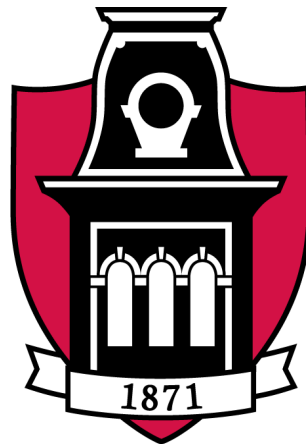


PROGRAM SPECIFICATIONS FOR
JOB ORDER CONTRACTING



UNIVERSITY OF
ARKANSAS

FISCAL YEAR 2018

University of Arkansas
Facilities Management
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PART I

UA PROPOSAL REQUIREMENTS

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INVITATION TO SUBMIT PROPOSALS

UNIVERSITY OF ARKANSAS, FAYETTEVILLE CAMPUS JOB ORDER CONTRACTING FOR CONSTRUCTION SERVICES

1. General Information: The University of Arkansas (UA) is accepting competitive sealed “Best Value Proposals” for Job Order Contracting (JOC), pursuant to Arkansas Code Ann. §19-4-1416 (a)(1) in accordance with the terms, conditions and requirements set forth in this Solicitation For Proposals for Best Value Contract, which considers factors in addition to price. This Solicitation provides sufficient information for interested parties to prepare and submit proposals for consideration by the University of Arkansas.
2. Location for Submittal of Proposal: Proposals shall be submitted to Room 321, UA Administration Building, 1125 W. Maple Street, Fayetteville, AR not later than 2:00 PM local time, Thursday, February 27, 2018.
3. There will be a **voluntary pre-proposal meeting at 2:00 PM local time, Tuesday February 13, 2018** at Facilities Management, 521 S. Razorback Road, Fayetteville, Arkansas, Rm. A103 (Main Conference Room). At this meeting, contractors will have an opportunity to ask questions regarding this Contract.
4. Supervision: The Owner, unless designated to another entity, supervises the review of Proposals and awarding of all construction contracts, approves contracts, change orders, requests for payment and ensures that on-site inspections are accomplished.
5. Location of Documents:

The full Invitation to Propose is available for download at:
http://planning.uark.edu/capital_budgeting/RFQ_projects.html.

If you are unable to access the website, you may request a copy via email from Georgeta Galbraith (contact information below).

6. Contact: Any questions or concerns regarding this Solicitation shall be directed to:

Georgeta Galbraith
University of Arkansas
Facilities Management
521 S. Razorback Road
Fayetteville, AR 72701
ggalbra@uark.edu
Phone: 479-575-6191
Fax: 479-575-7268

The UA specifically requests that Contractors restrict all contact and questions regarding this contract to the above-named individual.

7. Obtaining Contract Documents: Obtaining contract documents through any source other than the contact listed above, or his representative(s) is not advisable due to the risks of receiving incomplete or inaccurate information, and the proposer runs the risk of basing his proposal on such information. The documents obtained through the Facilities Management department or its representative(s) are considered the official version and take precedence if any discrepancies occur.

8. Inquiries and Interpretations of the Job Order Contracting (JOC) Program: Responses to inquiries which directly affect an interpretation or change to this solicitation will be issued in writing by addendum and mailed or otherwise conveyed to all parties recorded by the UA as having received a copy of the solicitation. All such addenda issued by the UA prior to the time that proposals are received shall be considered part of the solicitation, and the Contractor shall be required to acknowledge receipt of such in his proposal. Only those inquiries the UA replies to which are made by formal written addenda shall be binding. Oral and other interpretations or clarification will be without legal effect.
9. Proposal Evaluation and Contract Award Process: An award to one or more Contractors for the services specified herein will be made based upon evaluation of the competitive sealed proposals. Proposals will be opened publicly to identify the names of the Contractors, and their coefficients, but will be afforded security sufficient to preclude disclosure of other content of the proposal, or other information, prior to award. Therefore, each preparer is encouraged to prepare his Proposal with due care and attention to detail in presenting the Proposer's capabilities and Work Plan as requested per the Proposal Evaluation listed herein. After opening, an award may be made on the basis of the proposals initially submitted, without discussion, clarification or modification. The UA reserves the right to award a Contract for all or any portion of the requirements proposed by reason of this request, award multiple Contracts, or to reject any and all proposals if deemed to be in the best interest of the University. Notification of proposal evaluation and awards (s) shall usually be made within 30 calendar days of receipt date.
10. Proposers are hereby notified that any proposer who desires to enter into Contract for this work must comply with disclosure requirements pursuant to Governor Executive Order 98-04. Submission to the Owner of completed Disclosure forms will be a condition of the Contract. The Owner cannot enter into any contract, which does not obligate the Contractor to require the submission of Disclosure forms for subcontractors.
11. The Owner reserves the right to reject any and all proposals, and to waive any formalities.
12. This invitation does not commit the Owner to pay any cost incurred in the preparation of Proposals.
13. **Proposers shall conform to the requirements of the Arkansas licensing laws and regulations for contractors, and shall be licensed before their proposals are submitted. There shall be only one proposal submitted per State Contractors license. The Proposer will be required to indicate its license number on the Proposal Form beneath the signature.**
14. Pursuant to Ark. Code Ann. § 22-9-203, the State encourages all small and minority business enterprises to submit proposals for capital improvements. Encouragement is also made to all general contractors that in the event they subcontract portions of their work, consideration be given to the identified groups.

END OF SECTION 00130

Section 00200

INSTRUCTIONS TO PROPOSERS

1. **CRITERIA FOR SELECTION.** The Contractor(s) selected for an award will be the Contractor(s) who submits the most advantageous proposal to the University. The UA is not bound to accept the lowest priced proposal if that proposal does not provide the UA with the "Best Value". The criteria for evaluation of qualified proposals, and selection of the successful Contractor(s) for this award, will be based on the factors listed below (see proposal evaluation forms attached as a part of the Proposal Form). Each criterion should be on a separate page, numbered and titled as listed below.
 - (1) 60% of Evaluation Criteria: Contractor's proposed Coefficient. Use the PROPOSAL FORM.
 - (2) 20% of evaluation Criteria. Statement of Qualifications and the Contractor's Capabilities – a list of references of current and past customers and Contractor's past performance on other contracts for the UA or other State agencies, if applicable. Use the BEST VALUE PROPOSAL EVALUATION - Contractor Capabilities form to guide this submittal as a part of the PROPOSAL FORM. Proposers: It is very important for the Proposers to submit a thorough listing of Qualifications and Capabilities.
 - (3) 20% of evaluation Criteria: Work plan – a written Contractor's plan or approach to managing the UA's institutional facilities construction project via Job Order Contracting. Use the BEST VALUE PROPOSAL EVALUATION - Work Plan form to guide this submittal as a part of the PROPOSAL FORM. Proposers: It is very important for the Proposers to submit as detailed a Work Plan as knowledge and experience will permit in regard to working with the UA or similar institutions.
2. **GENERAL INSTRUCTIONS.** Submission of a proposal indicates Contractor's acceptance of the evaluation technique and recognition that some subjective judgments must be made.

