

SECTION 01100

SUMMARY OF THE WORK

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: The Project consists of :
- B. Project Location:
- C. University:
- D. Architect Identification:
- E. Contractor:
- F. The Work consists of :

1.3 WORK BY UNIVERSITY (OTHERS)

- A. The University will award a contract for the installation of:

1.4 UNIVERSITY-SUPPLIED PRODUCTS

- A. University's Responsibilities:
  - 1. Arrange for and deliver University reviewed Shop Drawings, Product Data and Samples, to the Contractor.
  - 2. Arrange and pay for delivery to the site of University-furnished items according to Contractor's Construction Schedule.
  - 3. On delivery, inspect delivered items for damage. Contractor shall be present for and assist in University's inspection.
  - 4. If University-furnished items are damaged, defective, or missing, the University will arrange for replacement.
  - 5. The University will arrange for manufacturer's field services and for delivery of manufacturer's warranties to Contractor.
  - 6. The University will furnish Contractor the earliest possible delivery date for University-furnished products. Using University-furnished earliest possible delivery dates, Contractor shall designate delivery dates of University-furnished items in Contractor's Construction Schedule.
- B. Contractor's Responsibilities:

1. Review University reviewed Shop Drawings, Product Data, and Samples and return them noting discrepancies or anticipated problems in use of product.
2. Receive and unload University-furnished items at Project site.
3. Contractor is responsible for protecting University-furnished items from damage during storage and handling, including damage from exposure to the elements.
4. If University-furnished items are damaged as a result of Contractor's operations, Contractor shall repair or replace them.

1.5 CORRESPONDENCE:

- A. All correspondence concerning this work that is directed to the University of Maryland shall be addressed as follows:
- , Project Manager  
Facilities Management  
Department of Campus Projects  
1600 Service Building  
University of Maryland  
College Park, Maryland 20742-6033  
Reference: Project QC Number

1.6 WORK RESTRICTIONS

- A. USE OF PREMISES
1. General: The Contractor shall have full use of the premises for construction operations, including use of Project site, during construction period. Contractor's use of premises is limited only by University's right to perform work or to retain other Contractors on portions of Project.
  2. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
  3. Limits: Confine construction operations to area defined as limit of disturbance.
  4. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to University, University's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
  5. Truck deliveries shall be scheduled so that streets adjacent to the site do not back up with delivery trucks waiting to deliver materials. Trucks must be scheduled accordingly, or wait to unload inside the fence in the project site or off of the University property.
  6. Critical site controls include but are not limited to the following:
    - a. Off-hours work shall be coordinated with the Campus Projects Project Manager
    - b. Dust partitions & fans control dust fumes & vapors.
    - c. Non-interruption of utilities.

- d. Any activities or issues not covered above shall be coordinated in advance with the Campus Projects Project Manager
  - e. Protection of stored materials.
  - f. Circulation paths within the building must remain clear (no storage)
  - g. All employees (contractor and sub-contractors) shall wear identification. Shirts with company logo.
  - h. All employees shall wear Personal protective equipment (PPE). Hard hats and safety glasses are mandatory.
  - i. The Contractor shall maintain a Hazard Communication program. Material Safety Data Sheets (MSDS) shall be maintained in a marked binder on site and the information shall be updated as appropriate.
  - j. The construction site shall be secured at all time to prevent unauthorized entry. Appropriate signage shall be placed at the site to indicate: Construction site, authorized personnel only, hard hat area. The proposed sign shall be approved by the Project Manager.
  - k. Smoking is prohibited on Campus.
7. Interruptions to utility services, vehicular or pedestrian traffic – outages: The Contractor shall include planned disruptions to University utilities in the agendas for project meetings, but in no case shall the Contractor proceed with any work that could disrupt services to University buildings without a fourteen day written notice to the University and a written agreement by the University to the proposed outage or disruption period.
- B. NOISE CONTROL AND NO-WORK DAYS**
1. Hold construction and demolition noise to a minimum consistent with the type of work underway. Eliminate unnecessary noise.
  2. Restricted operations due to noise pollution include the following:
    - a. Demolition
    - b. Excavation
    - c. Pile Driving
    - d. Jack Hammering
    - e. Sawing
    - f. Other noisy equipment
  3. Do not perform noisy construction operations that would disturb exam periods or other activities indicated below. Designated exam periods from "study day" through Commencement Day.
    - a. Fall Term
    - b. Winter Term
    - c. Spring Term
    - d. Summer Term I
    - e. Summer Term II
  4. At the direction of the Project Manager, work may be restricted on the following days:
    - a. Winter Commencement Day
    - b. Maryland Day
    - c. Spring Commencement Day
  5. Information concerning the University's Academic Calendar can be found at <http://www.provost.umd.edu/calendar/>.

1.7 SEXUAL HARASSMENT:

- A. The University of Maryland is committed to maintaining a working and learning environment in which students, faculty and staff can develop intellectually, professionally, personally and socially. Such an environment must be free of intimidation, fear, coercion and reprisal. The University prohibits sexual harassment.
- B. The Contractor will be responsible to inform his and his Trade Contractors and subcontractors work force that any act of sexual harassment will not be tolerated and such acts will be severely dealt with to include removal from the site.
- C. Sexual harassment includes but not limited to the following:
  - 1. Lewd remarks, suggestive sounds such as whistling, wolf calls, etc.
  - 2. Unwanted physical contact
  - 3. Persistent and offensive sexual jokes and comments

1.8 OCCUPANCY REQUIREMENTS

- A. Full University Occupancy: University will occupy areas within the building and surrounding areas of the building during the entire construction period. Cooperate with the University during construction operations to minimize conflicts and facilitate University usage. Perform the Work so as not to interfere with University's operations.
- B. Partial University Occupancy: University reserves the right to occupy and to place and install equipment in completed areas of the Project before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.
  - 1. University will prepare a Certificate of Beneficial Occupancy for each specific portion of the Work to be occupied before Substantial Completion.
  - 2. Before partial University occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. University will operate and maintain mechanical and electrical systems serving occupied portions of the building.
  - 3. The University will assume responsibility for custodial service for occupied portions of the building.

1.9 MATERIAL NOT ACCEPTABLE

- A. Contractor is responsible to not submit any product which contains an asbestos material.

PART 2 – PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 01100

SECTION 01210

ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances
  - 1. Certain materials, equipment, items and services are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials, equipment, items or services to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. In accordance with Contract General Conditions, Part 8.04, any unexpended costs in the allowance balance will revert to the University 100%.
- C. Types of allowances include the following:
  - 1. Lump-sum allowances.
  - 2. Unit cost allowances
  - 3. Cash Allowances
  - 4. Testing and Inspection Allowances
  - 5. Contingency Allowances
  - 6. Installation Allowance
  - 7. Product Allowance
  - 8. Quantity Allowances
- D. Related Sections include the following:
  - 1. Section 01250 "Contract Modification Procedures"

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after acceptance of the Contract Sum, the Contractor will advise the Project Manager of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

- B. At Project Manager's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Contract Modification Procedures.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.5 UNUSED MATERIALS

- A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
  - 1. If requested by the Project Manager, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Project Manager, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. See Construction Drawings for Schedule

END OF SECTION 01210

SECTION 01230

ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
  - 1. The cost for each alternate is the net addition to the Contract Sum to incorporate the alternate into the Work.

1.4 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into the Project.
  - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
  - 2. The cost for each alternate shall include costs of related coordination, modification or adjustment.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A Schedule of Alternates is included on the Construction Drawings



PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 SCHEDULE OF ALTERNATES

See construction drawings

END OF SECTION 01230

SECTION 01240

UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.
- B. Related Sections include the following:
  - 1. Section 01250 "Contract Modification Procedures"

1.3 DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract sum by appropriate modification, if estimated quantities of Work required by Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires the establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
  - 1. Owner reserves the right to reject Construction Manager's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Construction Manager.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 UNIT PRICE SCHEDULE

- A. As indicated on Construction Drawings

END OF SECTION 01240

SECTION 01250

CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing contract modifications.
- B. Related Sections include the following:
  - 1. Section 01290 "Payment Procedures"
  - 2. Section 01310 "Project Management and Coordination"
  - 3. Section 01315 "CPM Schedule and Reports"
  - 4. Section 01330 "Submittal Procedures"
  - 5. Section 01600 "Product Requirements"

1.3 MINOR CHANGES IN THE WORK

- A. The Architect may issue supplemental instructions making minor changes in the Work, not involving adjustment to the Contract Sum or Contract Time, on AIA Form G710, Architect's Supplemental Instructions.

1.4 NOTIFICATION OF CONTRACT CHANGES

- A. When the Contractor considers that the University has affected or may affect a change in the contract by any action or inaction of the University, it is necessary that the Contractor promptly notify the University in writing as soon as possible and within the time frames established in the General Conditions of the Contract. The written notice will indicate the date, nature, circumstances, and the source of the instructions the Contractor feels will result in a change to the contract.
- B. Events, actions or communications which could impact contract cost and or time include but are not limited to:
  - 1. Architect's notations on submittals
  - 2. Architect's response to Request for Interpretation (RFI's)
  - 3. Verbal communications from the University representatives/Architect
  - 4. Actions, inactions, and written or oral communications which potentially delay or disrupt the work.

- C. University Action
  - 1. The Project Manager, will promptly evaluate the Notice of the alleged change and, in writing:
    - a. Confirm that it is a change and direct the mode of further performance;
    - b. Countermand any communication regarded as a change that the University does not desire to pursue;
    - c. Notify the Contractor that no change is considered to have occurred and direct the mode of further performance.
    - d. If the Contractors notice information is inadequate, advise the Contractor what additional information is required.
  - 2. Contract Modifications shall be priced before their execution if this can be done without adversely affecting the interest of the University. If a significant cost or time increase could result from a contract modification and time does not permit negotiation of a price, a maximum price shall be negotiated to be used in a Procurement Officers decision to issue a NOTICE TO PROCEED with the modification on a NOT TO EXCEED basis.

1.5 CHANGE ORDER REQUESTS (COR)

- A. Owner/Architect-Initiated Requests: This is a request to the Contractor, signed by the Project Manager, for submission of an itemized quotation for changes in the Contract Sum or Contract Time. These requests will provide a detailed description of proposed changes including supplemental or revised Drawings and Specifications if necessary.
  - 1. This is not a Contract Modification or a direction to proceed with the Work.
  - 2. Within 5 days of receipt of a COR, the Contractor shall submit a detailed cost proposal indicating all costs necessary to execute the change to the Owner and Architect for review. After pricing by the Contractor, it becomes a Change Order Proposal (COP). Provide supporting information including, but not limited to:
    - a. Labor required.
    - b. Equipment required (specify whether rental or company owned).
    - c. Products required.
    - d. Quantities required and unit prices (furnish survey data to substantiate quantities if requested by Owner or A/E.)
    - e. Taxes, insurance, and bonds.
    - f. Delivery charges
    - g. Credit for work deleted from Contract, similarly documented.
    - h. Overhead and profit for Trade Contractors.
  - 3. Justification for any change in Contract Time. Include an updated Construction Schedule Fragnet that indicates the effect of the change, including, but not limited to, changes in activity durations, start and finish times , and activity relationships. Use available total float before requesting an extension of Contract Time

4. Include all costs necessary to allow a full and final settlement of the change order without reservation of rights by either the Contractor or its Trade Contractors or suppliers.
- B. Contractor-Initiated Proposals: The Contractor may propose changes by submitting a request for a change to the Project Manager.
1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
  2. Provide a COP with the request including the same information as required under paragraph A. 2 above.
  3. Justification for any change in Contract Time. Include an updated Construction Schedule Fragnet that indicates the effect of the change, including, but not limited to, changes in activity durations, start and finish times, and activity relationships. Use available total float before requesting an extension of Contract Time
  4. Comply with requirements in Section 01600 "Product Requirements" if the proposed change requires substitution of one product or system for a product or system specified.

#### 1.6 REVIEW and APPROVALS

- A. Upon receipt of a COP, the Project Manager will review the COP with the Design staff, if appropriate, and make a decision whether to proceed with the COP, reject it, or negotiate all or certain items with the Contractor. The Contractor will be notified of Project Managers actions. Acceptance of a COP will constitute a Change Order Acceptance (COA) which will be incorporated into a subsequent Contract Modification. At least once a month, the Project Manager will bundle all outstanding COA's into a request for issuance of a Contract Modification and forward the request to the Procurement Officer through the Project Control section.
- B. The Procurement Officer will be the only authority to authorize and approve the change in work and any requested extension of the contract time due to any change in work. No order for change, at any time or place, shall be in any manner, or to any extent relieve the Contractor of his obligations under the contract.
- C. Other University personnel shall not:
1. Execute contract modifications;
  2. Act in such a manner as to cause the Contractor to believe they have authority to bind the University; or
  3. Direct or encourage the Contractor to perform work that should be subject to a contract modification.
- D. The Procurement Officer will prepare the "Modification of Contract" form and transmit it to the Contractor for his review and signature. The Contractor will return the signed "Modification of Contract" form to the Procurement Officer who will sign it and distribute it to the appropriate parties. Once signed by the

Procurement Officer, the contract is modified and the Contractor can modify the schedule of values accordingly. The Contractor will list the various COA's with a description and value for each COA in the Schedule of Values.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01250

SECTION 01290

PAYMENT PROCEDURES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.
  - 1. Coordinate the Schedule of Values and Applications for Payment with the Contractor's Construction Schedule.
- B. Related Sections include the following:
  - 1. Section 01210 "Allowances"
  - 2. Section 01230 "Alternates"
  - 3. Section 01240 "Unit Prices"
  - 4. Section 01250 "Contract Modification Procedures"
  - 5. Section 01315 "CPM Schedules and Reports"
  - 6. Section 01770 "Contract Close-out"

1.3 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.
  - 1. Unless otherwise requested, the earliest convenient time after receiving the notice of contract award, submit the Schedule of Values to the University for review. Reflect the value of the various categories of work. If more than one building is involved, the breakdown shall be by building. All exterior work involving utilities, landscaping, sidewalks, etc. should be identified as separate items. This submittal is due no later than 10 working days before the date scheduled for submittal of the initial Applications for Payment.
  - 2. The schedule of values should separate individual items into labor amounts, material amounts, equipment amounts and transportation and delivery costs as appropriate. Break down the Contract Sum by phases of work and provide at least one line item for each specification section per phase of work with additional breakdown as requested by the University.
  - 3. The Universities initial interest is to assure that the breakdown is in sufficient detail. After this requirement is satisfied, the University will

review the schedule to assure that reasonable dollar values are assigned to the various items of work and to avoid front loading of payments.

- B. Format:
1. Use a tabular format which includes the following:
    - a. CSI # - Use the specification section number.
    - b. Description – Clear & concise description of the work item.
    - c. Drawing Number – Contract drawing number which depicts the work item.
    - d. Material – The material amount scheduled.
    - e. Labor – The labor amount scheduled.
    - f. Delivery – The transportation and delivery amount scheduled.
  2. Identification: Include the following Project identification on the Schedule of Values:
    - a. Project name and location;
    - b. Name of the University;
    - c. Project QC number;
    - d. Contractor's name and address;
    - e. Date of submittal.
  3. Allowances: Show each allowance as a separate line item.
  4. List the total units of work for each line item where billing is based upon units of work accomplished.
  5. Round amounts to nearest whole dollar; the total shall equal the Contract Sum
  6. Schedule Updating: Update the Schedule of Values prior to the each Application for Payment when Contract Modifications result in a change in the Guaranteed Maximum Price.

