance procedures not part of preventive maintenance program.
 - 4. Identify maintenance materials to be used.
- J. Furnish tools required.
- K. Unless otherwise indicated, provide personnel to videotape each demonstration and instruction session. Catalog each tape as to content, time, and personnel in attendance. Submit tapes at time of close-out document submission.

PART 2: PRODUCTS

Not Used

PART 3: EXECUTION

Not Used

*****End of Section 01 91 13*****

EQUIPMENT AND SYSTEMS OWNERS INSTRUCTION REPORT

Project: **Waterstone Assisted Living and Memory Care**

System or equipment: _____

NOTE: Contractor's Representative shall maintain and complete this report during course of instruction.

I. PRELIMINARY INFORMATION:

A. To be completed by Contractor:

1. Proposed dates for instruction period: _____.
2. Contractor Representative conducting instruction: _____.
3. Number of hours of instruction required: _____.

B. To be completed by Owner:

1. Owner's personnel to be instructed (Designate supervisor if required.)
 - a. _____.
 - b. _____.
 - c. _____.
 - d. _____.

II. INSTRUCTION LOG:

Date	No. Hours	Mat'l Covered	Instructor's Initials	Owners Personnel Receiving Instruction	Owner's Personnel Initials	Comments

Total Hours _____

Date Instruction Completed: _____

Instructor's Signature: _____

Owner's Signature: _____