Contractor should carefully read the information contained herein and submit a complete response to all requirements and questions as directed. Each proposal should be prepared simply and economically, providing a straightforward, concise description of your firm's ability to meet the requirements of this JOC. Emphasis should be on completeness, clarity of content, responsiveness to the requirements, and an understanding of the University's construction needs and standards. **Contractors are strongly encouraged to sequence the evaluation criteria as in Best Value Evaluation forms included with the PROPOSAL FORM to accommodate efficiency during the evaluation process.** Proposals which are qualified with conditional clauses, or alternatives to the provided forms, or items not called for in the solicitation documents, or irregularities of any kind are subject to disqualification by the UA, at its option.

The UA will not provide compensation to Contractor for any expenses incurred for proposal preparation. Proposals and any other information submitted by Contractors in response to this solicitation shall become the property of the UA.

3. **PROPOSAL DOCUMENTS.** Proposers may obtain complete sets of Contract Documents from issuing office designated in the Invitation to Propose. Complete sets of Contract Documents must be used in preparing proposals; neither Owner nor Design Professional assume responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents. Obtaining Contract documents through any source other than the Contact listed in the Invitation to Propose is not advisable due to the risks of receiving incomplete or inaccurate information, and the proposer runs the risk of basing proposer's proposal on such information. The documents obtained through the Contact or his representative(s) or the Fayetteville Campus Procurement Office are considered the official version and take precedence if any discrepancies occur. The fact that documents used for proposal purposes are named "contract documents" does not diminish in any way the right of the Owner to reject any and all proposals and to waive any formality.
4. **EXAMINATION OF DRAWINGS, SPECIFICATIONS AND SITE OF WORK.** Proposer shall examine the Contract Documents and visit the project site of work (Fayetteville Campus, U of A). Proposer shall become generally familiar with existing conditions and limitations under which the Work is to be performed, and shall base proposal on the criteria set forth hereinafter in Sections 00310 and 00410. No

allowance will be made to Proposer because of lack of such examination or knowledge. The submission of a Proposal shall be construed as conclusive evidence that the Proposer has made such examination.

5. INTERPRETATION OF CONTRACT DOCUMENTS DURING PROPOSAL PROCESS.

- 5.1 All references to the Owner shall be interpreted to mean the University of Arkansas Board of Trustees acting for and on the behalf of the University of Arkansas at Fayetteville.
- 5.2 If any person contemplating submitting a proposal is in doubt as to the true meaning of any part of the Contract Documents or finds discrepancies in or omissions from any part of the Contract Documents, he may submit to the Contact a written request for an interpretation or correction thereof not later than five (5) calendar days before the Proposal opening.
- 5.3 Address all communications regarding the Contract Documents to the U of A Contact: Georgeta Galbraith, University Facilities Management Department, 521 S. Razorback Road, Fayetteville, AR 72701; phone:(479) 575-6191.
- 5.4 Interpretation or correction of the Contract Documents will be made only by Addendum and will be mailed, faxed or delivered to each Proposer of record by FAMA or its representative; and in those instances where a Design Professional is not involved the Fayetteville Campus Procurement Department shall distribute Addenda in the above referenced manner. The Owner will not be responsible for oral explanations or interpretation of the Contract Documents.
- 5.5 **Addenda** issued during the proposal preparation period will be incorporated into the Contract Documents.

6. TYPE OF PROPOSAL.

- 6.1 The Work under this Contract will be awarded under a stipulated single coefficient, to the responsible proposer who offers the "Best Value". No segregated proposals or assignments will be considered. Proposals are to include all labor, materials, equipment, sales tax, social security tax, State Unemployment Insurance and all other like items necessary to complete this project.

7. **PREPARATION OF PROPOSAL.** Proposal shall be made on an unaltered Proposal Form identical to the form included with the Contract Documents. Fill in all blank spaces and submit one original. Proposals shall be signed with name typed below the signature. Where Proposer is a corporation, proposals shall be signed with the legal name of the corporation followed by the name of the state of incorporation, contractor's license number issued by the Contractors Licensing Board, and the signature of an authorized officer of the corporation.

- 7.1 Proposals submitted by a "Joint Venture/Joint Adventure" shall be signed by representatives of each component part of the Joint Venture. The licenses of each component part of the Joint Venture shall also be listed in the bid submittal. Therefore, joint venture proposers shall indicate at least two (2) signatures and two (2) license numbers on the Proposal Form. Exception: Joint Ventures who have been properly licensed with the Arkansas Contractors Licensing Board as a "Joint Venture" need only to indicate the joint venture license number on the Proposal Form. Joint Venture proposers shall indicate at least two (2) signatures on the Proposal Form even if they are licensed as a joint venture.

8. PROPOSAL GUARANTEE AND BONDS.

- 8.1 Each proposal shall include a bid security in the amount of \$5,000.00. The proposer will be required to include with his Proposal a cashier's check payable to the order of the OWNER drawn upon a bank or trust company doing business in Arkansas or by a corporate bid bond (Bid Bond/Bid Security).
- 8.2 The bid bond shall indemnify the Owner against failure of the Contractor to execute and deliver the contract and necessary bond (Performance and Payment Bond where required) for faithful performance of the contract. The bid bond shall provide that the Contractor or surety must pay the damage, loss, cost and expense subject to the amount of the bid security directly arising out of the Contractor's default in failing to execute and deliver the contract and bonds.