#### 1.4 APPLICATIONS FOR PAYMENT

- A. Requests for Payment: Monthly requisitions for payment shall be submitted to the A/E and University using AIA documents G702 and G703 (or equivalent). Each Application for Payment shall be consistent with previous applications and payments as approved and paid for by the University.
- B. Application Preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor.
1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.
  2. Include only those Contract Modifications executed prior to the last day of the construction period covered by the application. Unit price work will be shown as a Contract Modification.
  3. Allowances: Show each allowance as a separate line item
  4. Clearly indicate on the Application for Payment those line items which include materials or equipment, purchased or fabricated and stored, but not yet installed.
  5. Payment for Stored Material:



- a. For items stored on-site: Where the schedule of values separates items into labor amounts and material amounts, payment will be made for materials delivered and suitably stored on site provided said material is required for installation according to the Contractor's construction schedule.
  - b. For items stored offsite: Payments for material and equipment stored off-site will be at the sole discretion of the University. Materials stored at an off site location which are eligible for inclusion on the progress payments are defined as finished goods made specifically for the project. Raw materials, work in progress at fabrication plants and commodity items readily available for purchase are not eligible for inclusion in the progress payment. If required, the Contractor will be responsible for all costs of travel and lodging for Architect, Engineers, and University representatives to off-site storage locations to examine these items and the conditions of storage.
  - c. Payment will be made under the following provisions:
    - 1) For items stored off-site, provide a bill of sale from supplier/Trade Contractors and certificates of insurance for the full value of stored materials with the University named as the insured.
    - 2) For items stored off-site show a separate line item for the value of delivering and unloading the items at the Project site.
    - 3) For items stored on or off-site, provide in a separate line item for the value of the installing these items.
6. Draft Application: Unless otherwise requested, or about the 18th of each month, submit a draft application for payment and review this application with the Campus Projects Project Manager at progress meeting or other meeting established for this review. Obtain the Project Manager's agreement concerning percentages of completion and amounts applied for.
  7. Following the review and approval of the draft application, on or about the 25th of each month, submit one (1) signed and notarized original and four (4) copies of the corrected Application for Payment to the Architect by a method ensuring receipt within 24 hours. Include backup documentation as requested by the University or A/E to substantiate entitlement to payment.
    - a. Final Distribution:
      - 1) Original and one (1) copy to Project Accounting
      - 2) One copy to the A/E
      - 3) One copy to the AEC Project Manager
      - 4) One copy to the OSCR
      - 5) One copy returned to the Contractor
  8. University's review of Applications for Payment relies on the accuracy and completeness of information furnished by Contractor.
  9. Payment will be made approximately 45 days following the University's receipt of the corrected Application for Payment from the Contractor. The University may issue payment in the form of multiple checks issued from

separate sources which may be received by the Contractor on separate dates.

10. Transmittal: Transmit Application for Payment with a transmittal form listing attachments and recording appropriate information related to the application.
11. Submit an updated schedule with each request for payment in accordance with Section 01315 ““CPM Schedules and Reports””.
12. Applications will not be approved if the job site record drawings are not up to date and posted.

C. Initial Application for Payment: The Contractor shall provide the following submittals and obtain the University’s acceptance prior to submittal of the first Application for Payment.

1. List of Trade Contactors including their license number, date and place of issuance, and their phase of work;
2. List of material suppliers and fabricators indicating the particular items, by name, that they are to supply;
3. Schedule of values;
4. Contractor's Construction Schedule (preliminary if not final).
5. Contractor’s Submittal Schedule.
6. List of Contractor's staff assignments.
7. Copies of authorizations and licenses from governing authorities for performance of the Work (if applicable);
8. Other submittals required by the Contract Documents prior to initial application for payment.

D. Final Payment Application: Actions and submittals that must precede or coincide with submittal of the final Application for Payment include but are identified in Section 01770 “Contract Closeout”

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01290

SECTION 01310

PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and supervisory requirements necessary for coordinating construction operations on the project including, but not limited to the following:
  - 1. General project coordination procedures.
  - 2. Administrative and supervisory personnel.
  - 3. Project Meetings
  - 4. Request for Interpretation (RFIs)
- B. Related Sections include the following:
  - 1. Section 01250 "Contract Modification Procedures"
  - 2. Section 01290 "Payment Procedures"
  - 3. Section 01315 "CPM Schedule and Reports"
  - 4. Section 01330 "Submittal Procedures"
  - 5. Section 01400 "Quality Control Requirements"
  - 6. Section 01700 "Execution Requirements"
  - 7. Section 01770 "Contract Close-Out "

1.3 COORDINATION

- A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations which depend on each other for proper installation, connection, and operation. Anticipate areas where the installation of mechanical and electrical work will be restricted, congested or difficult. Coordinate the work of all affected Trade Contractors.
  - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  - 2. Coordinate installation of different components with other Trade Contractors to ensure maximum accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.

- B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
  - 1. Prepare similar memoranda for the University and separate Trade Contractors if coordination of their work is required.
  
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other Trade Contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of Contractor's Construction Schedule.
  - 2. Preparation of the Schedule of Values.
  - 3. Installation and removal of temporary facilities and controls.
  - 4. Delivery and processing of submittals.
  - 5. Coordination meetings.
  - 6. Progress meetings.
  - 7. Pre-installation conferences.
  - 8. Project commissioning and closeout activities.

#### 1.4 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. Staff Names: Within 5 days of starting construction operations, submit a list of principal staff assignments, including the superintendent and other personnel in attendance at the Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office and cell telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys, in emergency situation, in the absence of individuals assigned to Project.
  - 1. Provide this list to the Campus Projects Project Manager.

#### 1.5 PROJECT MEETINGS

- A. This Section specifies administrative and procedural requirements for project meetings including but not limited to:
  - 1. Work Initiation Conference (WIC);
  - 2. Pre-Installation Conferences;
  - 3. Progress Meetings.
  - 4. Coordination Meetings.
  
- B. Work Initiation Conference (WIC)
  - 1. A Work Initiation Conference will be convened by the University no later than 15 days after execution of the Agreement and prior to commencement of construction activities. This meeting will review responsibilities and discuss preliminary information necessary for the effective initiation of work. The University will announce time and place of meeting.
  - 2. Attendees: The Project Manager, Architect and their consultants, the Contractor and its project manager, superintendent, major Trade Contractors, manufacturers, suppliers and other concerned parties. Each shall be

represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.

3. Agenda:

a. Include the following items as a minimum:

- 1) Routing of Correspondence
- 2) Prevailing Wage Rates
- 3) Preliminary Submittals/Notifications
- 4) Noise/Dust Control and Temporary Utilities
- 5) Submittal and Shop Drawing Procedures
- 6) CPM Schedules and Reports
- 7) Request for Interpretation (RFI)
- 8) Quality Control Requirements
- 9) Test Reports
- 10) Project Management and Coordination
- 11) Permits
- 12) Requests for Payment
- 13) Changes in Work
- 14) Progress Meetings
- 15) Safety and Health
- 16) Hazardous Materials
- 17) Temporary Facilities
- 18) Parking
- 19) Outages
- 20) Partnering
- 21) Project Photographs
- 22) Sexual Harassment
- 23) MBE Requirements
- 24) Project Directory
- 25) Contractor Evaluations

C. Pre-installation Conference

1. Conduct a pre-installation conference at the site for all construction activities that require coordination, where required by the Project Specifications or when deemed appropriate by the University. The University, Architect, Contractor's superintendent, all affected Trade Contractors and suppliers and manufacturers' representatives involved in or affected by the installation, and its coordination or integration with other work, shall attend the meeting. Advise the University and Architect of scheduled meeting dates, times, and locations.
2. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference. Review requirements for work including:
  - a. Contract Documents requirements;
  - b. Approved Submittals, Samples & Product Data;
  - c. Related Change Orders;
  - d. Procurement and Delivery Schedule;
  - e. Possible conflicts;
  - f. Compatibility problems;
  - g. Work schedule;

- h. Weather limitations;
  - i. Manufacturer's recommendations;
  - j. Compatibility of materials;
  - k. Acceptability of substrates;
  - l. Temporary facilities;
  - m. Space and access limitations;
  - n. Governing regulations;
  - o. Safety, Health, Noise Control, and Security;
  - p. Inspection and Testing requirements;
  - q. Required performance results;
  - r. Recording requirements;
  - s. Protection.
3. Record significant discussions and agreements and disagreements of each conference. Distribute the record of the meeting to everyone concerned, promptly, including the University and Architect.
  4. Do not proceed if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

**D. Progress Meetings**

1. Schedule progress meetings every week, unless otherwise agreed to by the Project Manager, at the Project site until Substantial Completion. Notify the Project Manager of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request if possible.
2. These meetings will be conducted by the Contractor
3. Attendees: In addition to representatives of the University, Architect and Contractor; each Trade Contractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.
4. Review of Work in Progress: The Contractor, Campus Projects Project Manager, Architect and their consultants shall conduct a joint walk through of the Work in conjunction with each progress meeting. They shall identify deficiencies and problems to be addressed by the Contractor. A report of this walkthrough, listing required actions by the Contractor, shall be included with the meeting minutes and all outstanding issues shall be reviewed at each progress meeting.
5. Agenda: Review, correct if required, and approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.
6. Contractor's Construction Schedule: The Contractor shall present a combined, two-week Look-Ahead Schedule with a two-week As-Built Schedule for the previous two weeks for review during the progress meeting. Review progress since the last meeting. Review problems which impact schedule. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revi-

- sions are required to ensure that current and subsequent activities will be completed within the Contract Time.
7. Review the present and future needs for effective progress of the Work including such items as:
    - a. Submittal schedule and status of submittals;
    - b. Status of Requests for Interpretation (RFIs);
    - c. Status of pending change orders/anticipated changes;
    - d. Sequences;
    - e. Deliveries;
    - f. Interface requirements;
    - g. Field observations, problems and decisions;
    - h. Outages required;
    - i. Hot work permits or confined space entry permits issued/required;
    - j. Off-site fabrication problems;
    - k. Access;
    - l. Site utilization;
    - m. Temporary facilities and services;
    - n. Hours of Work;
    - o. Hazards and risks;
    - p. Housekeeping;
    - q. Quality and Work standards;
    - r. Review draft request for payment (once a month),
  8. Reporting:
    - a. The Contractor shall prepare detailed minutes of each progress meeting and distribute them electronically to attendees and others as requested by the University within 24 hours of the meeting. The Contractor shall incorporate comments received and issue the official meeting minutes not later than 48 hours before the subsequent progress meeting. In case of disagreement with a comment, the University will make the final determination.
    - b. Schedule Updating: Revise the construction CPM schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule CPM schedule concurrently with the report of each meeting.
- E. Coordination Meetings
1. Conduct Project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings.
    - a. All parties involved with the coordination and planning of current Construction activities shall be represented. These include but are not limited to the Contractor, Trade Contractors, suppliers, and University's representative.

1.6 REQUEST FOR INTERPRETATION (RFI)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, prepare and submit an RFI in the form specified.
1. RFIs shall originate with the Contractor. RFIs submitted by entities other than the Contractor will be returned with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in the Contractor's work or work of Trade Contractors.
- B. Content of the RFI: Include a detailed, legible description of the item needing interpretation and the following:
1. Project Name and QC Number.
  2. Date.
  3. Name of Contractor.
  4. Name of Architect/Engineer.
  5. RFI Number, numbered sequentially.
  6. Specification Section number and title and related paragraphs, as appropriate.
  7. Drawing number and detail reference, as appropriate.
  8. Field dimensions and conditions, as appropriate.
  9. Contractor's suggested solution(s). If the Contractor's solution(s) impact the Contract Time or the Guaranteed Maximum Price, Contractor shall state in the RFI.
  10. Contractor's signature.
  11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
  12. Supplementary drawings prepared by the Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies and attachments.
- C. Architects/Engineer's Action: Architect/Engineer will review each RFI, determine the action required, and return it to the Contractor with a response. The response will include a statement as to the probable effect of the response on the Guaranteed Maximum Price or the contract time. Allow five (5) working days for Architect/Engineer's response for each RFI.
1. The following RFI will be returned without action:
    - a. Request for approvals of submittals.
    - b. Request for approvals of product substitutions.
    - c. Request for coordination information already indicated in the Contract Documents.
    - d. Requests for interpretation of Architect/Engineer's actions on submittals.
    - e. Incomplete RFIs or RFIs with numerous errors.
    - f. Architect/Engineer's action may include a request for additional information, in which case the Architect/Engineer's time for response will start again.
  2. Architect/Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for the Contractor to



submit a Change Proposal in accordance with Division 1 Section 01250  
“Contract Modification Procedures.

- a. If the Contractor believes that the RFI response warrants a change to the Contract Time or Contract Sum, he shall notify the Project Manager in writing within 5 days of receipt of the RFI response.
- D. Upon receipt of the Architect/Engineer’s action, the Contractor shall update the RFI log and immediately distribute the RFI response to affected parties. Review the response and notify the Architect/Engineer within three (3) days if Contractor disagrees with the response.
- E. RFI Log: Prepare, maintain and submit a tabular log of RFIs organized by RFI number. Submit the log prior to each Progress Meeting.
1. Project Name and QC Number
  2. Name and Address of Contractor.
  3. RFI number including RFIs that were dropped and not submitted.
  4. RFI description.
  5. Date the RFI was submitted.
  6. Date the Architect/Engineer’s response was received.
    - a. Time taken for modifications and replacements of non-conforming work.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 01310

SECTION 01315

CPM SCHEDULES AND REPORTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. Contract Time:
- B. Schedule: The document required for planning and control of the timely execution of the Project.
- C. Pre-Construction Phase Schedule: Schedule submitted by the Contractor required for planning and control of Pre-Construction Phase activities.
- D. Preliminary Construction Schedule: The schedule to be submitted by the Contractor after NTP for the Construction Phase is issued, required for planning and control of construction activities until the Detailed Construction Schedule is submitted and accepted by the University.
- E. Contract Schedule: The Contract Schedule is the document that controls Contractor's timely execution of the Work. It is initially defined by the number of Work Days listed in the Contract Documents for completion of each Milestone and for completion (in calendar days) of the Work. Upon submittal and acceptance, by the Project Manager, of the Preliminary Construction Schedule (PCS), the PCS becomes the Contract Schedule. Upon submittal and acceptance, by the Project Manager, of the Detailed Construction Schedule (DCS), the DCS becomes the Contract Schedule. Upon acceptance by Project Manager of mutually agreed change orders, which amend the DCS, the most current such accepted amended version of the DCS becomes the Contract Schedule.
- F. Updated Progress Schedule: A periodic submitted schedule reflecting current Work status of all Work Activities measured against the latest approved Contract Schedule.
- G. Recovery Schedule: A schedule produced by the Contractor once the Updated Progress Schedule forecasts the Contractor will not finish the Work within the tolerances of the Contract Time called for in the Contract. Once the Recovery Schedule is reviewed and accepted by the University, it will be considered the Contract Schedule, and shall be the base line schedule document that forms the basis of all measurements of Contract Time.

- H. As-Built Schedule: A separate schedule document maintained by the Contractor that records the actual work activities, their durations and their dependencies to all other work activities.
- I. Look Ahead Schedule: A schedule based on the Updated Progress Schedule which shows the current portion of the schedule. The current portion of the schedule is typically 3 weeks both before and beyond the date the schedule is presented, or as reasonably requested by the University's Representative.
- J. Change Order Fragnet Schedule: A schedule submitted anytime a request by the Contractor for the adjustment in the Contract Time. Change Order Fragnet Schedule shall be based on the applicable portion of the Contract Schedule, which is claimed to be impacted, necessitating an extension of the Contract Time. All modifications to the Contract Schedule Work Activities, and their associated information (including duration, logic, manpower, etc) shall be clearly identified, but the Contract Schedule shall have a starting and ending Work Activity or Milestones from the Contract Schedule which are unchanged, (same logic constraints, duration, and resources) and shall clearly identify them.
- K. Critical Path Method (CPM): A construction scheduling technique using network analysis diagrams to plan and organize construction activities in an orderly manner along the critical path.
- L. Network: A network diagram is a graphic representation showing the relationship of activities and events in the correct sequences required to complete the Project within the Contract Time.
- M. Work Activity: Any individual task of work shown on a submitted schedule which requires time and resources (manpower, equipment, materials, etc.) to be completed in a continuous operation.
- N. Critical Work Activity: Work Activity which, if delayed, will delay the scheduled completion of the Work (Tasks with no (zero) float time which determine the critical path and control project completion).
- O. Float: Time available for a given Work Activity in excess of its estimated duration calculated as the difference in days between the Latest Finish and its Earliest Finish. It represents the amount of leeway available in scheduling an activity.
  - 1. Free float: The amount of time an activity can be delayed without adversely affecting the early start of the following activity.
  - 2. Total float: The amount of time an activity can be delayed without adversely affecting overall time for Project completion.
- P. Constrained Work Activity: Any earliest start or finish; or latest start or finish date of a Work Activity or Milestone date that is set and is not calculated in the CPM forward or backward pass calculation. No Work Activities or Milestones on the Contract Schedule, or any other submitted schedule shall utilize Constrained Work Activities, unless expressly approved in writing by the University. The only exception is that the schedule start date may be set to reflect the Notice to Proceed Date.