- 8.3 Owner will have the right to retain the bid security of proposers to whom an award is being considered until the Contract has been executed and bonds if required, have been furnished, or until specified time has elapsed so that proposals may be withdrawn, or all proposals have been rejected.
- 8.4 Should Proposer fail to enter into a contract and furnish the required bonds and insurance certificates within 10 days after receipt of Intent to Award, the bid guarantee will be forfeited to the Owner as liquidated damages.
9. **PERFORMANCE AND PAYMENT BOND.** Each Job Order will stipulate whether a Performance and Payment Bond is required. Performance and Payment Bonds are not required for Job Orders of \$20,000.00 or under. For work exceeding \$20,000.00, the Contractor shall furnish a Performance and Payment Bond in the amount equal to 100 percent of Job Order price, on a form identical to the Arkansas Statutory Performance and Payment Bond Form as security for faithful performance of the Contract and payment of all obligations arising thereunder within ten days after receipt of the Intent to Award. The bond shall be written by a surety company qualified and authorized to do business in the State of Arkansas. The bond shall be executed by a resident agent or a non-resident agent and shall be licensed by the Insurance Commissioner to represent the surety company executing the bond and filing with the bond the agent's Power of Attorney as his authority. The bond shall be written in favor of the Owner. Contractor shall file the bond with the Circuit Clerk in the county where the Work is to be performed. Failure to deliver said bonds, as specified, shall be considered as having abandoned the Contract and the bid security will be retained as liquidated damages.
10. **SUBCONTRACTORS.** Name of principal contractor shall be listed where indicated on the Proposal Form in accordance with Ark. Code Ann. § 22-9-204 and the contract documents. All prime contractors, as a condition to perform construction work for and in the State of Arkansas, shall use subcontractors who are qualified and licensed by the Contractors Licensing Board and qualified in Mechanical (HVAC), Plumbing, Electrical and Roofing and Sheet Metal.
- a. No person shall perform work on the contract without possessing an applicable Arkansas State License or certification for the specific work performed.
 - b. All personnel shall have a copy of their license with them and shall be required to show it to an appropriate inspector upon request.
11. **SUBMITTAL.** Submit one (1) completed copy of the Proposal on the Proposal Form in an opaque, sealed envelope accompanied by **10** complete copies of the Proposer's Qualifications, Capabilities, and Work Plan as required on the Proposal Form, and submit a digital copy of all documents in PDF format on a flash drive. Identify the envelope with: project name and number, name of Proposer, and Arkansas Contractors License number; only one proposal shall be submitted per State Contractors license number. Submit proposals in accordance with the Invitation to Propose. All blanks on the form shall be filled out in ink or be typewritten. Erroneous entries, alterations, and erasures shall be lined out, initialed by the Proposer, and the corrected entry inserted on the Proposal Form. Only those proposals submitted on Owner supplied forms as found in these documents or identical copies will be accepted.
- 11.1 **PROPRIETARY INFORMATION.** All proposal information, proposals, forms, briefs, sales brochures, etc. will become property of the Owner when submitted with a proposal. All proposal documents submitted by the proposer may be available for public inspection after the bid opening, subject to paragraph 8 of Section 00130. Proprietary pages and documents required to be submitted with proposal must be clearly marked as such.
12. **MODIFICATION AND WITHDRAWAL.** Proposer may withdraw proposal at any time before proposal opening and may resubmit up to the date and time designated for receipt of proposals. No proposal may be withdrawn or modified after time has been called for the proposal opening. Oral modifications to proposal will not be considered. Proposer may submit written modifications to proposal in writing, by telegraph, or by facsimile at any time prior to the expiration of the proposal time and date and shall so word the modification(s) as to not reveal the amount of the original proposal. Telegraph or facsimile modifications shall require written confirmation over the Proposer's signature within 24 hours after proposal opening.

13. **DISQUALIFICATION OF PROPOSERS.** The Owner shall have the right to disqualify proposals (before or after opening), which includes but is not limited to, evidence of collusion with intent to defraud or other illegal practices upon the part of the Proposer, to reject a proposal not accompanied by the required bid security or by other data required by the Contract Documents, or to reject a Proposal which is in any way incomplete or irregular.

14. **LATE PROPOSALS.** Late proposers, proposals en route, proposals left at a location other than the Office of Procurement by special carrier or other will not be considered. Proposals must be in the Office of Procurement by or before the time as indicated on the Invitation to Propose.

15. **APPLICABLE LAWS.**

15.1 Labor. Contractors employed upon the work will be required to conform to the labor laws of the State of Arkansas and the various acts amendatory and supplementary thereto, and to all the laws, regulations, and legal requirements applicable thereto.

15.2 Discrimination. Proposer shall not discriminate against any employee, applicant for employment, or subcontractor as provided by law. Proposer shall be responsible for ensuring that all subcontractors comply with federal and state laws and regulations related to discrimination. Upon a final determination by a court or administrative body having proper jurisdiction that the Proposer has violated state or federal laws or regulations, the Owner may impose a range for appropriate remedies up to and including termination of the Contract.

15.3 Taxes. Proposer shall include in each Job Order proposal all state sales tax, social security taxes, state unemployment insurance, and all other items of like nature. It is the intent that each Job Order price shall represent the total cost to the Owner of all work included in the Job Order. There are no provisions for a contractor to avoid taxes by using the tax exempt number of a state agency, board, commission or institutions. Said taxes shall be included in the Job Order price where appropriate.

15.4 State licensing laws for Contractors.

15.5 Disclosure. Potential Proposers are hereby notified that any proposer who desires to enter into a contract not exempted from the disclosure requirements, that disclosure is a condition of the Contract and that the Owner cannot enter into any such contract for which disclosures are not made and the language of paragraphs a, b, and c below will be included in the body of any contract awarded.

Potential Proposers are hereby notified that:

a. Disclosure is required to be a condition of any Job Order subcontract for which the total consideration is greater than twenty five thousand dollars (\$25,000.00).

b. The Contractor shall require any subcontractor, for which the Job Order subcontract amount is greater than \$25,000.00, to complete and sign the Contract and Disclosure and Certification. The contractor shall ensure that any agreement, current or future between the contractor and a subcontractor for which the total consideration is greater than \$25,000.00 shall contain the following:

Failure to make any disclosure required by Governor Executive Order 98-04, or any violation of any rule, regulation or adopted pursuant to that Order, shall be material breach of the term of this subcontract. The party who fails to make the required disclosure or who violates the rule, regulation, or policy shall be subject to all legal remedies available to the contractor.

c. The Contractor shall transmit a copy of the subcontractor's disclosure form to the agency and a statement containing the dollar amount of the subcontract within ten (10) days upon receipt of subcontractor's disclosure.

Note: A copy of the "Contract and Grant Disclosure and Certification Form" is included at the end of the PROPOSAL FORM.

- 15.6 Minority Participation: Pursuant to Ark. Code Ann. § 22-9-203, the Owner and the State of Arkansas encourage all small, minority, and women business enterprises to submit proposals for capital improvements. Encouragement is also made to all general contractors that in the event they subcontract portions of their work, consideration is given to the identified groups.
- 15.7 The proposal process, award and administration of the contract shall be made pursuant to Ark. Code Ann. §19-4-1416 (a)(1).
16. **LIQUIDATED DAMAGES.** The amount of liquidated damages to be assessed shall be in accordance with the amount indicated in each Job Order. Proposer understands and agrees that under the terms of the Contract to be awarded, if the Contractor fails to complete the work within the time limit specified in the Job Order, the Contractor shall pay the Owner as Liquidated Damages, and not in the nature of a penalty the sum specified in the Job Order for each day completion is delayed. It is further understood and agreed by proposer that the said sum fixed as Liquidated Damages is a reasonable sum considering the damages that Owner will sustain in the event of any delay in completion of the Work, and said sum is herein agreed upon and fixed as Liquidated Damages because of difficulty in ascertaining the exact amount of damages that may be sustained by such delay.
17. **PRE-PROPOSAL CONFERENCE.** Refer to Invitation To Propose, section 00130, for information concerning any Pre-proposal Conferences.
18. **OPENING.** Proposals will be opened as identified in the Invitation to Proposal, section 00130.
19. **EVALUATION and CONSIDERATION OF PROPOSALS,** It is the intent of the Owner to award a Contract to the responsive qualified proposers who offers the “best value” to the UA, provided the proposal has been submitted in accordance with the requirements of the Contract Documents. The Owner shall have the right to waive any formalities in a proposal received and to accept the proposal which, in the Owner’s judgment, is in its best interests. The Owner shall have the right to award any or all proposals for a period not to exceed 60 days.
- 19.1 **Tie Proposals.** If two or more sealed proposals are equal in amount, meet Proposal Document requirements, and are the lowest received by the time of the proposal opening, then the apparent low proposer will be determined by lot (placing the name of the tie proposer into a container and drawing one name). The drawing will be conducted by Fayetteville Campus Procurement Department personnel, and another person so designated by the Owner in the presence of a witness and the tie proposer or representatives. The witness shall be an employee of the State of Arkansas. Documentation of the drawing shall be included on the proposal tabulation and be signed by those present. Nothing in the above and foregoing will diminish the Owner’s reserved right to reject any and all proposals and to waive any formalities.
20. **EXECUTION OF CONTRACT.**
- 20.1 The apparent low Proposer shall be prepared, if so required by the Owner, to present evidence of experience, qualifications, and financial ability to carry out the terms of the Contract. Attention is called to the fact that the proposer in signing the proposal, represents that he has the financial ability and experience to carry out the work throughout its several stages within reasonable time frames agreed to in each Job Order.
- 20.2 The successful Proposer will be required to execute a Master Agreement with the Owner on a form identical to the Agreement Form included with the Contract Documents. Individual Job Orders will be awarded for projects in accordance with the general steps described in Section 00310, and the Performance and Payment Bonds and Certifications of Insurance shall be executed within ten days after receipt of the Intent to Award each individual Job Order.
- 20.3 The successful Proposer will be required to furnish Owner with proof of insurance, as prescribed by the General Conditions and Supplementary General Conditions.

21. **GENERAL INFORMATION.**

21.1 For information purposes, the following table summarizes historical contract amounts for recent fiscal years for the current Job Order Contractors. Future contract amounts are not guaranteed to match historical amounts, and variance from historical amounts shall not justify a change in the contract coefficient.

| | Contracts Value FY15 | Contracts Value FY16 | Contracts Value FY17 | Contracts Value FY18* |
|--------------|-------------------------|-------------------------|-------------------------|--------------------------|
| Contractor A | \$ 5,188,780.00 | \$ 5,939,214.00 | \$ 4,164,912.00 | \$ 3,055,109.06 |
| Contractor B | \$ 4,013,600.78 | \$ 4,423,379.91 | \$ 4,704,770.39 | \$ 2,679,455.68 |
| Contractor C | \$ 3,724,809.71 | \$ 1,349,846.19 | \$ 4,839,104.99 | \$ 2,664,686.88 |
| Contractor D | \$ 4,483,258.00 | \$ 4,271,879.35 | \$ 3,439,174.94 | \$ 268,736.01 |
| | *As of January 2018 | | | |

21.2 For information purposes, contractor coefficients for the four current Job Order Contractors are 1.05, 1.08, 1.09, and 1.09

END OF SECTION 00200

SECTION 00310
JOB ORDER CONTRACT (JOC) EXECUTION GUIDE

1. **PURPOSE.** The purpose of this guide is to describe the procedure to be utilized in the administration of the Job Order Contract (JOC), a Contract designed to provide the University of Arkansas Facilities Management Department with a flexible and responsive contractual capability in support of their construction services needs.

2. **DEFINITION.**

A. **Job Order Contract.** A Job Order Contract is a competitive sealed proposal firm fixed price, indefinite-quantity contract to perform work for the University. The contract may consist of a collection of proposed institutional facilities type projects. Each project will encompass detailed task specifications encompassing improvements, alterations, renovation, remodeling, and/or major repairs to UA structures and properties. Much of the work may be performed during normal operating hours. However, as is typical with educational facilities work, other hours may be necessary. It is also expected that during University break times total project loads may be significantly higher and contractor staffing should reflect these needs. For each project task, a unit of measure and a corresponding unit price are to be the basis for Contractor compensation. For work self-performed by the Contractor, the Contract shall primarily use the latest available calendar year issue of RS Means Facilities Construction Cost Data and the Cost Works electronic version, with updates as applicable, as a basis for unit cost. This resource book will be referred to as the unit price book (UPB). Contractors submitting proposals for the JOC are required to submit **one** coefficient or multiplier for normal or overtime hours. The unit price listed in Mean's "Total Incl. O&P" costs (**adjusted for the "Total Weighted Average" City Cost Index for Fayetteville, AR**) is then multiplied by the appropriate coefficient to determine the actual cost of that line item. The adjusted UPB "Total Incl. O&P" cost rate will herein be referred to as the "UPB rate". Costs derived from Division 1 of the UPB shall be included in the contractor's coefficient or allowed/disallowed in accordance with Attachment 00310-1 unless otherwise directed in writing by the FAMA Director of Engineering and Construction . The Contractor must take these costs into account when proposing the coefficient. Each Job Order embraced by the Contract is broken down into individual tasks of work, and a total price is developed based upon the UPB rate and the Contractor's multiplier. For work requiring subcontracts, the Contractor shall contact a minimum of three qualified subcontractors to provide bids. Total price for subcontracted work shall be based on the the lowest responsive bid multiplied by the Contractor's multiplier. After agreement, Facilities Management Department Representative(s) review and authorize a Job Order (JO) for performance of work.