- Q. Work Day: The days in the calendar during the period of Work performance, excluding Saturdays, Sundays and holidays submitted by the Contractor and agreed to by the Owner. This list of holidays must be submitted in writing and accompany the Preliminary Construction Schedule.
- R. Milestones: The dates indicated in the most current approved updated Contract Schedule for completion of defined portions and/or phases of the Work and the entirety of the Work. Such dates are calculated by counting the number of Work Days or calendar days specified for each Milestone. Show Milestones in the Contract Schedule as zero duration activities with "Finish-No-Later-Than" dates. Milestones listed in the Contract Documents represent only the major items of construction work or interface dates. Milestones are considered essential to the satisfactory performance of this Contract and to the coordination of all work on the Project.

### 1.3 CONTRACTOR'S REPRESENTATIVE

- A. The Contractor shall designate an authorized representative in his firm who will be responsible for assisting in the preparation of the CPM Schedule and review/report progress of the project with Owner's representative. The Contractor's representative shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling requirements of this section of the specification and such authority will not be interrupted throughout the duration of the project.

### 1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (Network Analysis Schedules)

- A. The Contractor shall prepare and maintain a detail cost and resource loaded progress schedule as described below. This schedule shall be the Contractor's working schedule and used to plan, organize and execute the work, record and report actual performance and progress, and show how the Contractor plans to complete all remaining work as of the end of each progress report period.
- B. The schedule shall be in the form of an activity oriented network diagrams (Critical Path Method).

### 1.5 QUALITY ASSURANCE

- A. Contractor's Administrative Personnel: Five years minimum experience in using and monitoring CPM schedules on comparable projects.
- B. Scheduler: Consultant specializing in CPM scheduling with five years minimum experience in scheduling construction work of a complexity comparable to this project, and having use of computer facilities capable of delivering detailed graphic and tabular printouts, as well as electronic transfers of data, within 48 hours of request.
- C. Program: Use a computer software program for network analysis that has been developed specifically to manage CPM construction schedules and is acceptable to the Project Manager. Such software must be compatible with the latest version of

Primavera Project Planner (P6) by Primavera Systems, Inc. All submissions will consist of both electronic and paper copies. Electronic copies will be in a format readable by P6 software.

## 1.6 PRELIMINARY CONSTRUCTION SCHEDULE (PCS)

- A. Preliminary Construction Schedule (PCS): Within 14 days of the date established for commencement of the work (either by Letter of Intent or Notice to Proceed, whichever is earlier), submit a Preliminary Construction Schedule (PCS) package containing the following:
1. CPM network diagram containing detail activities for the first 90 days of construction and summary activities for the period after the first 90 days until the end of the project. The work for each phase or area must be represented by at least one summary activity such that the PCS indicates the entire Work. The following requirements must be met by all cost loaded activities:
    - a. Total cost loaded into detail and summary activities in the PCS by CSI division number should equal the total Contract Sum
    - b. Durations of individual detail activities should not exceed 15 working days except where those activities represent procurement and delivery tasks.
  2. Narrative of Contractor's proposed construction methodology, including a proposed general sequencing plan.
  3. Proposed calendar (meeting the constraints of "Work Day" definition), indicating holidays, other proposed non-working days and proposed time periods for shift work by trade, if any.
  4. Key Items Procurement: For all "key" (major equipment and materials and long-lead (over 16 weeks, from order placement to delivery)) items fabricated or supplied for the Work, include in the PCS a tabular report detailing these items and indicating schedule dates for the following related activities:
    - a. Preparation of submittals, including shop drawings and samples.
    - b. Review and approval of submittals. Indicate Owner's review time of no less than 14 calendar days for any individual submittal. Adjust logic and/or duration of submittal activities as directed by Owner in event Owner determines that Contractor's proposed submittal schedule assumes an overly concentrated period of Architect or Owner review and approval.
    - c. Manufacture or fabrication,
    - d. In-plant testing,
    - e. Packaging and loading, where applicable,
    - f. Shipment and delivery,
    - g. Receipt, inventory, off-loading, warehousing,
    - h. Handling and re-handling,
    - i. Erection or installation,
    - j. Testing and inspection,
    - k. Commissioning,
    - l. Final inspection of installed equipment and materials.
  5. Tabulation of Submittals: tabulation by date of submittals required during the first 90 days of construction. List those required to maintain orderly

progress of the Work, and those required early because of long lead-time for manufacture or fabrication.

6. Distribution: Provide three copies to the Project Manager (including electronic media as referenced in Section 0.06.B above). Also distribute the PCS to Trade Contractor Managers and suppliers that need to know about the timing of these construction activities.

1.7 DETAILED CONSTRUCTION SCHEDULE (DCS)

- A. Submit a Detailed Construction Schedule (DCS), in CPM format, no later than 60 days after the date established for commencement of work.
- B. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method (CPM), under concepts and methods outlined in the above referenced books.
- C. The DCS shall illustrate order and interdependence of activities and sequence of work, restrictions of access and availability of work areas, how the start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
- D. Proceed with preparation of the DCS immediately following notification of Contract award.
- E. Illustrate complete sequence of construction by activity. Provide dates for submittals including those for Owner furnished items, if any, and return of submittals, dates for procurement and delivery of products, and dates for installation and provision for testing. Provide legend for symbols and abbreviations.
- F. The DCS shall provide sufficient detail and clarity of form and technique so that the Contractor can plan, schedule, and control his work properly and the Procurement Officer can readily monitor and follow the progress for all portions of work. The DCS shall comply with the various limits imposed by the scope of work and by contractually specified intermediate milestone dates included in the contract.
- G. The degree of detail shall be to the satisfaction of the Project Manager, but the following factors shall be addressed in the network:
  1. A phased breakdown of the entire project. Use clear and concise activity descriptions. The beginning and end of each activity shall be readily observable and verifiable during execution of the work.
  2. The type of work to be performed and the labor trades involved,
  3. All purchase, manufacture and delivery activities for all major materials and equipment,
  4. Deliveries of Owner furnished equipment,
  5. Preparation and processing of submittals,
  6. Preparation and approval of coordination drawings,
  7. Plans for all subcontract work,
  8. Access and availability of work areas,

9. Testing, submission and approval of test results,
  10. Incorporate time for pre-testing,
  11. Provide list of all required tests and sequence accordingly,
  12. Close-in inspections/correction of deficiencies,
  13. Testing/balancing of systems,
  14. Commissioning of CCMS system,
  15. Potential Weather Delays,
  16. Demonstrations and instructions,
  17. Punch list inspection/correction of deficiencies,
  18. Each project closeout activity as required by the Project Manager or his designated representative.
  19. Activity durations over 15 working days shall be kept at a minimum except in the case of non-construction activities. The sum of the costs assigned shall be equal to the Guaranteed Maximum Price. No activity costs are to be assigned to manufacture or delivery schedules.
- H. The network shall clearly indicate the intermediate milestone events, the contract completion dates, substantial completion and final acceptance dates and the predicted status of these control points as the networks are updated. The primary path(s) of criticality shall be clearly and graphically identified on the network. The status of the work in progress shall also be similarly identified and the reported percent complete indicated for the last report period.
- I. Follow the steps necessary to complete development of the network diagram in sufficient time so that the DCS can be submitted and accepted for use no later than 30 days after commencement of the Work.
- J. Conduct educational workshops to train and inform key project personnel, including Trade Contractors' personnel, in proper methods of providing data and using the DCS information.
- K. Establish procedures for monitoring and updating the CPM schedule and for reporting progress; coordinate procedures with progress meeting and payment request dates.
- L. Contractor shall submit the following tabular reports with the DCS and every schedule update throughout the duration of the project:
1. Mathematical Analysis: Tabulate each activity of the DCS, using calendar dates and identifying for each activity:
    - a. Preceding and succeeding event numbers,
    - b. Activity description,
    - c. Earliest start date,
    - d. Earliest finish date,
    - e. Actual start date,
    - f. Actual finish date,
    - g. Latest start date,
    - h. Latest finish date,
    - i. Total and free float,
    - j. Monetary value of activity, keyed to Schedule of Values,

- k. Percentage of activity completed and remaining duration of activity,
  - l. Identify each activity with applicable specification section number,
  - m. Contractor's earnings based upon activities reported percent complete.
2. Computer Outputs: Required as part of the initial schedule submission and each update thereafter. Contractor will furnish electronic files as well as printed output.
- a. Tabular report of all activities sorted by event number from lowest to highest.
  - b. Tabular report of all activities sorted by early start date, early finish date and total float. This report must be grouped by early start dates.
  - c. Tabular report of all activities sorted by total float, early start date and early finish date. This report must be grouped by total float.
  - d. Contractor's periodic payment request sorted in same order as the Schedule of Values listing referenced below.

#### 1.8 CASH FLOW PROJECTIONS

- A. Using the cost assigned to each activity of the DCS, the Contractor shall develop a cash flow analysis in graphic form depicting estimated cash draw down in aggregate, by month, over the life of the project. The cash flow projections will be updated each month to show a forecast of remaining payments and actual payments to date and submitted with the updated DCS.

#### 1.9 SCHEDULE OF VALUES

- A. Prepare schedule of values in coordination with preparation of construction schedule.
- B. Itemized Data:
  - 1. Provide itemization of Contract Sum in sufficient detail to facilitate continued evaluation of payment requests and progress reports.
  - 2. Itemize principal subcontract amounts into separate labor and material items.
  - 3. Round off figures to nearest whole dollar, but make total equal Contract Sum.
  - 4. Unit Cost Allowance: Show line item value as product of unit cost x measured quantity as estimated from best indication in Contract Documents.

#### 1.10 SUBMITTALS

- A. The DCS (logic diagrams and computations), shall be submitted to the Project Manager for acceptance within thirty (30) calendar days after notice to proceed in the following quantities:
  - 1. Detailed CPM Schedules, 30" x 42" and have a title block in the lower right hand corner. Exceptions to the size of the network sheets shall be



- subject to the approval of the Project Manager. (3 sets of prints Project Managert)
2. Tabular Printouts (3 copies to Project Manager - 8-1/2" x 11" in size)
  3. Cash Flow Projections (3 copies to Project Manager - 8-1/2" x 11" in size)
  4. Electronic Files of Schedules.
  5. Written certification that major Trade Contractors have reviewed and accepted proposed schedule.
- B. The Project Manager shall accept or reject the Contractor's submission within five (5) calendar days after receipt of all required information.
- C. If the Contractor fails to submit the Preliminary Construction Schedule (PCS), Detailed Construction Schedules (DCS), Cashflow Projections and Tabular Printouts within the time prescribed, or revisions thereof within the requested time, the Procurement Officer may withhold approval of all progress payments until such time as the Contractor submits the required information.
- D. At the request of the Contracting Officer or his authorized representative, the Contractor shall be required to participate in any meetings necessary to reach a mutual agreement and acceptance of the PCS, DCS or the Cash Flow Projections.
- E. Submit updated DCS, Tabular Printouts and Cash Flow Projection with each Application for Payment.
- F. If any of the required submissions are returned to the Contractor for corrections or revisions, they shall be submitted for acceptance within ten (10) calendar days after return mailing date. Re-submittal shall be in the same quantities as noted above. Review and response by the Project Manager shall occur within ten (10) days after each submission. Upon acceptance of the initial or updated DCS by Project Manager, Contractor shall, within 3 calendar days,
1. Post copies in the Project meeting rooms and temporary field office,
  2. Distribute copies of the accepted DCS to Trade Contractors, suppliers, Project Manager and other concerned parties,
  3. Instruct recipients to promptly report, in writing, problems anticipated by the projections shown in the schedule,
  4. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.
- G. Submit copies of each computer-produced report (listing) in triplicate and electronic files to the Campus Projects Project Manager
- H. Project Manager's acceptance of proposed DCS signifies only that the Project Manager's summary review of the DCS leads Project Manager to believe that Contractor has met the general requirements of this Section pertaining to DCS format and content. Acceptance by the Project Manager of the DCS does not relieve Contractor of any of its responsibility whatsoever for the accuracy or feasibility of Contractor's plan for execution of the Work, or to perform the Work within specified time constraints. Such acceptance does not expressly or impliedly

warrant, acknowledge or admit the reasonableness of the activities, logic, durations, manpower, cost or equipment loading of the Contractor's proposed or accepted Contract Schedule.

- I. Project Manager's acceptance in no way makes the Project Manager or its representatives insurers of success of Contractor's time performance or liable for time or cost overruns flowing from the shortcomings of Contractor-authored Contract Schedule. Project Manager disclaims and Contractor waives any Project Managers obligation or liability by reason of Project Managers acceptance of or acquiescence to Contractor's schedule submissions.
- J. Should Contractor fail to define any element of Work, activity or logic and Project Manager's review does not detect this omission or error, such omission or error, when discovered by Contractor or Project Manager, shall be corrected by Contractor before the next schedule update and shall not be cause for delay of completion of the Work within the specified time constraints. Contractor acknowledges that Project Manager is not required or otherwise obligated to discover errors or omissions in Contractor's proposed Contract Schedule. Project Manager's acceptance of DCS does not relieve Contractor of its responsibility of the Contract Schedule.

#### 1.11 REVIEW AND EVALUATION

- A. Participate in joint review and evaluation of CPM Schedules and analysis with the Project manager at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

#### 1.12 UPDATING SCHEDULES

- A. The initial updating shall take place during the first week after the acceptance of the Contractor's schedule by the Project Manager. Subsequent updates shall be submitted bi-weekly for presentation at periodic progress meetings or as designated by the Project Manager. Updates will include furnishing the Project Manager with a copy of the electronic file(s) of the updated schedule. Update within 5 days any significant changes as a result of action agreed to in the periodic progress meeting. An updated schedule shall accompany each request for payment. Schedules shall include:
  - 1. Actual start dates;
  - 2. Actual completion dates;
  - 3. Cost value of work reported in place;
  - 4. Activity percent completion;
  - 5. Revised logic (as-built and projected) and changes in activity duration and costs;
  - 6. Influence of change orders;
  - 7. Subsequent updates will be discussed at each progress meeting.

- B. The Contractor shall come to the progress meetings with the above data prepared in advance of each meeting, to provide, as of the end of the updating period, a complete and accurate report of contract procurement and construction progress and showing how the Contractor plans to continue the work of this project to meet all contract completion dates.
- C. Identify activities modified since previous submittal, major changes in Work and other identifiable changes.
- D. Indicate changes required to maintain Date of Completion.
- E. Submit sorts required to support recommended changes.
- F. Provide narrative report to describe physical progress during the report period, plans for forthcoming report period, actions to correct any negative float predictions, problem areas, anticipated delays, and impact on Schedule. Report corrective action taken or proposed.
- G. If the Contractor fails to timely submit any of the update deliverables, the Procurement Officer may withhold approval of all progress payments until such time as the Contractor submits the required update reports.
- H. Submit computer reports and network graphics, which reflect the progress of the Work with respect to both cost and time, in accordance with the requirements of the initial Contractor-proposed DCS. Submit an updated cash flow graphic showing a) approved baseline schedule early start (ES) and late start (LS) curves, b) actual curve as of update and c) forecast ES and LS curves to complete Work. d) Adjust the selection and sort sequence, format and content of reports as directed by Owner.
- I. Contractor acknowledges that updating the Contract Schedule to reflect actual progress made as of the date of update is not a modification to the Contract Schedule's Milestone requirements.

**1.13 FLOAT TIME.**

- A. Float is not for the exclusive benefit of either Contractor or Owner. Manage work according to early start dates, by commencing activities on the early start date (calculated by the latest approved Contract Schedule) or earlier if possible, unless constrained by a bona fide resource limitation. Owner may reserve and apportion float time according to the needs of the Project. Actual or projected Owner-caused delays that do not exceed available float time shall not have any effect upon Contractor's adherence to specified time constraints and shall not be a basis for any time extension.
- B. Contractor acknowledges the following:
  - 1. Activity delays shall not automatically result in adjustment of specified time constraints,
  - 2. A Change Order or other Owner action or inaction may not affect existing critical activities or cause non-critical activities to become critical,

3. A Change Order or delay may result in only absorbing a part of the available total float that may exist within an activity chain of the network, thereby not causing any effect on specified time constraints.
- C. Pursuant to the above float sharing requirements, use of float released by elimination of float suppression techniques such as preferential sequencing, special lead/lag logic restraints, unreasonably extended activity durations, or imposed dates shall be distributed by Owner to the benefit of Owner and Contractor.
- D. In the event the Contractor wishes to complete the Work earlier than the time specified therefore:
1. Continue to calculate float based on the Work completion date specified as of Contract execution, by maintaining the specified Work completion date as a "finish-no-later-than" constraint.
  2. The completion time for the Work shall not be amended by Owner's acceptance of or acquiescence to Contractor's proposed earlier completion date.
  3. Contractor shall not, under any circumstances, receive additional compensation for indirect, general, administrative or other forms of overhead costs, for the period between the time of earlier completion proposed by Contractor and the completion time for the Work specified as of NTP.

#### 1.14 CHANGE ORDERS, DELAYS, AND TIME EXTENSIONS

- A. When change orders or delays are experienced, the Contractor shall submit to the Project Manager or his authorized representative, a written Time Impact Analysis illustrating the influence of each change or delay of the current contract schedule completion dates. Each Time Impact Analysis shall include a fragnet (network analysis) demonstrating how the Contractor proposes to incorporate the change order or delay into the Detailed CPM Schedule. Additionally, the analysis shall demonstrate the time impact based on the date the change is given to the Contractor, the status of construction at that point in time, and the event time computation of all affected activities. The event times used in the analysis shall be those included in the latest update copy of the detailed progress schedule or as adjusted by mutual agreement. The Contractor will submit any supporting electronic files to the Project Manager when submitting a Time Impact Analysis.
- B. Time extensions will be granted only to the extent that the equitable time adjustment for the activities affected exceeds the total or remaining float along the path of activities at the time of actual delay or at the time notice to proceed was issued for the change. Each Time Impact Analysis shall be submitted in triplicate and within fifteen (15) calendar days after a delay occurs or notice of direction for a change is given to the Contractor. In cases where the Contractor does not submit a Time Impact Analysis for a specific change order or delay within a specified period of time, he shall be deemed to have irrevocably waived his rights to any additional time and cost. Approval or rejection of each Time Impact Analysis by the Project Manager shall be made within fifteen (15) calendar days after receipt of each Time Impact Analysis unless subsequent meetings and negotiations are necessary. Upon approval, a copy of the Time Impact Analysis signed by the

Project Manager shall be returned to the Contractor. Upon mutual agreement by both parties, fragnets illustrating the influence of change order and delays will be incorporated into the Detailed CPM Schedule during the first update after agreement is reached.

- C. In the event the Contractor does not agree with the decision of the Procurement Officer regarding the impact of a change delay, it shall be resolved in accordance with the disputes clause of the contract.
- D. **RESPONSES TO REVISIONS.** Project Manager will respond in writing to each schedule update. Project Manager's response may include questions and/or requests for revisions. Respond in writing within twenty calendar days, either agreeing with Project Manager's proposed revisions and submitting a modified update, or setting forth justification why such revisions should not be implemented. If Contractor's justification for not implementing the revision is acceptable, in Project Manager's sole judgment, such revision will be waived. If Owner does not accept the Contractor's justification, the Project Manager's-directed revisions shall be incorporated into the Contract Schedule. Contractor's failure to respond in writing within 20 calendar days shall constitute Contractor acceptance of the Project Manager's-directed revisions, and such revisions shall be incorporated by Contractor into the Contract Schedule, with final and binding Contractor waiver of any potential Contractor requests for time extension or additional compensation.

**1.15 RESPONSIBILITY FOR COMPLETION**

- A. Furnish sufficient forces, offices, materials, facilities, plant and equipment, to ensure the prosecution of the Work in accordance with the most current approved Contract Schedule update. If Project Manager advises that Contractor has fallen behind in meeting Milestones as presented in such approved update, take such steps as may be necessary to improve progress. Upon Project Manager's written advice that Contractor is behind schedule, as a result of inexcusable causes, immediately mediate such loss by increasing the hours of work, the number of shifts, overtime operations and/or the amount of construction plant and equipment without additional cost to Owner. Contractor acknowledges that such remedial action on his part is not compensable acceleration of the performance of the Work. The provisions of this paragraph shall not be construed as prohibiting work on Saturdays, Sundays, and holidays, without additional cost to the Owner, if the Contractor so elects and gives written notice to Project Manager two working days in advance of the work.

**PART 2 - PRODUCTS (Not Applicable)**

**PART 3 - EXECUTION (Not Applicable)**

**END OF SECTION 01315**

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
- B. Related Sections include the following:
  - 1. Section 01290 "Payment Procedures"
  - 2. Section 01310 "Project Management and Coordination"
  - 3. Section 01315 "CPM Schedules and Reports"
  - 4. Section 01400 "Quality Control Requirements"
  - 5. Section 01740 "Warranties and Bonds"

1.3 DEFINITIONS

- A. Preliminary Submissions: It is incumbent upon the Contractor to submit in writing, and obtain acceptance in writing for each of the following items prior to commencing work.
  - 1. The names and qualifications of the proposed full time staff at the job site (Section 01310 paragraph 1.5 A).
  - 2. A list of all trade contractors, including their license number, date and place of issuance and their phase of work (Section 01290 paragraph 1.4 C 1)

3. A list of equipment and material suppliers, indicating the particular items, by name/description, which they are to supply (Section 01290 paragraph 1.4 C 2)
  4. Schedule of Values (Section 01290 paragraph 1.3).
  5. Preliminary Submittal Schedule (Section 01330 paragraph 1.4 C 1).
  6. Preliminary Construction Schedule( Section 01315 paragraph 1.6 A).
- B. Action Submittals: Written and graphic information that requires the Project Manager's responsive action.
- C. Informational Submittals: Written information that does not require the Project Manager's approval. Submittals may be rejected for not complying with requirements.

#### 1.4 SUBMITTAL PROCEDURES

- A. General: The Contractor shall submit to the Campus Projects Project Manager for review all shop drawings, product data, samples and other submittals for all items required in the Technical Sections of the Specifications and for all items proposed for use in the Work.
- B. Coordination: Coordinate the preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity. Submit shop drawings, product data and samples far enough in advance to allow ample time for review, re-submittal if required, and fabrication without creating any delay in the Work.
    - a. Make architectural submittals a minimum of thirty (30) days prior to needed return date.
    - b. Make structural, mechanical and electrical submittals a minimum of forty-five (45) days prior to the needed return date.
  2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

- a. The A/E reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Submittals Schedule:

1. Preliminary: Within 5 days of the Notice to Proceed , prepare and submit a tabular Submittal Schedule, sorted by date, of all submittals required during the first 90 days of construction. List those required to maintain orderly progress of the Work, and those required early because of long lead time for manufacture or fabrication. Include the following information in this submittal:
  - a. Heading, including project title and location and Contractor's name;
  - b. Columnar organization with the following sub-headings
    - 1) Submittal No (Line numbers, serial order);
    - 2) Type of Submittal (Data, Shop Drawings, Reports, etc.);
    - 3) Specification Reference (Spec section number and paragraph reference);
    - 4) Description of Item Submitted (misc. metals, wood flooring, gyp board, etc.);
    - 5) Submit By (date);
    - 6) Approve By (date);
    - 7) Long lead time item (yes or no);
    - 8) Critical Path (yes or no);
    - 9) Float;
    - 10) Actual date of submittal;
    - 11) Re-submittal Date;
    - 12) Final release or approval;
    - 13) Remarks.
2. Full Submittal: Within 10 days of Notice to Proceed , prepare and submit a tabular Submittal Schedule, sorted by date, of all submittals required



during the full duration of the project. The full submittal shall utilize the same format and provide the same type of information as specified for the preliminary submittal.

3. Give Owner two weeks notice of anticipated significant revisions to accepted schedule of submittals.
  4. Identify all long lead time items and state impact on schedule.
- D. Processing Time: Allow enough time for submittal review, including time for re-submittal, as follows. Time for review shall commence on A/E's receipt of submittal and conclude on date sent from A/E's office.
1. Initial Review: Allow 14 days for initial review of each submittal
    - a. A/E's review to require 14 days.
  2. Concurrent Review: Where concurrent review of submittals by the A/E's Consultants, Project Manager, or other parties is required, allow 14 days for initial review of each submittal.
  3. If intermediate submittal is necessary, process it in same manner as initial submittal.
  4. Allow 14 days for processing each re-submittal.
  5. No extension of Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
  2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by the A/E.
  3. Include the following information on the label for processing and recording action taken:
    - a. Project name and QC Number
    - b. Date.

- c. Name and address of ContractorContractor.
  - d. Name and address of Trade Contractor.
  - e. Name and address of supplier.
  - f. Name of manufacturer.
  - g. Unique identifier, including revision number.
  - h. Number and title of appropriate Specification Section.
  - i. Drawing number and detail references, as appropriate.
  - j. Other necessary identification.
4. Submittal Numbering System: All submittals shall be assigned a submittal number clearly visible on all transmittal forms and on each copy of each submittal adjacent to the Contractors review stamp. The numbering system shall track the Specifications format. In the example: 15050-001.0 the number represents the following:
- a. First five Digits-15050, the specification section,
  - b. Digit six through eight -001, The numerical log of submittal within each specification section, the first submittal in that section,
  - c. Last Digit: Initial or re-submittal of each submittal, .0 for initial, .1 for first re-submittal, and so forth.
- F. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. The Project Manager will return submittals, without review, received from sources other than Contractor.
- 1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by the A/E on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
  - 2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.

3. Transmittal Form: Use AIA Document G810 or computer generated facsimile.
- H. Quantities:
1. Product Data:
    - a. Submit either Electronic PDF or Three (3) copies of each required submittal to the Campus Projects PM in addition to those copies required to be returned to the Contractor.
  2. Shop Drawings:
    - a. Submit either Electronic PDF or Three (3) copies of each required submittal to the Campus Projects PM in addition to those copies required to be returned to the Contractor.
    - b. Re-submittals: Same as initial submittal. Note date of previous submittal. Use same submittal number with numeric suffix to indicate first and subsequent resubmittals.
    - c. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.
  3. Samples:
    - a. Submit Three (3) copies of each required submittal to the Campus Projects PM in addition to those copies required to be returned to the Contractor.
    - b. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.
- I. Distribution: Furnish copies of final submittals to manufacturers, Trade Contractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- J. Use for Construction: Use only final submittals with mark indicating action taken by A/E in connection with construction.

## PART 2 - PRODUCTS

### 2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
  
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Standard color charts.
    - e. Manufacture's catalog cuts.
    - f. Roughing-in and setting diagrams.
    - g. Wiring diagram showing factory-installed wiring.
    - h. Printed performance curves.
    - i. Operational range diagrams.
    - j. Mill reports.
    - k. Compliance with recognized trade association standards.
    - l. Compliance with recognized testing agency standards.
    - m. Application of testing agency labels and seals.
    - n. Notation of coordination requirements.

4. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
  5. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    - f. Shop work manufacturing instructions.
    - g. Templates and patterns.
    - h. Schedules.
    - i. Design calculations.
    - j. Compliance with specified standards.
    - k. Notation of coordination requirements.
    - l. Notation of dimensions established by field measurement.
  2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 36 by 48 inches.
- D. Samples: Prepare physical units of materials or products, including the following:
1. Comply with requirements in Division 1 Section 01400 "Quality Control Requirements" for mockups.

2. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
3. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following:
  - a. Partial sections of manufactured or fabricated components;
  - b. Small cuts or containers of materials;
  - c. Complete units of repetitively used materials;
  - d. Swatches showing color, texture, and pattern; color range sets;
  - e. And components used for independent testing and inspection.
4. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match A/E's sample where so indicated. Attach label on unexposed side that includes the following:
  - a. Generic description of Sample.
  - b. Product name or name of manufacturer.
  - c. Sample source.
5. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:
  - a. Size limitations.
  - b. Compliance with recognized standards.
  - c. Availability.
  - d. Delivery time.
6. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
  - a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least

- three sets of paired units that show approximate limits of the variations.
- b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
7. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
- a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

### PART 3 - EXECUTION

#### 3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting for review.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
  - 1. Submittals received without Contractor's review stamp will be returned unreviewed.

#### 3.2 PROJECT MANAGER'S ACTION

- A. General: Project Manager will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Project Manager will review each submittal, make marks to indicate corrections or modifications required, and return it. Project Manager will

stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. "No Exceptions Taken": That part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
  2. "Make Corrections Noted": That part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance. Revise the Submittal, incorporating the corrections noted, and resubmit to the A/E until "No Exception Taken" status is given.
  3. "Revise and Resubmit": Do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity.
    - a. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat as necessary to obtain a "No Exceptions Taken" status..
    - b. Do not permit submittals marked "Revise and Resubmit" to be used at the Project site, or elsewhere where Work is in progress.
  4. "Rejected": Not in compliance with Contract Documents. Submission has been returned without review.
    - a. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat as necessary to obtain a "No Exceptions Taken" status.
    - b. Do not permit submittals marked "Rejected" to be used at the Project site, or elsewhere where Work is in progress.
- C. Informational Submittals: A/E will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. A/E will forward each submittal to appropriate party.
- D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION 01330



SECTION 01410

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section specifies Codes, Ordinances, Regulatory Requirements, covenants, and other restrictions applicable to the Work of this project.

1.3 CODES, ORDINANCES, REGULATIONS, PROTECTIVE COVENANTS, AND RESTRICTIONS

- A. Where references are made on Drawings or in the Specifications to codes, they shall be considered an integral part of the Contract Documents as minimum requirements. Nothing contained in the Contract Documents shall be so construed as to be in conflict with the law, by-law, or regulation of the municipal, state, federal, or other authorities having jurisdiction. Notify the Owner of any apparent conflicts for appropriate resolution.
- B. Perform Work in compliance with the following:
  - 1. The Building Code of the State of Maryland
    - a. International Building Code (IBC), latest edition.
    - b. International Mechanical Code (IMC), latest edition.
    - c. International Existing Building Code (IEBC), latest edition
    - d. National Standard Plumbing Code (NSPC), latest edition
    - e. NFPA 70 National Electrical Code (NEC), latest edition
    - f. NFPA 72 National Fire Alarm Code, latest edition
    - g. State of Maryland's Department of General Services, Procedures for Implementation of Energy Conservation
    - h. American National Standards Institute (ANSI): National Electrical Safety Codes - ANSI C-2 and ANSI C-37
    - i. ASHRAE Standards, Latest edition
    - j. Washington Suburban Sanitary Commission (WSSC) Plumbing and Fuel Gas Code, latest edition
    - k. State of Maryland's Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Walks (ANSI/ASME A17.1), latest edition
  - 2. Fire Protection and Life Safety.
    - a. COMAR 29.06.01.01 - Maryland State Fire Prevention Code

## On-Call General Contractor Specifications

University of Maryland College Park

June 2013

- b. National Fire Protection Association (NFPA) 1, Uniform Fire Code, latest edition
  - c. National Fire Protection Association (NFPA) 101, Life Safety Code (LSC) - latest edition.
  - d. NFPA 13 Standard for the Installation of Sprinklers, latest edition
  - e. NFPA 14 Standard for the Installation of Standpipe and Hose Systems, latest edition
  3. Regulations Governing Construction of Facilities for the Handicapped by the State of Maryland (COMAR 05.02.02).
    - a. The Americans with Disabilities Act (ADA, Federal register September 15, 2010, Part III, 28 CFR Part 36).
    - b. Americans with Disabilities Act Accessibility Guidelines (ADAAG) for Buildings and Facilities developed by the United States Architectural and Transportation Barriers Compliance Board, and adopted by the United States Department of Justice in Appendix A to 28 CFR 36.
    - c. Maryland Building Code for the Disabled
  4. Department of Natural Resources (DNR): COMAR 08.19.01 Forest Conservation
  5. Regulations of the Maryland Division of Labor, Licensing, and Regulation: COMAR 09, Subtitle 12 - Division of Labor and Industry (MOSH)
  6. Regulations of the Maryland Department of the Environment (MDE)
    - a. COMAR 26.02.07 Procedures for Abating Lead
    - b. COMAR 26.08.04 Water Pollution Permits
    - c. COMAR 26.10 Oil Pollution and Tank Management
    - d. COMAR 26.11 Air Quality
    - e. COMAR 26.13 Disposal of Controlled Hazardous Substances
    - f. COMAR 26.17.01 Erosion and Sediment Control
    - g. COMAR 26.17.02 Stormwater Management
    - h. COMAR 26.23.01 Non-Tidal Wetlands
- C. Enforcing Authorities:
1. University of Maryland, College Park (UMCP), Department of Architecture, Engineering, and Construction (AEC).
  2. UMCP, Department of Environmental Safety (DES)
  3. Maryland Department of the Environment (MDE)
  4. Maryland Department of Labor, Licensing, and Regulation (DLLR)
  5. Maryland Department of Occupational Safety and Health (MOSH)
  6. Department of Natural Resources (DNR)
  7. Washington Suburban Sanitary Commission (WSSC)

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01410

SECTION 01420

REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": The term "approved," when used to convey Architect's action on Contractor's submittals, applications, and requests, is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by Architect, requested by Architect, and similar phrases.
- D. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on Drawings or to other paragraphs or schedules in Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference.
- E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": The term "furnish" means to supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": The term "install" describes operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.
- I. "Installer": An installer is the Contractor or another entity engaged by Contractor as an employee, Trade Contractor, or Sub-subcontractor, to perform a particular

construction operation, including installation, erection, application, and similar operations.