The JOC will remain in effect for one year from date of contract award. The University retains the right to renew any resulting contract(s) for up to three (3) additional contract periods. Contracts can be renewed, with no increase in the Contractor's coefficient, only if both the Contractor(s) and the University mutually agree to do so. Justification for non-renewal from either the Contractor or the University is not required.

A Performance and Payment Bond will be required, per state law, by the Contractor for any individual project associated with Job Order Contracting in which the Job Order may exceed \$20,000. Bonds, where required, are a reimbursable item with the JOC.

In the course of executing the Contract, the Contractor agrees to abide by the terms as stated in the General and Supplementary Conditions for the University of Arkansas System,

Architect/Engineer's Guidelines, Quality Control, and other related documents in effect at the time of award.

- B. Job Order (JO). A Job Order (JO) is the contractual instrument issued by the UA Facilities Management Department (FAMA) to the Contractor. The JO will be, in part, the Contractor's UPB estimate of tasks and quantities of labor, materials, and equipment to do the work, plans and specifications, and project timeline. The individual JO becomes in effect, a fixed price lump sum Contract when the Purchase Order for the JO is issued
- C. Coefficient. The contractor's coefficient is the price multiplier that the Contractor proposes. After award, the parties utilize this multiplier to determine the price of work. The UPB rates listed in the JO are multiplied by the contractor's coefficient. For example, if the labor unit price for painting one hundred square feet of gypsum board is \$15.00 (after the Fayetteville Cost index adjustment) and the coefficient is 1.01, the Contract price would be \$15.15 ($\$15.00 \times 1.01 = \15.15). The proposal coefficient shall be an increase to the "Total Incl. O&P" costs column in the Unit Price Book, and not the "Bare Total" column. The "Total Incl. O&P" shall also be adjusted for the City of Fayetteville, Arkansas' "weighted average", and not the national average listed in the UPB. Coefficient shall be carried to two (2) decimal places only.

PLEASE NOTE: There will likely be occasions where the contractor is asked to provide materials, equipment, and/or subcontract pricing for work by direct bidding. In these cases, the same "coefficient" will apply.

- D. Overhead and General Requirements. The contractor typically bears overhead and General Requirement costs as part of the proposed coefficient of the JOC program. The following overhead and General Requirement items shall be included in the contractor's coefficient:
- (A) Providing up to two Rough Order of Magnitude (ROM) e of construction costs and construction duration during the design phase.
 - (B) Participation in a Value Engineering process in coordination with FAMA and the Architect/Engineer of record, including but not limited to, providing cursory review and input regarding potential cost saving opportunities.
 - (C) General Requirements from Division 1 of the UPB as detailed in the table show in Attachment 00310-1, with the following line item categories:
 - (1) Always allowed in JO, the contractor is expected and directed to include this item in each JO by the FAMA Representative.
 - (2) Allowed as directed, only included by written permission of the FAMA Representative due to some unusual condition peculiar to the project.
 - (3) Not allowed-included in coefficient, the contractor is never allowed to include because it is part of the proposal coefficient.
 - (4) Not in contract, totally excluded from this work and contract, but may be addressed under separate contract with owner.
- E. Preconstruction Services: Preconstruction Services may be negotiated for certain projects based on size and scope at the discretion of the FAMA Director of Engineering and Construction. These services may include, but not be limited to, detailed cost estimating (beyond R.O.M. cost estimation), forensic investigations and/or destructive testing, or other services as directed by the FAMA Director of Engineering and Construction.
- F. Rubbish Handling: The Contractor will be reimbursed for rubbish handling on a per job basis as it relates to loading a vehicle with demolished materials at project site in accordance with

appropriate UPB line items. Handling of materials identified as salvageable will be reimbursed in accordance with UPB.

- G. Disposal of Rubbish: Contractor shall lawfully dispose of rubbish off university property. Use of university dumpsters will not be allowed. All associated costs of removing rubbish less than 10 cubic yards per project from university property are to be included in the contractor's coefficient. If the project involves the use of a dumpster for 10 cubic yards or more of debris then reimbursement will be the verifiable actual dumpster fee plus 10%. Contractor shall provide an annual report listing a summary of disposed quantities and diversion rates based on USGBC guidelines.
- H. Non-Prepriced Work. Non-prepriced work is categorized and addressed as follows:
 - (1) Tasks that are not specifically included in the UPB but are within the basic intent and general scope of the contract shall use the nearest UPB description and cost. An asterisk shall precede any modified task description.
 - (2) Tasks, which are included in the UPB but differ materially more from those ordinarily encountered, shall be adjusted in material cost prior to issuance of the JO. Contractor must submit cost documentation prior to issuance of JO to exercise this optional adjustment. An asterisk shall precede any modified task description.
- I. Normal Working Hours
 - (1) For the administrative and classroom areas and surrounding areas are 8 a.m. to 5 p.m. Monday through Friday. Other days/hours may be arranged.
 - (2) For residence halls and apartments and surrounding areas are 10 a.m. to 6 p.m. seven days a week. Other hours may be arranged.

3. **JOC TECHNICAL CONTRACT SPECIFICATIONS DEVELOPMENT.**

The Architect or Engineer of Record and/or the FAMA Construction Coordinator for each JO will develop specifications necessary for the procurement and implementation of the JOC. JOC Contractors will adhere to JOC Program Specifications, General and Supplementary Conditions for the University of Arkansas System, Architects and Engineers' Guide to Standard Technical Specifications, Quality Control, and similar documents/standards. If conflict exists in related contract documents then the following shall apply. All related contract documents may be superseded by individual Job Order project specifications (1st tier) and then these JOC Program Specifications (2nd tier). The intent of the specifications is to furnish concise institutional and/or industrial standards for maintenance, repair, and construction of University facilities. In the instance where the UPB offers, minimum/maximum costs associated with a particular task, or if the task is not listed in the UPB, the Owner's Representative will cost out the materials based on local availability and use UPB labor rates most closely related to similar tasks, and apply them as directed in subparagraph A, below.