- J. The term "experienced," when used with an entity, means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.
- K. "Project site" is the space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

### 1.3 INDUSTRY STANDARDS

- A. **Applicability of Standards:** Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. **Publication Dates:** Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
- C. **Conflicting Requirements:** If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
  - 1. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.
- D. **Copies of Standards:** Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source and make them available on request.
- E. **Abbreviations and Acronyms for Industry Organizations:** Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall

mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association, Inc. (The) <a href="http://www.aluminum.org">http://www.aluminum.org</a>	703-358-2960
AAADM	American Association of Automatic Door Manufacturers <a href="http://www.aaadm.com/">http://www.aaadm.com/</a>	(216) 241-7333
AABC	Associated Air Balance Council <a href="http://www.aabchq.com">www.aabchq.com</a>	(202) 737-0202
AAMA	American Architectural Manufacturers Association <a href="http://www.aamanet.org">www.aamanet.org</a>	(847) 303-5664
AASHTO	American Association of State Highway and Transportation Officials <a href="http://www.aashto.org">www.aashto.org</a>	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists (The) <a href="http://www.aatcc.org">www.aatcc.org</a>	(919) 549-8141
ABMA	American Bearing Manufacturers Association <a href="http://www.abma-dc.org">www.abma-dc.org</a>	(202) 367-1155
ACI	American Concrete Institute/ACI International <a href="http://www.aci-int.org">www.aci-int.org</a>	(248) 848-3700
ACPA	American Concrete Pipe Association <a href="http://www.concrete-pipe.org">www.concrete-pipe.org</a>	(972) 506-7216
ADC	Air Diffusion Council <a href="http://www.flexibleduct.org">www.flexibleduct.org</a>	847-706-6750
AEIC	Association of Edison Illuminating Companies, Inc. (The) <a href="http://www.aeic.org">www.aeic.org</a>	(205) 257-2530
AF&PA	American Forest & Paper Association <a href="http://www.afandpa.org">www.afandpa.org</a>	(800) 878-8878 (202) 463-2700
AGA	American Gas Association <a href="http://www.aga.org">www.aga.org</a>	(202) 824-7000
AHA	American Hardboard Association <a href="http://www.domensino.com/aha">www.domensino.com/aha</a>	(847) 934-8800
AHAM	Association of Home Appliance Manufacturers	(202) 872-5955

	<a href="http://www.aham.org">www.aham.org</a>	
AI	Asphalt Institute <a href="http://www.asphaltinstitute.org">www.asphaltinstitute.org</a>	(859) 288-4960
AIA	American Institute of Architects (The) <a href="http://www.aia.org">www.aia.org</a>	(202) 626-7300
AISC	American Institute of Steel Construction, Inc. <a href="http://www.aisc.org">www.aisc.org</a>	(312) 670-2400
AISI	American Iron and Steel Institute <a href="http://www.steel.org">www.steel.org</a>	(202) 452-7100
AITC	American Institute of Timber Construction <a href="http://www.aitc-glulam.org/index.asp">www.aitc-glulam.org/index.asp</a>	(303) 792-9559
ALCA	Associated Landscape Contractors of America <a href="http://www.landcarenetwork.org/cms/home.html">http://www.landcarenetwork.org/cms/home.html</a>	(800) 395-2522 (703) 736-9666
ALSC	American Lumber Standard Committee <a href="http://www.alsc.org/">http://www.alsc.org/</a>	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. <a href="http://www.amca.org">www.amca.org</a>	(847) 394-0150
ANLA	American Nursery & Landscape Association <a href="http://www.anla.org">www.anla.org</a>	(202) 789-2900
ANSI	American National Standards Institute <a href="http://www.ansi.org">www.ansi.org</a>	(202) 293-8020
AOSA	Association of Official Seed Analysts <a href="http://www.aosaseed.com">http://www.aosaseed.com</a>	(405) 780-7372
APA	APA-The Engineered Wood Association <a href="http://www.apawood.org">www.apawood.org</a>	(253) 565-6600
APA	Architectural Precast Association <a href="http://www.archprecast.org">www.archprecast.org</a>	(239) 454-6989
API	American Petroleum Institute <a href="http://www.api.org">www.api.org</a>	(202) 682-8000
ARI	Air-Conditioning & Refrigeration Institute <a href="http://www.ari.org">www.ari.org</a>	(703) 524-8800
ASC	Adhesive and Sealant Council <a href="http://www.ascouncil.org">http://www.ascouncil.org</a>	(303) 986-9700

ASCE	American Society of Civil Engineers <a href="http://www.asce.org">www.asce.org</a>	(800) 548-2723 (703) 295-6300
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers <a href="http://www.ashrae.org">www.ashrae.org</a>	(800) 527-4723 (404) 636-8400
ASME	ASME International (The American Society of Mechanical Engineers International) <a href="http://www.asme.org">www.asme.org</a>	(800) 843-2763
ASPE	American Society Of Plumbing Engineers <a href="http://www.aspe.org">www.aspe.org</a>	(703) 693-2773
ASQ	American Society For Quality <a href="http://www.asq.org">www.asq.org</a>	(800) 248-1946
ASSE	American Society of Sanitary Engineering <a href="http://www.asse-plumbing.org">www.asse-plumbing.org</a>	(440) 835-3040
ASTM	American Society for Testing and Materials <a href="http://www.astm.org">www.astm.org</a>	(610) 832-9500
AWCI	AWCI International (Association of the Wall and Ceiling Industries International) <a href="http://www.awci.org">www.awci.org</a>	(703) 538-1600
AWI	Architectural Woodwork Institute <a href="http://www.awinet.org">www.awinet.org</a>	(571) 323-3636
AWPA	American Wood-Preservers' Association <a href="http://www.awpa.com/">http://www.awpa.com/</a>	(205) 733-4077
AWS	American Welding Society <a href="http://www.aws.org">www.aws.org</a>	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association <a href="http://www.awwa.org">www.awwa.org</a>	(800) 926-7337 (303) 794-7711
BCA	Building Commissioning Association <a href="http://www.bcxa.org">http://www.bcxa.org</a>	(877) 666-2292
BHMA	Builders Hardware Manufacturers Association <a href="http://www.buildershardware.com">www.buildershardware.com</a>	(212) 297-2122
BIA	Brick Industry Association (The)	(703) 620-0010

	<a href="http://www.bia.org">www.bia.org</a>	
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International) <a href="http://www.bifma.com">www.bifma.com</a>	(616) 285-3963
CCC	Carpet Cushion Council <a href="http://www.carpetcushion.org">www.carpetcushion.org</a>	(610) 527-3880
CCFSS	Center for Cold-Formed Steel Structures <a href="http://ccfss.mst.edu">http://ccfss.mst.edu</a>	(573) 341-4471
CDA	Copper Development Association Inc. <a href="http://www.copper.org">www.copper.org</a>	(212) 251-7200
CEA	Canadian Electricity Association (The) <a href="http://www.canelect.ca">www.canelect.ca</a>	(613) 230-9263
CFFA	Chemical Fabrics & Film Association, Inc. <a href="http://www.chemicalfabricsandfilm.com">http://www.chemicalfabricsandfilm.com</a>	(216) 241-7333
CGA	Compressed Gas Association <a href="http://www.cganet.com">www.cganet.com</a>	(703) 788-2700
CGSB	Canadian General Standards Board <a href="http://www.pwgsc.gc.ca/cgsb">www.pwgsc.gc.ca/cgsb</a>	(819) 956-0425
CIMA	Cellulose Insulation Manufacturers Association <a href="http://www.cellulose.org">www.cellulose.org</a>	(888) 881-2462 (937) 222-2462
CISCA	Ceilings & Interior Systems Construction Association <a href="http://www.cisca.org">www.cisca.org</a>	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute <a href="http://www.cispi.org">www.cispi.org</a>	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute <a href="http://www.chainlinkinfo.com">www.chainlinkinfo.com</a>	(301) 596-2583
CPA	Composite Panel Association (Formerly: National Particleboard Association) <a href="http://www.pbmdf.com">www.pbmdf.com</a>	(703) 724-1128
CPPA	Corrugated Polyethylene Pipe Association Division of Plastics Pipe Institute <a href="http://www.cppa-info.org">www.cppa-info.org</a>	(469) 499-1044
CRI	Carpet and Rug Institute (The)	(706) 278-3176



	<a href="http://www.carpet-rug.com">www.carpet-rug.com</a>	
CRSI	Concrete Reinforcing Steel Institute <a href="http://www.crsi.org">www.crsi.org</a>	(847) 517-1200
CSA	CSA International (Formerly: IAS - International Approval Services) Division of Canadian Standards Association <a href="http://www.csa-international.org/Default.asp?language=english">http://www.csa-international.org/Default.asp?language=english</a>	(216) 524-4990
CSI	Construction Specifications Institute (The) <a href="http://www.csinet.org">www.csinet.org</a>	(800) 689-2900
CSSB	Cedar Shake & Shingle Bureau <a href="http://www.cedarbureau.org">www.cedarbureau.org</a>	(604) 820-7700
CTI	Cooling Technology Institute <a href="http://www.cti.org">www.cti.org</a>	(281) 583-4087
DHI	Door and Hardware Institute <a href="http://www.dhi.org">www.dhi.org</a>	(703) 222-2010
EIA/TIA	Electronic Industries Alliance/Telecommunications Industry Association <a href="http://www.eia.org">www.eia.org</a>	(703) 907-7500
EIMA	EIFS Industry Members Association <a href="http://www.eima.com/">http://www.eima.com/</a>	(800) 294-3462 (770) 968-7945
EJMA	Expansion Joint Manufacturers Association, Inc. <a href="http://www.ejma.org">www.ejma.org</a>	(914) 332-0040
FCI	Fluid Controls Institute <a href="http://www.fluidcontrolsintitute.org">www.fluidcontrolsintitute.org</a>	(216) 241-7333
FMG	FM Global (Formerly: FM - Factory Mutual System) <a href="http://www.fmglobal.com">www.fmglobal.com</a>	(401) 275-3000
GA	Gypsum Association <a href="http://www.gypsum.org">www.gypsum.org</a>	(202) 289-5440
GANA	Glass Association of North America (Formerly: FGMA - Flat Glass Marketing Association) <a href="http://www.glasswebsite.com">http://www.glasswebsite.com</a>	(785) 271-0208
GAMA	Gas Appliance Manufacturers Association <a href="http://www.gamanet.org">www.gamanet.org</a>	(908) 464-8200

GRI	Geosynthetic Research Institute <a href="http://www.geosynthetic-institute.org">http://www.geosynthetic-institute.org</a>	(610) 522-8440
HI	Hydraulic Institute <a href="http://www.pumps.org/">http://www.pumps.org/</a>	(973) 267-9700
HPVA	Hardwood Plywood & Veneer Association <a href="http://www.hpva.org">www.hpva.org</a>	(703) 435-2900
HPW	H. P. White Laboratory, Inc. <a href="http://www.hpwhite.com/">http://www.hpwhite.com/</a>	(410) 838-6550
ICEA	Insulated Cable Engineers Association, Inc. <a href="http://www.icea.net">www.icea.net</a>	(508) 394-4424
ICRI	International Concrete Repair Institute <a href="http://www.icri.org">www.icri.org</a>	(847) 827-0830
IEC	International Electrotechnical Commission <a href="http://www.iec.ch">www.iec.ch</a>	41 22 919 02 11
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) <a href="http://www.ieee.org">www.ieee.org</a>	(212) 419-7900
IESNA	Illuminating Engineering Society of North America (The) <a href="http://www.iesna.org">www.iesna.org</a>	(212) 248-5000
IGCC	Insulating Glass Certification Council <a href="http://www.igcc.org">www.igcc.org</a>	(315) 646-2234
IGMA	Insulating Glass Manufacturers Alliance <a href="http://www.igmaonline.org">www.igmaonline.org</a>	
IIA (I3A)	International Imaging Industry Association (I3A) <a href="http://www.i3a.org">http://www.i3a.org</a>	(914)285-4933
ILI	Indiana Limestone Institute of America, Inc. <a href="http://www.iliai.com">www.iliai.com</a>	(812) 275-4426
IRI	HSB Industrial Risk Insurers <a href="http://www.industrialrisk.com">www.industrialrisk.com</a>	(800) 520-7300 (860) 520-7300
ITS	Intertek Testing Services <a href="http://www.intertek.com">http://www.intertek.com</a>	(800) 345-3851 (607) 753-6711
KCMA	Kitchen Cabinet Manufacturers Association <a href="http://www.kcma.org">www.kcma.org</a>	(703) 264-1690

## On-Call General Contractor Specifications

University of Maryland College Park

June 2013

LGSI	Light Gage Structural Institute <a href="http://www.loseke.com">www.loseke.com</a>	(972) 370-0969
LPI	Lightning Protection Institute <a href="http://www.lightning.org">www.lightning.org</a>	(800) 488-6864
MBMA	Metal Building Manufacturers Association <a href="http://www.mbma.com">www.mbma.com</a>	(216) 241-7333
MFMA	Maple Flooring Manufacturers Association <a href="http://www.maplefloor.org">www.maplefloor.org</a>	(888) 480-9138
MFMA	Metal Framing Manufacturers Association <a href="http://www.metalframingmfg.org/">http://www.metalframingmfg.org/</a>	(312) 644-6610
MHIA	Material Handling Industry of America <a href="http://www.mhia.org">www.mhia.org</a>	(704) 676-1190
MIA	Marble Institute of America <a href="http://www.marble-institute.com">www.marble-institute.com</a>	(440) 250-92222
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry, Inc. <a href="http://www.mss-hq.com">www.mss-hq.com</a>	(703) 281-6613
NAAMM	National Association of Architectural Metal Manufacturers <a href="http://www.naamm.org">www.naamm.org</a>	(630) 942-6591
NACE	NACE International (National Association of Corrosion Engineers International) <a href="http://www.nace.org">www.nace.org</a>	(281) 228-6200
NAIMA	North American Insulation Manufacturers Association (The) <a href="http://www.naima.org">www.naima.org</a>	(703) 684-0084
NAMI	National Accreditation and Management Institute, Inc. <a href="http://www.namicertification.com/">http://www.namicertification.com/</a>	(757) 594-8658
NBGQA	National Building Granite Quarries Association, Inc. <a href="http://www.nbgqa.com">www.nbgqa.com</a>	(800) 557-2848
NCMA	National Concrete Masonry Association <a href="http://www.ncma.org">www.ncma.org</a>	(703) 713-1900
NCPI	National Clay Pipe Institute <a href="http://www.ncpi.org">www.ncpi.org</a>	(262) 248-9094
NCTA	National Cable Television Association	(202) 222-2300

	<a href="http://www.ncta.com">www.ncta.com</a>	
NEBB	National Environmental Balancing Bureau <a href="http://www.nebb.org">www.nebb.org</a>	(301) 977-3698
NECA	National Electrical Contractors Association <a href="http://www.necanet.org">www.necanet.org</a>	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers' Association <a href="http://www.nelma.org">www.nelma.org</a>	(207) 829-6901
NEMA	National Electrical Manufacturers Association <a href="http://www.nema.org">www.nema.org</a>	(703) 841-3200
NETA	InterNational Electrical Testing Association <a href="http://www.netaworld.org">www.netaworld.org</a>	(269)448-6382
NFPA	National Fire Protection Association <a href="http://www.nfpa.org">www.nfpa.org</a>	(617) 770-3000
NFRC	National Fenestration Rating Council <a href="http://www.nfrc.org">www.nfrc.org</a>	(301) 589-1776
NGA	National Glass Association <a href="http://www.glass.org">www.glass.org</a>	(866) 342-5642
NHLA	National Hardwood Lumber Association <a href="http://www.natlhardwood.org">www.natlhardwood.org</a>	(901) 377-1818
NLGA	National Lumber Grades Authority <a href="http://www.nlga.org">www.nlga.org</a>	(604) 524-2393
NOFMA	National Oak Flooring Manufacturers Association <a href="http://www.nofma.org">www.nofma.org</a>	(901) 526-5016
NRCA	National Roofing Contractors Association <a href="http://www.nrca.net">www.nrca.net</a>	(847) 299-9070
NRMCA	National Ready Mixed Concrete Association <a href="http://www.nrmca.org">www.nrmca.org</a>	(301) 587-1400
NSF	NSF International (National Sanitation Foundation International) <a href="http://www.nsf.org">www.nsf.org</a>	(734) 769-8010
NSSGA	National Stone, Sand and Gravel Association <a href="http://www.nssga.org/">http://www.nssga.org/</a>	(703) 525-8788
NTMA	National Terrazzo & Mosaic Association (The)	(800) 323-9736

## On-Call General Contractor Specifications

University of Maryland College Park

June 2013

	<a href="http://www.ntma.com">www.ntma.com</a>	(540) 751-0930
PCI	Precast/Prestressed Concrete Institute <a href="http://www.pci.org">www.pci.org</a>	(312) 786-0300
PDCA	Painting and Decorating Contractors of America <a href="http://www.pdca.com">www.pdca.com</a>	(800) 332-7322
PDI	Plumbing & Drainage Institute <a href="http://www.pdionline.org">www.pdionline.org</a>	(800) 589-8956 (978) 557-0720
PGI	PVC Geomembrane Institute/Technology Program University of Illinois-Urbana Champaign <a href="http://pgi-tp.ce.uiuc.edu">http://pgi-tp.ce.uiuc.edu</a>	(217) 333-3929
RCSC	Research Council on Structural Connections c/o AISC <a href="http://www.boltcouncil.org">www.boltcouncil.org</a>	
RFCI	Resilient Floor Covering Institute <a href="http://www.rfci.com">www.rfci.com</a>	301-340-8580
RIS	Redwood Inspection Service <a href="http://redwoodinspection.com">http://redwoodinspection.com</a>	(925) 935-1499
RMA	Rubber Manufacturers Association <a href="http://www.rma.org">www.rma.org</a>	(202) 682-4800
SAE	SAE International <a href="http://www.sae.org">www.sae.org</a>	(724) 776-4841
SDI	Steel Deck Institute <a href="http://www.sdi.org">www.sdi.org</a>	(847) 458-4647
SDI	Steel Door Institute <a href="http://www.steeldoor.org">www.steeldoor.org</a>	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association <a href="http://www.sefalabs.com">http://www.sefalabs.com</a>	(516) 294-5424
SGCC	Safety Glazing Certification Council <a href="http://www.sgcc.org">www.sgcc.org</a>	(315) 646-2234
SJI	Steel Joist Institute <a href="http://www.steeljoist.org">www.steeljoist.org</a>	(843) 626-1995
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association <a href="http://www.smacna.org">www.smacna.org</a>	(703) 803-2980

SPI	The Society of the Plastics Industry, Inc. <a href="http://www.plasticsindustry.org">www.plasticsindustry.org</a>	(202) 974-5200
SPIB	Southern Pine Inspection Bureau (The) <a href="http://www.spib.org">www.spib.org</a>	(850) 434-2611
SPRI	SPRI (Single Ply Roofing Institute) <a href="http://www.spri.org">www.spri.org</a>	(781) 647-7026
SSINA	Specialty Steel Industry of North America <a href="http://www.ssina.com">www.ssina.com</a>	(202) 342-8630
SSMA	Steel Stud Manufacturers Association (Formerly: ML/SFA - Metal Lath/Steel Framing Association) <a href="http://www.ssma.com">www.ssma.com</a>	(630) 942-6592
SSPC	SSPC: The Society for Protective Coatings <a href="http://www.sspc.org">www.sspc.org</a>	(412) 281-2331
STI	Steel Tank Institute <a href="http://www.steeltank.com">www.steeltank.com</a>	(847) 438-8265
SWI	Steel Window Institute <a href="http://www.steelwindows.com">www.steelwindows.com</a>	(216) 241-7333
SWRI	Sealant, Waterproofing & Restoration Institute <a href="http://www.swrionline.org">www.swrionline.org</a>	(816) 472-7974
TCNA	Tile Council of North America, Inc. <a href="http://www.tileusa.com">www.tileusa.com</a>	(864) 646-8453
TPI	Truss Plate Institute <a href="http://www.tpinst.org">http://www.tpinst.org</a>	(703) 683-1010
TPI	Turfgrass Producers International <a href="http://www.turfgrassod.org">www.turfgrassod.org</a>	(800) 405-8873 (847) 649-5555
UFAC	Upholstered Furniture Action Council <a href="http://www.ufac.org">www.ufac.org</a>	(336) 885-5065
UL	Underwriters Laboratories Inc. <a href="http://www.ul.com">www.ul.com</a>	(847) 272-8800
UNI	UNI Bell PVC Pipe Association <a href="http://www.uni-bell.org/">http://www.uni-bell.org/</a>	(972) 243-3902
USG	United States Gypsum Company	(800) 874-4968

	A Subsidiary of USG Corporation <a href="http://www.usg.com">www.usg.com</a>	
USGBG	U.S. Green Building Council <a href="https://www.usgbc.org">https://www.usgbc.org</a>	(800) 795-1447 (202) 742-3792
USITT	United States Institute for Theatre Technology, Inc. <a href="http://www.usitt.org">http://www.usitt.org</a>	(800) 938-7488 (315) 463-6463
USP	U.S. Pharmacopeia <a href="http://www.usp.org">www.usp.org</a>	(800) 227-8772 (301) 881-0666
WASTEC	Waste Equipment Technology Association <a href="http://www.wastec.org">www.wastec.org</a>	(202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau <a href="http://www.wclib.org">www.wclib.org</a>	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association (Formerly: AWCMA - American Window Covering Manufacturers Association) <a href="http://www.wcmanet.org/">http://www.wcmanet.org/</a>	(212) 297-2122
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) <a href="http://www.wdma.com">www.wdma.com</a>	(847) 299-5200
WI	Woodwork Institute <a href="http://www.wicnet.org">www.wicnet.org</a>	(916) 372-9943
WMMPA	Wood Moulding & Millwork Producers Association <a href="http://www.wmmpa.com">www.wmmpa.com</a>	(800) 550-7889 (530) 661-9591
WWPA	Western Wood Products Association <a href="http://www.wwpa.org">www.wwpa.org</a>	(503) 224-3930

F. Abbreviations and Acronyms for Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

IAPMO	International Association of Plumbing and Mechanical Officials (The) <a href="http://www.iapmo.org">www.iapmo.org</a>	(909) 472-4100
ICC	International Code Council A membership organization formed by the former	888-422 7233

BOCA- Building Officials and Code Administrators  
ICBO - International Conference of Building Officials  
SBCCI - Southern Building Code Congress International, Inc.  
CABO - Council of American Building Officials  
<http://www.iccsafe.org>

- G. Abbreviations and Acronyms for Governmental Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADA	American With Disabilities Act <a href="http://www.ada.gov">www.ada.gov</a>	(800)514-0301
COMAR	Code of Maryland Regulations <a href="http://www.dsd.state.md.us/comar/comar.htm">http://www.dsd.state.md.us/comar/comar.htm</a>	(410) 974-2486 Ext. 3872
DES	MD Department of Environmental Safety <a href="http://www.des.umd.edu">http://www.des.umd.edu</a>	(301) 405-3960
DGS	MD Department of General Services <a href="http://www.dgs.maryland.gov">http://www.dgs.maryland.gov</a>	(800) 449-4347
DOE	U.S. Department of Energy <a href="http://www.doe.gov">www.doe.gov</a>	(202) 586-4403
EPA	Environmental Protection Agency (EPA): <a href="http://www.epa.gov">http://www.epa.gov</a>	(215) 814-5000
FEMA	Federal Emergency Management Administration <a href="http://www.fema.gov">www.fema.gov</a>	(800) 621-3362
MDE	MD Department of the Environment <a href="http://www.mde.state.md.us">http://www.mde.state.md.us</a>	(410) 537-3000
DLLR	Department of Labor, Licensing and Regulation <a href="http://www.dllr.state.md.us">http://www.dllr.state.md.us</a>	(410) 230-6001
DNR	MD Department of Natural Resources <a href="http://www.dnr.state.md.us/mailroom.asp">http://www.dnr.state.md.us/mailroom.asp</a>	(410) 260-8367
DOT	MD Department of Transportation <a href="http://www.e-mdot.com">http://www.e-mdot.com</a>	(410) 865-1228
MD	Maryland Secretary of State, Division of State Documents	(410) 974-2486



**On-Call General Contractor Specifications**

University of Maryland College Park

June 2013

SSDSD

<http://www.dsd.state.md.us>

NIST National Institute of Standards and Technology

(301) 975-6478

<http://www.nist.gov>

OSHA Occupational Safety and Health Administration

(800) 321-6742

[www.osha.gov](http://www.osha.gov)

WSSC Washington Suburban Sanitary Commission

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PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 01420

SECTION 01600

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's selection and handling of products for use in the Project.

1.3 DEFINITIONS

- A. Products: Items purchased for incorporation into the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
  - 2. Materials: Products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
  - 3. Equipment: A product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.
- B. Substitutions: Request for changes in products, materials, equipment, and Methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following are not considered substitutions:
  - 1. Substitutions requested by Bidders during the bidding period, and accepted prior to submission of bids, are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
  - 2. Revisions to Contract Documents requested by the Owner or Architect.
  - 3. Specified options of products and construction methods included in Contract Documents.
  - 4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model

number or other designation to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufactures

#### 1.4 SPECIFIED METHODS AND PRODUCT OPTIONS

- A. General Product Requirements:
1. Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
  2. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
  3. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Acceptable Manufacturers: Products are specified by naming one or more manufacturers. The terms “equal” or “or equal” or “approved equal” are implied in reference to all named manufacturers, unless otherwise stated in the individual sections of the specifications. Only products fully equal will be considered by the Architect and his judgment will be final. The use of the term “equal” in these specifications does not represent or warrant that there exists an equal to any item specified. A submitted “approved equal” product will not be approved if said product installation causes any adjustment to the base bid design. If product is installed and a cost increase incurred for the other building trades, those costs will be passed onto the Contractor
- C. Acceptable Manufacturer (Design Standard): Products are specified by naming one manufacturer as the “Design Standard” for the Project. Other manufacturers may be named as “Acceptable Manufacturers.” Under this method, note the following:
1. Firms listed as “Acceptable Manufactures” are considered acceptable as manufacturers only, due to their reputation and experience
  2. Products furnished by an “Acceptable Manufacturer” shall meet or exceed the “Design Standard.” The standard products of “Acceptable Manufacturers” are not automatically approved as a result of being named. Products may require adaptation to meet the characteristics of the “design standard.”
  3. Proposals shall be based on the “Design Standard.”
- D. Product Selection Procedures:
1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions or options will be permitted.
  2. Semi-proprietary Specification Requirements:
    - a. Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.

- b. Where products or manufacturers are specified by name, accompanied by the term "or equal," or "or approved equal" comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
3. Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
5. Performance Specification Requirements:
  - a. Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
  - b. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
6. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified. Products are specified by reference standard only. Any product meeting that standard may be used. Contractor assumes responsibility for compatibility of products selected.
7. Visual Matching:
  - a. Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
  - b. Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.
8. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern and texture from the product line selected.

## 1.5 SUBMITTALS

- A. "Substitution" or "Equal" Request Submittal: Where allowed by the Contract specifications, the Contractor's substitution requests will be considered if received

within 14 days after commencement of the Work. Requests received more than 14 days after commencement of the Work will not be considered. Substitution requests must be approved by Project Manager prior to making submittals.

1. Submit three (3) copies of each request for substitution Project Manager for Consideration using request form at the end of this section.
2. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
  - a. Reason for substitute request.
  - b. Product Data, including Drawings and description of products, fabrication and installation procedures.
  - c. Samples, where applicable or requested.
  - d. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
  - e. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors that will become necessary to accommodate the proposed substitution.
  - f. Availability of maintenance service, and source of replacement materials.
  - g. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
  - h. Cost information, including a proposal of the net change, if any in the Contract Sum.
  - i. Certification by the Contractor that the substitute proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.
3. For both substitutions and equals, the Contractor is required to include a complete submission of the originally specified item, in order to allow the reviewer to conduct a side-by-side comparison of all product features and information.
4. Action: Within ten business days of receipt of the request for substitution, the Project Manager will request additional information or documentation if necessary for evaluation of the request. Within ten business days of receipt of the request, or five business days of receipt of the additional information or documentation, which ever is later, the Project Manager will notify the Contractor of acceptance, rejection of the proposed substitution or need for additional time to evaluate the change.

- B. Conditions:
1. Where allowed by the Contract Documents, the Contractor's substitution request will be received and considered by the Campus Projects Project Manager when following conditions are satisfied; as determined by the Project Manager. Otherwise requests will be returned without action except to record noncompliance with these requirements.
    - a. Extensive revisions to Contract Documents are not required.
    - b. Proposed changes are in keeping with the general intent of Contract Documents.
    - c. The request is timely, fully documented and properly submitted.
    - d. The Contractor shall bear the cost of the Architect's services, if required to revise the Contract Documents to accommodate the substitution.
  2. Special Circumstances: The Contractor's substitution request will also be received and considered by the Project Manager if one or more of the following circumstances occur. The above conditions shall apply to these substitution requests.
    - a. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the specified product or method cannot be provided as a result of failure of the Contractor to pursue the Work promptly or coordinate activities properly.
    - b. The specified product or method of construction cannot receive necessary approval by a governing authority, and the request substitution can be approved.
    - c. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
    - d. The University or Project Manager request, in writing, that a substitute product be submitted.
    - e. Specified product cannot be properly coordinated with other products in Work.
    - f. Specified product cannot meet performance requirements.
    - g. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Under these circumstances, additional responsibilities for the Owner may include additional compensation to the Architect for the redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.
  3. Substitution proposals will not be considered if proposed for one of following reasons:
    - a. Contractor or Trade Contractor has neglected to place and order for materials and labor early enough to conform to construction schedule. Such failure or neglect is not grounds for extension of Contract Time under this Contract; nor will arbitrary substitutions be considered solely to expedite completion.

- b. Substitution is indicated on Shop Drawing, Product Data or Sample submittals without separate formal request.
  - c. Substitutions are requested directly by Trade Contractor or supplier, without formal request from Contractor.
4. Limitations on substitution
- a. Prior to Contract award date, no request for substitutions will be considered except in case of product unavailability due to conditions beyond control of Contractor. Unless accepted, in writing, prior to the date for submission of bids, all bids must be based on specified products only.
  - b. After date of Contract award, requests for substitution will be considered up to 15 days from date of award. Contractor is solely responsible for allowing sufficient time for substitutions to be considered without adversely affecting the contract completion date. No claims for delay or acceleration will be considered as a result of substitution request except as stated under “exception” in paragraph d below.
  - c. Only two requests for substitution will be considered for each product with not more than one from any one manufacturer.
  - d. Exception: If specified product becomes unavailable due to conditions beyond control of Contractor, additional substitution requests for the product will be considered.
  - e. Proposed substitutions will be considered and Contractor will be notified of acceptance or rejection in writing. Substitution will be judged on space availability, quality, serviceability, aesthetics, finish, workmanship, economy of operation and general suitability.
  - f. Project Manager and design staff will be judge of equality or superiority for proposed substitutions. Do not purchase or install proposed substitute products without written acceptance of Architect. Allow minimum of 10 business days for review of substitution proposals.
  - g. Owner will receive credit for cost differential between specified item and proposed substitution.
    - 1) compensate the Owner for the Architect’s and Consultant’s service in evaluating the proposed substitution as follows:
      - a) The If applicable, the Architect will invoice the Owner at the rate of 3.5 times Direct Personnel Expense for any required evaluation services, and the Contractor shall credit to the Owner’s account toward the Contract Sum the total amount of all such invoices that may receive from the Owner.
5. Contractors Representation;
- a. Contractor will coordinate installation of the accepted substitution making such changes in the surrounding construction as may be required to receive the accepted substitution, and for the Work to be complete in all respects.
  - b. Contractor will pay all costs, including those of other trades and other contracts, associated with the substitution.

- c. Contractor certifies that the cost data presented is complete and includes all related costs including costs under separate contracts.
- d. Contractor waives claims for additional costs related to the substitution, which may later become apparent.
- e. Contractor agrees to hold harmless, the Architect, due to the deficiencies in performance of the substitution, added construction or administrative costs related to the substitution and effects to or changes required to the work of other trades necessitated by the substitution.
- f. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

## 1.6 QUALITY ASSURANCE

- A. Source Limitations:
  - 1. To the fullest extent possible, provide products of the same kind, from a single source.
  - 2. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities, to the fullest extent possible
- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view in occupied spaces or on the exterior.
- D. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface that is not conspicuous.
- E. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
  - 1. Name of product and manufacturer.
  - 2. Model and serial number.
  - 3. Capacity.