- A. Materials:
 - (1) If materials specified by the JO for a specific task exceeds the unit material bare cost in the UPB, after City Cost Index adjustment and after coefficient is applied, the Contractor may request adjustments of the bare cost. In these instances, copies of at least two competitive materials vendor quotations must be submitted to the Facilities Management Department Representative to substantiate material costs in excess of the UPB. The Contractor will be required to provide copies of invoices and proof of payment when requested by the University.

- (2) Contractor is responsible for receiving and storing their own materials, including unloading of delivery trucks, checking deliveries and transportation to the work area. University employees are not responsible for this. No new construction materials may be delivered or received by the University's Receiving Warehouse.
- (3) If the plans and specifications do not agree the specifications will prevail.
- (4) The University reserves the right to purchase material, equipment, or other required job items. The University will compensate the Contractor for providing labor to relocate or install owner-furnished materials. The cost of University-furnished material shall not be included in the cost of work.

B. Equipment: Equipment costs can be included in the JO only if a unit cost for equipment is listed for the specific task in the UPB, and actually used on the job. The Contractor shall furnish as part of his overhead cost included in the coefficient, all necessary protective equipment, concrete mixing boxes, water barrels, wheelbarrows, hoes, shovels, tools, mortar boards, ladders, portable scaffolding, shop tools, drills, saws, hand tools, shop equipment, and fabricating items customary to the trade, etc., and all other movable equipment necessary to completing the work performed under this Contract. The furnishing of tools shall include all maintenance, loss and breakage. The FAMA Representative prior to its use must approve any equipment reimbursements.

C. Labor: The University will reimburse the Contractor for "labor costs" as follows:

- (1) Labor costs will be reimbursed to the Contractor at the UPB rate x Contractor coefficient.
- (2) If a task is not literally identified in the UPB the Contractor will be reimbursed in accordance with non-prepriced protocol (2.G), with trade and labor unit costs matched as close as possible to UPB rates, multiplied by the coefficient. Insurance, fringe benefits, travel time, employee's residence to job site, or vacation allowances are to be included in the Contractor's coefficient.
- (3) A worker with overall project supervisory authority is to be present on each job site at all times. Supervisory costs are to be part of the Contractor's coefficient and will not be reimbursed as a separate labor cost.
- (4) Time and cost associated with an employee's travel to and from job site are not reimbursable.
- (5) The Contractor may be required to perform the work under this Contract on the job site in the presence of University employees, other University Contractors, and/or Subcontractors, whether union or non-union, and shall complete the work assigned in the time required by the JO. In off-site work such as off-site fabrication, the University shall be so notified at the time of the issuance of the JO by the Contractor. The University reserves the right to inspect such off-site work at any time.
- (6) The Contractor shall maintain a local office with telephone available for receiving and making calls throughout the working day and shall have available sufficient storage space for materials and equipment if his office and principal place of business is not located within 50 miles of the University. Other office equipment and personnel competencies required are fax machine and computer with an email account. The communications response time of the Contractor (or equal authority Contractor's representative) to the University, Monday through Friday, 8:00 A.M. to 5:00 P.M. shall not exceed 4 hours.

D. Subcontracts: Contractors may use the services of Subcontractors. The Contractor shall make every effort to obtain at least three responsive bids for each subcontracted task. The Contractor shall be responsible for reimbursing Subcontractors. The FAMA Representative may require the submittal of payment affidavits for Subcontracts prior to final payment. The use of Subcontractors does not alter UPB unit costs or Contractor coefficient.

- (1) The JOC Contractor agrees to be fully responsible to the University for the acts and omissions of the Subcontractor and of persons directly employed by the Subcontractor.
- (2) Nothing contained in the JOC or Contract Documents shall create any contractual relation between any Subcontractor and the University and nothing in the Contract documents is intended to make the Subcontractor a beneficiary of the Contract between the University and the Contractor. The Contractor agrees to bind every Subcontractor, and will see that every Subcontractor agrees to be bound, by the terms of the JOC and related Contract Documents inclusive of JOC Program Specifications, General and Supplementary Conditions, Architect's & Engineer's Guide to Standard Technical Specifications, Quality Control, and other similar documents/standards.

4. **EXECUTION PROCEDURES.**

A. Contractor Selection

- 1) FAMA, at its sole discretion, will select a JOC Contractor for negotiation of a potential JO project based on past performance, capability, and capacity.

B. FAMA Construction Coordinator/Contractor Coordination

- (1) The Facilities Management Department Construction Coordinator contacts the Contractor(s) of pending JO. The Contractor's representative shall respond within three working days by meeting with the FAMA Construction Coordinator (and possibly the customer) to conduct a scope validation site visit and conference. During this meeting, the following are discussed and established:
 - a. Project number and title.
 - b. Site investigation.
 - c. Methods and alternatives for accomplishing work per RS Means estimate, plans, and specifications.
 - d. Scope of the work, definitions, tasks and quantities as required.
 - e. Time requirements for completion and site availability.
- (2) The contractor shall review the project and provide a work order proposal on the proposed JO within three weeks from the scope meeting, unless additional time is approved by the FAMA Director of Engineering and Construction. The Contractor is responsible for verifying tasks, refining quantities. The work order proposal provided by the Contractor shall consist of the following:

- a. A transmittal letter including:
 - i. Reference to the Work Order Title
 - ii. List of contract drawings/specifications, including date of issuance, design professional, addenda, etc.
 - iii. Summary of scope of work and/or task items, including any scope assumptions
 - iv. List or description of exclusions
 - v. Summary of scope of any alternates, if applicable
 - b. A spreadsheet illustrating detailed cost calculations, including the following. For information purposes, an acceptable template is provided in the Appendix.
 - i. A price summary page including application of coefficient
 - ii. Subcontractor bid tabulation of all bids/quotes obtained from subcontractors, including subcontractor names and bid amounts, with accepted bid highlighted. If nonresponsive bids are received, the word “nonresponsive” may be substituted for the bid amount.
 - iii. Detailed calculations with itemized breakdowns of materials, equipment, and labor for self-performed work based on UPB rates.
- (3) Even though there is the possibility of equipment/material price escalation given the current construction market environment, the Contractor will be required to stand behind his negotiated price quotation for a minimum period of 30 calendar days from the date of its acceptance by the FAMA Construction Coordinator. If a final negotiation and Notice To Proceed have not been executed by the FAMA Construction Coordinator within that time period, then the Contractor shall have the right to review his price quotation and to modify it as justifiable. However, this provision does not negate the UA’s right to advance to another Contractor if a re-negotiation is unsuccessful.
- (4) After review of the contractor’s JO revisions (if any), the FAMA Construction Coordinator will approve or disapprove the JO, negotiate, or advance to another contractor.
- (5) Once the JO is approved, the Contractor will begin work as per date ranges specified in the JO. The FAMA Construction Coordinator will perform the Contract administration associated with the JO until work completion, including final inspection and acceptance within the time frame designated on the JO.
- (6) The FAMA Construction Coordinator may hold retainage for completion of any punch list items in an amount estimated to be 200% of the cost to complete the punch list.
- (7) At time of project completion (inclusive of the completion of punch list items), the Contractor will submit a request for Final Payment to be approved by the FAMA Construction Coordinator.

5. **MODIFICATION TO JOB ORDERS**

- A. It is the sole responsibility of the FAMA Construction Coordinator to authorize a Change Order to a JO. Change Orders costs shall be validated using the UPB after City Cost Index adjustment. At the request of FAMA, the Contractor shall submit a UPB estimate or other documentation to justify the change order pricing. If differing site conditions are encountered during execution of the Job Order, or if there is a desired change to the quantity or quality of work by the owner, then a modified or supplemental JO by way of Change Order is required. If a Change Order

involves negotiation with a subcontractor, the subcontractor overhead & profit markup shall be limited to 12 percent, and the contractor's markup shall be limited to the coefficient. All negotiations must be completed within 3 working days.

B. For the purpose of issuing change orders to a Job Order, three typical circumstances are anticipated:

1. Differing Site Conditions.
2. Increased scope of work.
3. Decreased scope of work.

C. The FAMA Construction Coordinator will prepare a proposed Change Order to the JO addressing differing site conditions or increased/decreased scope of work.

6. **REPORTING REQUIREMENTS AND PAYMENTS**

A. The FAMA Construction Coordinator will be responsible for administering all JO's under the Contract.

B. Normally, the Contractor will only be paid for completed Job Orders. Application for final payment shall be submitted once all work and the punch list (if applicable) are completed. If the performance period of a Job Order exceeds 30 days, partial payment is authorized, based on the percentage of completion minus a 5% retainage of total sum of JO. Liquidated Damages may be assessed if project extends beyond JO agreed completion date. This includes punch list items. Partial and final payments shall be submitted to the FAMA Construction Coordinator using the standard AIA "Application for Payment" form. When the work is certified complete by the FAMA Construction Coordinator and an invoice received, the Facilities Management Department will process the invoice for payment through established University procedures for prompt payment.

C. The University reserves the right to deduct from the contract an equitable amount for any damaged or uncorrected work until such time as the FAMA Construction Coordinator deems the work satisfactory. If unfinished work or damaged or uncorrected work remains after the agreed upon JO completion date, the University reserves the right to proceed in accordance with paragraph 2.3.1 of the General Conditions.

D. The University may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any payment certificate to such extent as may be necessary to protect the University from loss on account of:

- (1) Defective work not remedied;
- (2) Claims filed or reasonable evidence indicating probable filing of claims;
- (3) Failure of the Contractor to make payments properly to Subcontractor for material or labor;
- (4) A reasonable doubt that the Contract can be completed for the unpaid JO balance;
- (5) Damage to another Contractor;

- (6) The expectation that Liquidated Damages will be charged;
- (7) Deductions associated with loss of or damage to University property as a result of negligence or non-conformance to JOC contract documents.

When the above grounds are removed, payment shall be made for the amount withheld because of them.

- E. Liquidated Damages and/or incentives may be included at the discretion of FAMA when time is of the essence for a particular project and are set at the joint signing of the JO. The basis for Liquidated Damages shall be as stipulated in paragraph 16, Section 00200, Instructions To Bidders. Warning of intent to assess Liquidated Damages may be sent to the Contractor and Bonding Company for insufficient progress or chronic under-manning of a project to the extent that it is believed that the project cannot be completed within the agreed time frame. If the scope of the project includes outside work that is affected by inclement weather the Contractor must document these days by submitting copies of local weather reports that indicate precise conditions.
- F. The Contractor shall submit a weekly report of activities. If a specific reporting format is required, the specific JO will so state.
- G. The Contractor shall submit a copy of MSDS's to the FAMA Construction Coordinator for all materials used in the project as part of project closeout.
 - 1. Payment for Materials Stored Off-Site: Payment for materials stored at off-site locations (off-campus) may be included in contractor's applications for payment only with the prior written approval of the FAMA Director of Engineering and Construction. Invoices for the material shall be provided as a basis for payment, and the existence and condition of the material shall be verified by the Architect/Engineer or designed FAMA personnel. Generally, payment for materials stored off-site will only be allowed under special circumstances as follows: The material is too large, sensitive, or valuable to store at the site or on-campus locations designated by FAMA.
 - 2. Just in time delivery is not practical or possible.
 - 3. Withholding payment would cause a significant cash flow problem for the contractor (e.g. the material cost is relatively high and the duration of storage is greater than 30 days.)
 - 4. The material is stored in a verifiable bonded and/or insured storage facility approved by FAMA, and the cost of storage/insurance does not result in increased cost to the project.

7. **TERMINATION**

If termination of a JOC contract is desirable for whatever reason, it shall be effected in accordance with the Agreement.