4. Speed.
5. Ratings.

1.7 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
- B. Delivery and Handling:
  1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
  3. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing. Protect sensitive equipment and finishes from impact, abrasion, and other damage.
  4. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected, and that quantities are correct.
- C. Storage:
  1. Store loose, granular material on clean solid surfaces. Prevent mixing with foreign materials.
  2. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
  3. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
  4. Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions. Inspect regularly to verify proper storage.
  5. Provide equipment and personnel to handle products by methods to prevent oiling and damage. Lift heavy products at designated lifting points only.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
  2. Verify space limitations, clearances, accessibility and other project conditions which may affect installation.
- B. Manufacturer's Instructions:
1. When Contract Documents require installation of products conforming to manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in installation, including two copies to Project Manager.
  2. Maintain one set of instructions at job site during installation and until completion.
  3. Comply with instructions in full detail, including each step in sequence.
  4. If job conditions or specified requirements conflict with manufacturer's instructions, advise the Project Manager in writing before proceeding.
- C. Workmanship: Comply with industry standards of region where Project is located except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- D. Anchorage: Secure products with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.
- E. Allow for expansion and contraction
- F. Re-check measurements and dimensions prior to starting each installation.
- G. Installation and fabrication tolerances are not cumulative. At the interface of multiple products, the strictest installation tolerance specified for any of the abutting products shall govern for all.
- H. Install each component during weather conditions and project sequence that will insure the best possible results.
- I. Isolate each product from incompatible materials as required to prevent deterioration.
- J. Mounting Heights:
1. Where mounting heights are not indicated, mount individual units of Work at industry-recognized standard mounting heights for applications indicated.
  2. Refer questionable mounting height choices to Architect before proceeding.
- K. Equipment Preparation:
1. Lubricate moving parts.
  2. Test and start up motors and machinery.
  3. Replace defective or damaged equipment.

3.2 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: When required by Contract Documents, have manufacturer provide qualified representative to observe field conditions of surfaces and installation, quality of workmanship; to start-up equipment and to test, adjust and balance equipment as applicable.
- B. Contractor's Quality Control: Maintain quality control over supervision, Trade Contractors, suppliers, manufacturers, products, services, workmanship, and site conditions, to produce Work in accordance with requirements of Contract Documents.

END OF SECTION 01600

Attachment: Request for Substitution

**On-Call General Contractor Specifications**

University of Maryland College Park

June 2013

**REQUEST FOR SUBSTITUTION OR "EQUAL"**

(Circle whether substitution or "equal" request)

(Use separate form for each submission)

1. Date: \_\_\_\_\_ Request No: \_\_\_\_\_

2. Project Name: \_\_\_\_\_

3. Specification Number and Article: \_\_\_\_\_

4. Description of specified product or system: \_\_\_\_\_

5. Trade name, model number and name of proposed product or system: \_\_\_\_\_

6. What effect does this request have on applicable code requirements? \_\_\_\_\_

7. Differences between proposed product or system and specified item?  
(Use attachment for additional space, if required.) \_\_\_\_\_

8. Manufacturer's warranty on proposed and specified items is:  
Same  Different   
(Explain on attachment.) \_\_\_\_\_

9. Demonstrate the benefit to the University to accept this request: \_\_\_\_\_

10. Monetary considerations:  
Specified Product: \$ \_\_\_\_\_  
Proposed Product: \$ \_\_\_\_\_

11. Will the Undersigned pay for changes to the building design,  
including engineering and detailing codes, caused by the request? Yes  
 No

12. Enclosed data consists of:

**On-Call General Contractor Specifications**

University of Maryland College Park

June 2013

Catalog  Drawings  Samples  Tests  Reports

13. List availability of maintenance service and replacement materials.

14. State effects of request on construction schedule and changes required in other work or product:

15. Any license fees or royalties: Yes  No

UNDERSIGNED certifies:

- Proposed request has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed product as for specified product.
- Same maintenance service and source of replacement parts as applicable is available.
- Proposed product will not affect or delay Progress Schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted request which may subsequently become apparent are to be waived by the Contractor.
- Proposed product does not affect dimensions or functional clearances.
- Payment will be made for changes to building design, including architectural or engineering design, detailing, and construction costs caused by proposed product.
- Coordination, installation, and changes to the Work as necessary for accepted product will be complete in all respects.

Submitted by:

For use by Architect:

Signature

Accepted:  Accepted As Noted:

Firm

Not Accepted:  Received Late:

Address

Date

Date

Remarks:

Telephone

**END OF FORM: REQUEST FOR SUBSTITUTION or "EQUAL"**

SECTION 01620

PRODUCT AND MATERIAL SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY

- A. General requirements for the use of products and materials with hazardous constituents.

1.3 SUBMITTALS

- A. Hazard Communication Program: Submit a written hazard communication program as required in OSHA standard 29 CFR 1910.1200 (e) "Written Hazard Communication Program."
- B. Material Safety Data Sheets: Submit Material Safety Data Sheets (MSDS) for products and materials with hazardous constituents to be used in construction activities.
  - 1. Products for which this information is required may include, but are not limited to, solvents, floor treatments, spray paints, paints and other finishes, adhesives, absorbent materials, lacquers, waxes, strippers, concrete curing agents, gas cylinders, welding rods, alloy metals, pesticides, herbicides, and roofing products.
  - 2. Submit material safety data sheets at least two weeks prior to commencement of applicable project activity. No product shall be used for which a material safety data sheet has not been submitted.
  - 3. If additional or substitute materials are to be used at any time during the Project, submit additional material safety data sheets. Submit at least one week prior to actual use of these materials.
  - 4. Maintain MSDS on-site in a binder appropriately titled.
- C. Chemical Information Lists:
  - 1. Submit a list of products and materials with hazardous constituents to be used in construction activities. Separate lists may be submitted by each trade. Prepare chemical information list using an inventory of products and materials with hazardous constituents and their respective material safety data sheets. Arrange list in alphabetical order according to common name. Include chemical name, and identify locations where the products and materials with hazardous constituents are intended to be used.

2. Submit complete chemical information list of products and materials with hazardous constituents and associated material safety data sheets at least two weeks after Notice to Proceed.
  3. Submit updated list prior to additional products being brought on to the Project site, but not less than once every six weeks.
- D. Entry into Existing Permit Required Confined Space (PRCS):
1. Review Owner's list of existing "Permit Required Confined Spaces," maintained by the Owner in accordance with 29 CFR 1910.146 General Industry Standard, and submit a written plan for entry into existing PRCS 21 days after Notice to Proceed.
  2. Submit to the Project Manager a permit application for entry into existing PRCSs one week prior to entry.
- E. Entry into Permit Required Confined Space (PRCS) Resulting from the Project:
1. Submit to the Owner a written plan for entry into new PRCSs 21 days after Notice to Proceed.
  2. Submit to the Owner a permit application for entry into each PRCS one week prior to entry.
  3. Submit record drawings for PRCSs resulting from the Project.

#### 1.4 QUALITY ASSURANCE

- A. Reference Standards: Comply with federal, state and local regulations pertaining to hazard communication. These regulations include but are not limited to:
1. 29 CFR 1910.1200, Occupational Safety and Health Administration Safety and Health Standards, Hazard Communication.
  2. Title 29 CFR Part 1926 - OSHA Standards for the Construction Industry
    - a. Subpart D - Occupational Health and Environmental Controls.
      - 1) 1926.55 - Gases, Vapors, Fumes, Dusts and Mists.
      - 2) 1926.56 – Ventilation
      - 3) 1926.59 - Hazard Communication
    - b. Subpart E - Personal Protective and Life Saving Equipment
  3. Maryland Access to Information About Hazardous and Toxic Substances Act, Article 89, Sections 32A - 320. This regulation applies to any employer who uses or stores any hazardous chemical(s) in the State of Maryland.
  4. COMAR 09.12.35 Maryland Occupational Safety and Health Standard for Confined Spaces.
  5. IBC Chapter 33 Safeguards During Construction.

#### 1.5 STORAGE AND HANDLING

- A. Comply with manufacturers' recommendations for handling, storage, use, and disposal of products and materials as applicable to the work.

**PART 2 - PRODUCTS**

**2.1 PRODUCTS AND MATERIALS WITH HAZARDOUS CONSTITUENTS**

- A. The Owner reserves the right to require substitution of less hazardous materials serving the same purpose, if acceptable substitutes are available.

**2.2 MATERIALS AND EQUIPMENT**

- A. Special facilities, devices, equipment, clothing, and similar items shall comply with applicable regulations and materials' manufacturers' recommendations.

**PART 3 - EXECUTION**

**3.1 VENTILATION**

- A. Provide adequate ventilation as required to ensure that the potential for exposure to products and materials with hazardous constituents does not occur to any person.
- B. Provide and maintain ventilation in functional, efficient working order for duration of the Project.
- C. Prevent fumes, vapors and dust related to construction activities from infiltrating other parts of the building or adjacent buildings which may be occupied.
- D. **IAQ Building Purge:** Upon completion of work involving wet pollutant emitters (e.g., paints, mastics, glues), purge work areas of airborne contaminants by supplying adequate outside air and local exhaust of contaminants to the building exterior.

**3.2 PROTECTION**

- A. **Temporary Enclosures:**
  - 1. Where dust or other particulates are generated, completely isolate work area from remainder of building by construction of adequate enclosures
  - 2. Obtain Project Manager's review of enclosures prior to commencement of the part of Project to which the enclosures apply. Dust generating activities include, but are not limited to, jack hammering, chiseling concrete or masonry, removal of walls, and other demolition activities.
- B. **Noise:** Comply with applicable regulations related to hearing conservation programs and nuisance ordinances.
- C. **Protective Equipment and Clothing:**



1. Dependent upon the product or materials with hazardous constituents in use, proper respiratory protection and other appropriate personal protective equipment and/or clothing shall be required.
2. Consult material safety data sheets (MSDS) to determine manufacturers' requirements for safe use and handling.
3. Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable (ANSI compliant) facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

END OF SECTION 01620

SECTION 01700

EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. General installation of products.
  - 2. Coordination of Owner-installed products.
  - 3. Progress cleaning.
  - 4. Starting and adjusting.
  - 5. Protection of installed construction.
  - 6. Correction of the Work.
- B. Related Sections include the following:
  - 1. Section 01330 "Submittal Procedures".
  - 2. Section 01731 "Cutting and Patching".
  - 3. Section 01770 "Contract Close-Out".

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
  - 1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site-work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
  2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
    - a. Description of the Work.
    - b. List of detrimental conditions, including substrates.
    - c. List of unacceptable installation tolerances.
    - d. Recommended corrections.
  2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to the University that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify the University not less than fourteen days in advance of proposed utility interruptions.
  2. Do not proceed with utility interruptions without the University's written permission.
- C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

- E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a Request for Interpretation to Project Manager. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

### 3.3 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
- G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.4 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction forces.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Project Manager if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

### 3.5 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
  1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
  3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  1. Remove liquid spills promptly.
  2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
  1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

- H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.6 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section 01400 "Quality Control Requirements."

### 3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

### 3.8 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section 01731 "Cutting and Patching."
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.

- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01700

SECTION 01710

FINAL CLEANING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Description of Work: Work of this Section includes cleaning prior to inspection for final completion of Work.
- B. Requirements for Final Cleaning specified in this Section are in addition to provisions of GENERAL CONDITIONS, and to specific cleaning requirements specified in various technical Specification Sections.

PART 2 PRODUCTS

2.1 CLEANING MATERIALS

- A. Use materials which will not create hazards to health or property, and which will not damage surfaces.
- B. Use materials and methods which comply with requirements of local authorities having jurisdiction over Work and are recommended by manufacturer or fabricator of material being cleaned.

PART 3 EXECUTION

3.1 CLEANING

- A. Interior Cleaning:
  - 1. Remove temporary protection, tags, labels, and markings from materials, fixtures, accessories, and equipment.
  - 2. Clean transparent and glossy materials to polished condition; remove foreign substances.
  - 3. Polish reflective surfaces to clear shine.
  - 4. Clean switch and outlet plates, finish hardware, handrails, and metal trim of smudges, paint, and soiling.
  - 5. Clean aluminum, stainless steel, bronze and similar metals according to instructions of metal manufacturer.
  - 6. Vacuum clean carpeted and similar soft surfaces.



7. Clean resilient floors thoroughly with well-rinsed mop containing only enough moisture to remove surface dirt and dust; then buff dry by machine, bringing surfaces to sheen.
  8. Clean tile in accordance with grout and tile manufacturers' recommendations.
  9. Broom clean and vacuum concrete floors.
  10. Clean under and behind convectors and other equipment.
  11. Clean inside cabinets and other concealed areas.
  12. Repaint surfaces and items that cannot be cleaned.
- B. Cleaning Glass:
1. Wash and polish both sides of glass.
  2. Remove temporary labels.
  3. Employ window-cleaning firm or personnel experienced in window cleaning work.
- C. Cleaning Mechanical and Electrical Equipment:
1. Clean surfaces of equipment; remove excess lubrication.
  2. Clean plumbing fixtures to sanitary condition. Clean permanent filters of ventilating equipment and replace disposable filters when units have been operated during construction; in addition, clean ducts, blowers, and coils when units have been operated without filters during construction.
  3. Light fixtures and lamps:
    - a. Wipe light fixtures with anodized aluminum louvers or reflectors free of dust, grease, and fingerprints, using non-abrasive cloth and suitable cleaner, recommended by fixture manufacturer.
    - b. Replace burnt-out bulbs with new specified bulbs.
    - c. Replace construction bulbs with new specified bulbs.

END OF SECTION 01710

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes: Administrative and procedural requirements for Project Record Documents.
- B. Project Record Documents required include:
  - 1. Marked-up copies of Contract Drawings.
  - 2. Marked-up copies of Shop Drawings.
  - 3. Addenda and Change Orders.
  - 4. Field records for variable and concealed conditions.
  - 5. Record information on Work that is recorded only schematically.
- C. Related Sections include the following:
  - 1. Specific record copy requirements that expand requirements of this Section are included in the individual Sections of Divisions-2 through -16.
  - 2. Section 01770 "Contract Closeout".
  - 3. Section 01330 "Submittal Procedures".
- D. Maintenance of Documents and Samples: Store record documents and Samples in the field office apart from Contract Documents used for construction. Do not permit Project Record Documents to be used for construction purposes. Maintain record documents in good order, and in a clean, dry, legible condition. Make documents and Samples available at all times for inspection by the the University. These will be reviewed monthly as a pre-requisite for issuance of a Certificate of payment.

1.3 AS-BUILT DRAWINGS

- A. During the construction period, the Contractor will maintain, on site, a set of blue- or black-line white-prints of Contract Drawings clearly identified as "AS-BUILT DRAWINGS" for Record Document purposes.
  - 1. Mark these drawings regularly as the Project proceeds to indicate the actual installation of materials and systems wherever the installation varies appreciably from the Work originally shown on the Contract Drawings.. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:

- a. Dimensional changes to the Drawings.
  - b. Revisions to details shown on the Drawings.
  - c. Depths of foundations below the first floor.
  - d. Locations and depths of underground utilities.
  - e. Revisions to routing of piping and conduits.
  - f. Revisions to electrical circuitry.
  - g. Actual equipment locations.
  - h. Duct size and routing.
  - i. Locations of concealed internal utilities.
  - j. Changes made by Change Order.
  - k. Details not on original Contract Drawings.
2. Mark completely and accurately record prints of Contract Drawings
  3. Maintain record sets where they can be inspected regularly by the Architect, and include a report on the status of the documents at each progress meeting.
  4. Mark record sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of the Work at the same location.
  5. Mark important additional information which was either shown schematically or omitted from original Drawings.
  6. Note construction change directive numbers, alternate numbers, Change Order numbers and similar identification.
  7. Responsibility for Markup: Where feasible, the individual or entity who obtained record data, whether the individual or entity is the installer, Trade Contractor, or similar entity, is required to prepare the mark-up on as-built Drawings.
    - a. Accurately record information in an understandable Drawing technique.
    - b. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.
  8. At time of Substantial Completion, submit the "AS-BUILT DRAWINGS" to Architect for the preparation of the Owner's "Record Drawing" set. Organize into sets, bind and label sets for Architect's use.
    - a.

#### 1.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the Campus Projects Project Manager for the Owner's records. Categories of requirements resulting in miscellaneous records include, but are not limited to the following:
  1. Invert elevations of drainage piping.
  2. Ambient and substrate condition tests.
  3. Inspections and certifications by governing authorities.
  4. Final inspection and correction procedures.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 RECORDING

- A. Post changes and modifications to the Documents as they occur. Do not wait until the end of the Project. The Project Manager will periodically review record documents to assure compliance with this requirement.

END OF SECTION 01720

SECTION 01731

CUTTING AND PATCHING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for cutting, fitting, and patching work, including attendant excavation and backfill, required to complete the Work or to:
  1. Make its several parts fit together properly.
  2. Uncover portions of the Work to provide for installations of ill-timed work.
  3. Remove and replace defective work.
  4. Remove and replace work not conforming to requirements of Contract Documents.
  5. Remove samples of installed work as specified for testing.
  6. Provide routine penetrations of non-structural surfaces for installation of piping, ductwork, and conduit.

1.3 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to: Divisions 1, 15 and 16.
- B. Request and obtain a “Hot Works Permit” from the University prior to the start of work.

1.4 QUALITY ASSURANCE

- A. Permission to patch any items of work does not imply a waiver of the University's right to require complete removal and replacement in said areas and of said items if, in University's opinion, patching does not satisfactorily restore quality and appearance of work.
- B. Requirements for Structural Work: Do not cut-and-patch structural work in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio.
- C. Operational and Safety Limitations: Do not cut-and-patch operational elements and safety-related components in a manner resulting in a reduction of capacities to

perform in the manner intended or resulting in decreased operational life, increased maintenance, or decreased safety.

- D. Visual Requirements: Do not cut-and-patch work that is exposed on exterior or in occupied spaces of building, in a manner resulting in reduction of visual qualities or resulting in substantial evidence of cut-and-patch work, both as judged solely by the University. Remove and replace work judged by the University to be visually unsatisfactory.

## 1.5 SUBMITTALS

- A. Submit a written request to Project Manager well in advance of executing any cutting or alteration which affects:
1. Building operations, building systems (elec, mech, fire, safety, telecom, water, sewer, etc), access or egress to or from building, roads or parking areas.
  2. Work of Owner or separate contractor.
  3. Structural value or integrity of any element of the building.
  4. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
  5. Efficiency, operational life, maintenance, or safety of building systems, equipment, or operational elements.
  6. Visual qualities of sight-exposed elements.
  7. Existing utilities
- B. Request shall include:
1. Identification of the Project.
  2. Description of affected work.
  3. The necessity for cutting, alteration, or excavation.
  4. Effect on items listed in subparagraph A above
  5. Description of proposed work:
    - a. Description of why cutting-and-patching cannot (reasonably) be avoided.
    - b. Scope of cutting, patching, alteration, or excavation.
    - c. How it will be performed.
    - d. How structural elements (if any) will be reinforced.
    - e. Trades who will execute the work.
    - f. Products proposed to be used.
    - g. Extent of refinishing to be done.
    - h. Anticipated dates of the work, and anticipated results in terms of variations from the work as originally completed (structural, operational, visual, and other qualities of significance).
  6. Alternatives to cutting and patching.
  7. Cost proposal, when applicable.
  8. Written permission of any separate contractor whose work will be affected.
- C. Should conditions of Work or the schedule indicate a change of products from original installation, Construction Manager shall submit request for substitution as specified in Section 01600, "Product Requirements".

- D. Submit written notice to Owner and Architect designating date and time the work will be performed.

## PART 2 – PRODUCTS

### 2.1 MATERIALS

- A. Except as otherwise indicated or authorized by the Project Manager, provide materials for cutting-and-patching which will result in equal-or-better work than the work being cut-and-patched, in terms of performance characteristics and including visual effect where applicable. Comply with the requirements, and use materials identical with the original materials where feasible and where recognized that satisfactory results can be produced thereby.
- B. Comply with specifications and standards for each specific product involved.

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. Inspect existing conditions of Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of Products, or performance of work.
- C. Report unsatisfactory, unsafe or questionable conditions to Project Manager in writing; do not proceed with work until Owner and Architect have provided further instructions.

### 3.2 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of the building or Work.
- B. Provide devices and methods to protect other portions of building or Project from damage.
- C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching work, and maintain excavations free from water.

### 3.3 PERFORMANCE

- A. Execute cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
  - 1. In general, where mechanical cutting is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete work.

2. .
- B. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.
- C. Restore work, which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
- D. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- E. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.
- F. Restore exposed finishes of patched areas; and, where necessary extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.
  1. Where patch occurs in a smooth painted surface, extend final paint coat over the entire unbroken surface containing the patch.
- G. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
  1. For continuous surfaces, refinish to nearest intersection.
  2. For an assembly, refinish entire unit.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed. Thoroughly clean piping and conduit and similar features before painting or other coating or finishing is applied.

END OF SECTION 01731



SECTION 01740

WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers' standard warranties on products and special warranties.
  - 1. Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.
  - 2. General closeout requirements are included in Section 01770 "Contract Closeout."
  - 3. Specific requirements for warranties for the Work and products and installation that are specified to be warranted are included in the individual Sections of Divisions -2 through - 16
  - 4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and Trade Contractors required countersigning special warranties with the Contractor.

1.3 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, right and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
- E. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
  - 1. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

## 1.5 SUBMITTALS

- A. Form of Submittal: Prior to Final Acceptance compile two copies of each required warranty and bond properly executed by the Contractor, or by the Trade Contractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  - 1. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.
  - 2. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.
  - 3. Identify each binder on the front and the spine with the typed or printed title WARRANTIES AND BONDS, the Project title or name, and the name of the Construction Manager.
  - 4. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

1.6 GUARANTEES

The Contractor guarantees for the two (2) year period (unless another period is specified), commencing on the date fixed by the parties:

1. That the work contains no faulty or imperfect material or equipment or any imperfect, careless, or unskilled workmanship.
2. That all mechanical and electrical equipment, machines, devices, etc., shall be adequate for the use of which they are intended, and shall operate with ordinary care, and attention in a satisfactory and efficient manner.
3. The he/she will re-execute, correct, repair, or remove and replace with proper work, without cost to the University, and work found not be as guaranteed by this Section. The contractor shall also make good all damages caused to other work or materials in the process of complying with this Section.
4. That the entire work shall be water-tight and leak-proof in every particular.

PART 2

PART 3 PRODUCTS (Not Used).

PART 4 EXECUTION (Not Used).

END OF SECTION 01740

SECTION 01770

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY

- A. Description: Work of this Section addresses procedures to follow when the University wishes to occupy or use part of the work before it is completed (Beneficial Occupancy), when the Contractor requests to be relieved of certain responsibilities because the work is mostly completed (Substantial Completion) or when the University determines that the work is fully completed and in accordance with the Contract Documents (Final Completion and Acceptance).
- B. Related Sections include the following:
  - 1. Section 01290 "Payment Procedures"
  - 2. Section 01700 "Execution Requirements"
  - 3. Section 01710 "Final Cleaning"
  - 4. Section 01720 "Project Record Documents"
  - 5. "

1.3 COMPLETION INSPECTIONS

- A. Punch-Out Inspection: Near the completion of the Work or any increment thereof, the Contractor shall conduct an inspection of the work and develop a "Punch list" of items which do not conform to the approved drawings and specifications. Include in the punch list any remaining items on the Rework Items List or on the non-compliance list which were not corrected prior to the Punch-Out Inspection. Minor items (punch list) shall include only patching, repair or replacement, and clean-up. Examples of acceptable punch list items include replacement of light switches, touch-up painting, repair of scratches on walls and floors, replacement of locks which do not function properly, replacement of filters or light bulbs, and other similar items. The punch list shall include the estimated date by which the deficiencies will be corrected. A copy of the Punch List shall be provided to the Project Manager. The Contractor shall make follow-on inspections to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Campus Projects Project Manager that the facility is ready for the "Substantial completion Inspection".
- B. Substantial Completion Inspection: The Campus Projects Project Manager and design staff will perform this inspection to verify that the facility is complete and ready to be occupied. A University "Substantial Completion Punch List" may be developed as a result of this inspection. The Contractor shall ensure that all items

on this list are corrected prior to notifying the University that a “Final” inspection can be scheduled. Any items noted on the “Substantial Completion” inspection shall be corrected within thirty (30) days of Substantial Completion.

- C. Final Acceptance Inspection: The Contractor shall notify the University at least 14 calendar days prior to the date a final acceptance inspection can be held. The notice shall state that all items previously identified on the Substantial Completion punch list will be corrected and acceptable, along with any other unfinished contract work, by the date of the final acceptance inspection. The Contractor shall be represented by the Project Superintendent, and others deemed necessary. Attendees for the University will include the Campus Projects Project Manager, Architectural and engineering design staff, consultants, and personnel representing the Client. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Procurement Officer to bill the Contractor for the University’s additional inspection cost. Cost for additional inspection by the University and its consultants shall be deducted from any monies due and payable to the Contractor.
- D. Post Occupancy Inspections (Contractor’s Guarantee Period): Thirty (30) days prior to the specified end of the first and second year Guarantee periods, the University will schedule inspections of the Project with representatives of the Contractor, including key Trade Contractors, the Campus Projects Project Manager and design staff and the University to assemble a list of items which require correction under the specified guarantees. The Guarantee shall be automatically extended until such time as the deficiencies are all corrected if such deficiencies occurred under original guarantee. Any defect not identified at these times shall not be exempt from the provisions of the guarantees or warranties, and shall be corrected by the Contractor when they are identified.

#### 1.4 BENEFICIAL OCCUPANCY

- A. Beneficial Occupancy is the term used to describe the procedure when the University occupies or makes use of any part of the work prior to Substantial Completion or Final Completion. The University shall issue a certificate of Beneficial Occupancy describing the portions of the work to be occupied, the date of commencement of Beneficial Occupancy, the systems or equipment which will be utilized, and a list of items to be completed or corrected in the portion of work to be occupied. The certificate of Beneficial Occupancy shall identify responsibilities for utilities, security, housekeeping and maintenance upon its issuance.
- B. The equipment list will include the ID Tag, Location, Manufacturer, Model Number and Serial Number. For such systems or equipment listed only, the warranty period shall commence on the date established for Beneficial Occupancy.
- C. A certificate of Beneficial Occupancy shall not be issued until after a Certificate of Occupancy is issued by the Department of Environmental Safety, Fire Marshal’s Office – Code Services for the portion of the work to be occupied prior to completion.

1.5 SUBSTANTIAL COMPLETION

- A. Substantial Completion means that stage in the progress of the work, as determined by the University, when the work is complete and in accordance with the contract documents except only for the completion of minor items which do not impair the University's ability to occupy and fully utilize the facility for its intended purpose.
- B. When the Contractor considers the Work to be substantially complete, the Contractor shall submit written certification that:
  - 1. The Contract Documents have been reviewed;
  - 2. The Work has been inspected for compliance with the Contract Documents;
  - 3. Equipment and systems have been tested in the University's presence;
  - 4. Items on the Contractor's "Punch Out Inspection" list have been fully completed or corrected;
  - 5. Work has been completed in compliance with Contract Documents and is ready for "Substantial Completion" inspection.
- C. The University and the design staff will promptly conduct the "Substantial Completion" Inspection after receipt of Contractor's certification. Should the Project Manager and design staff find that work is not substantially complete, the Campus Projects Project Manager will promptly notify the Contractor in writing, listing observed significant deficiencies which impact operation of building systems, are considered significant deficiencies and must be corrected before the Work can be considered substantially complete. The Contractor shall remedy deficiencies and send a second written notice that the Work is ready for the Substantial Completion Inspection. Within two weeks of this notification, the Project Manager and design staff will re-inspect.
- D. When the Project Manager and design staff find the work to be substantially complete, a Certificate of Substantial Completion will be prepared. A Certificate of Substantial Completion shall not be issued until after all work is in place in complete compliance with the contract documents, all required agency approvals have been received, including a Certificate of Occupancy issued by the Department of Environmental Safety, Fire Marshal's Office – Code Services for the work, and all systems and equipment are fully functioning. The Certificate of Substantial Completion establishes the date when the warranty period commences and documents the list of minor punch list items to be completed or corrected. The University and the Contractor agree that items to be finished after issuance of the Certificate of Substantial Completion can be accomplished while the University fully occupies and utilizes the facility for its intended purpose. The certificate of Substantial Completion shall identify responsibilities for utilities, security, housekeeping and maintenance upon its issuance.
- E. The Contractor will notify the Project Manager that the work is substantially complete only after complying with the following in addition to all other contract requirements.
  - 1. Completion of all testing, balancing, demonstration, and commissioning of the following systems, and receipt of acceptance and/or approval for operation by governing authorities, Owner and design staff
    - a. HVAC
    - b. CCMS

- c. Plumbing
- d. Electrical
- e. Fire protection (including fire separations, sprinklers, smoke controls, detectors and alarms)
- f. Elevators
- g. Security system
- h. Telecommunications
- 2. Submission of all approved balance reports, all required certificates of inspection, operation and maintenance manuals, and all specified warranty documentation and warranty contact list.
- 3. Completion of Instruction and demonstration for Owner Personnel:
  - a. In operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times.
  - b. For equipment requiring seasonal operation, provide additional instructions during the appropriate season.
  - c. Use Maintenance Manual as basis of instruction. Review contents of manual with personnel in detail to explain operation and maintenance.
  - d. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at equipment location.
  - e. Provide Owner's maintenance personnel with combined classroom and field training and instruction.
- 4. Delivery of Extra Stock and Parts:
  - a. Deliver to Owner extra stock of materials, spare parts, and loose accessories required by Contract Documents.
  - b. Include special tools for items such as thermostats and adjustable dampers and give instructions for use.
  - c. Provide protective wrapping or packaging labeled with full identification of item.
  - d. Store at site in locations designated by Owner.

**1.6 FINAL COMPLETION AND ACCEPTANCE**

- A. The University performs a final inspection upon receipt of written notice from the Contractor that the work is ready for "Final Acceptance Inspection". In order to achieve Final Acceptance of the Work, the Contractor shall complete the following:
  - 1. Contractor shall submit Closeout Submittals to the Owner as listed at paragraph 1.7 below.
  - 2. No later than the date established in the Certificate of Substantial Completion, the Contractor shall submit written confirmation that:
    - a. Work has been completed in accordance with Contract Documents, and deficiencies listed with the Certificate of Substantial Completion have been corrected.
    - b. Work is complete and ready for "Final Acceptance Inspection".
- B. Within two weeks of this written confirmation, the Project Manager and design staff will inspect the Work.

- C. Should the Project Manager and design staff inspection find that work incomplete, the Campus Projects Project Manager will promptly notify Contractor in writing listing observed deficiencies.

## 1.7 CLOSEOUT PROCESS AND SUBMITTALS

- A. At Substantial Completion:
1. Pay Application with retainage reduction;
  2. Consent of Surety Company (if required) to reduction in retainage (AIA G707A);
  3. State Fire Marshall acceptance;
  4. Electrical certification from independent electrical agency (UMCP GC 8.01 E.2.b.);
  5. Certificates from state agencies indicating that Boiler or Pressure Vessels have been acceptably inspected and/or tested;
  6. "As-Built" submitted and accepted in accordance with Section 01720 "Project Record Documents";
  7. List of training and demonstrations and attendance records of participants in accordance with Section 01735 "Demonstration and Training";
  8. Warranty and contact lists submitted and accepted in accordance with Section 01740 "Warranties and Bonds";
  9. Operation and Maintenance Manuals submitted and accepted in accordance with Section 01782 "Operations and Maintenance Data";
  10. Final Balancing and Testing report submitted and accepted by the University;
  11. Final Commissioning Report submitted and accepted by the University;
  12. Spare parts, attic stock and special tools turned over to the University;
  13. Equipment cabinet and laboratory equipment keys tagged and labeled;
- B. Prior to Final Acceptance: When the University and the Architect has determined that the Work is acceptable under the Contract Documents and the Contract Fully performed, the Contractor shall prepare and submit the final acceptance documentation as follows:
1. Final Application for Payment for 100% of the GMP (AIA G 702);
  2. Consent of Surety Company to Final Payment (AIA G707);
  3. Contractor's Affidavit of Payment of Debts and Claims (AIA G706);
  4. Contractor's Release of Liens (AIA G706A);
  5. Lien waivers from Trade Contractors, subcontractors, and major material suppliers who have furnished materials or labor for the Trade Contractors or subcontractors. Lien waivers shall be for the full amount of the contract involved;
  6. Certification that all change orders are executed and all other items of cost or potential cost to complete the project have been submitted;
  7. Confirmation that all Punch Lists are complete and no monies are to be deducted due to incomplete work;



PART 2 PRODUCTS (Not Applicable.)

PART 3 EXECUTION (Not Applicable.)

END OF SECTION 01770