END OF SECTION 00310

**Attachment 00310-1
UPB (RS Means) Division 1 Cost Allocation Table**

| Heading and Category Description | | Always Allowed in JO | Allowed as Directed in JO | Not Allowed; Included in Coefficient | Not in Contract |
|----------------------------------|---|----------------------|---------------------------|--------------------------------------|-----------------|
| 01 11 | Summary of Work | | | | |
| 01 11 31 | Professional Consultants | | | | |
| | 31.10 Architectural Fees | | | | |
| | 31.20 Construction Management Fees | | | | |
| | 31.30 Engineering Fees | | | | |
| | 31.50 Models | | | | |
| | 31.75 Renderings | | | | |
| 01 21 | Allowances | | | | |
| 01 21 16 | Contingency Allowances | | | | |
| | 16.50 Contingencies | | | | |
| 01 21 53 | Factors Allowance | | | | |
| | 53.60 Security Factors | | | | |
| 01 21 55 | Job Conditions Allowance | | | | |
| | 55.50 Job Conditions | | | | |
| 01 21 57 | Overtime Allowance | | | | |
| | 57.50 Overtime | | | | |
| 01 21 63 | Taxes | | | | |
| | 63.10 Taxes | | | | |
| 01 31 | Project Management and Coordination | | | | |
| 01 31 13 | Project Coordination | | | | |
| | 13.20 Field Personnel | | | | |
| | 13.30 Insurance | | | | |
| | 13.40 Main Office Expense | | | | |
| | 13.50 General Contractor's Markup | | | | |
| | 13.60 General Contractor's Main Office Overhead | | | | |
| | 13.80 Overhead and Profit | | | | |
| | 13.90 Performance Bond (For Projects Over \$20,000) | | | | |
| 01 32 | Construction Progress Documentation | | | | |
| 01 32 13 | Scheduling of Work | | | | |
| | 13.50 Schedule | | | | |
| 01 32 33 | Photographic Documentation | | | | |
| | 33.50 Photographs | | | | |
| 01 41 | Regulatory Requirements | | | | |
| 01 41 26 | Permit Requirements | | | | |
| | 26.50 Permits | | | | |
| 01 45 | Quality Control | | | | |
| 01 45 23 | Testing and Inspection Services | | | | |
| | 23.50 Testing | | | | |
| 01 51 | Temporary Utilities | | | | |
| 01 51 13 | Temporary Electricity | | | | |
| | 13.80 Temporary Utilities | | | | |
| 01 52 | Construction Facilities | | | | |
| 01 52 13 | Field Offices and Sheds | | | | |
| | 13.20 Office and Storage Space | | | | |

**Attachment 00310-1
UPB (RS Means) Division 1 Cost Allocation Table**

| Heading and Category Description | | Always Allowed in JO | Allowed as Directed in JO | Not Allowed; Included in Coefficient | Not in Contract |
|----------------------------------|--|----------------------|---------------------------|--------------------------------------|-----------------|
| | 13.40 Field Office Expense | | | | |
| 01 54 | Construction Aids | | | | |
| 01 54 09 | Protection Equipment | | | | |
| | 9.50 Personnel Protective Equipment | | | | |
| | 9.60 Safety Nets | | | | |
| 01 54 16 | Temporary Hoists | | | | |
| | 16.50 Weekly Forklift Crew | | | | |
| 01 54 19 | Temporary Cranes | | | | |
| | 19.50 Daily Crane Crews | | | | |
| | 19.60 Monthly Crane Crews | | | | |
| 01 54 23 | Temporary Scaffolding and Platforms | | | | |
| | 23.60 Pump Staging | | | | |
| | 23.70 Scaffolding | | | | |
| | 23.75 Scaffolding Specialties | | | | |
| | 23.80 Staging Aids | | | | |
| 01 54 26 | Temporary Swing Staging | | | | |
| | 26.50 Swing Staging | | | | |
| 01 54 36 | Equipment Mobilization | | | | |
| | 36.50 Mobilization | | | | |
| 01 55 | Vehicular Access and Parking | | | | |
| 01 55 23 | Temporary Roads | | | | |
| | N/A UA Parking Passes | | | | |
| | 23.50 Roads and Sidewalks | | | | |
| 01 56 | Temporary Barriers and Enclosures | | | | |
| 01 56 13 | Temporary Air Barriers | | | | |
| | 13.60 Tarpaulins | | | | |
| | 13.90 Winter Protection | | | | |
| 01 56 16 | Temporary Dust Barriers | | | | |
| | 16.10 Dust Barriers, Temporary | | | | |
| 01 56 23 | Temporary Barricades | | | | |
| | 23.10 Barricades | | | | |
| 01 56 26 | Temporary Fencing | | | | |
| | 26.50 Temporary Fencing | | | | |
| 01 56 29 | Temporary Protective Walkways | | | | |
| | 29.50 Protection | | | | |
| 01 56 32 | Temporary Security | | | | |
| | 32.50 Watchman | | | | |
| 01 58 | Project Identification | | | | |
| 01 58 13 | Temporary Project Signage | | | | |
| | 13.50 Signs | | | | |
| 01 66 | Product Storage and Handling Requirements | | | | |
| 01 66 19 | Material Handling | | | | |
| | 19.10 Material Handling | | | | |
| 01 71 | Examination and Preparation | | | | |

**Attachment 00310-1
UPB (RS Means) Division 1 Cost Allocation Table**

| Heading and Category Description | | Always Allowed in JO | Allowed as Directed in JO | Not Allowed; Included in Coefficient | Not in Contract |
|----------------------------------|---|----------------------|---------------------------|--------------------------------------|-----------------|
| 01 71 23 | Field Engineering | | | | |
| | 23.13 Construction Layout | | | | |
| | 23.19 Surveyor Stakes | | | | |
| 01 74 | Cleaning and Waste Management | | | | |
| 01 74 13 | Progress Cleaning | | | | |
| | 13.20 Cleaning Up (Daily or Progress Cleaning) | | | | |
| | N/A Final Cleaning | | | | |
| | N/A Separating and Diverting Construction Debris | | | | |
| | N/A Tracking Disposal and Diversion Quantities | | | | |
| 01 76 | Protecting Installed Construction | | | | |
| 01 76 13 | Temporary Protection of Installed Construction | | | | |
| | 13.20 Temporary Protection | | | | |
| 01 91 | Commissioning | | | | |
| 01 91 13 | General Commissioning | | | | |
| | 13.50 Building Commissioning | | | | |

**SECTION 00410
PROPOSAL FORM**

Bid Time: _____

Bid Date: _____

Location: _____

PROPOSAL FROM:

PROPOSAL TO: University of Arkansas Board of Trustees acting for and on behalf of The University of Arkansas at Fayetteville.

PROJECT: University of Arkansas, Job Order Contracting for construction services.

- [1]. Having carefully examined the Contract Documents for this project, as well as the premises and all conditions affecting the proposed construction, the undersigned proposes to provide all labor, materials, services, taxes and equipment necessary for, or incidental to, the construction of an assigned project in accordance with the Contract Documents within the time set forth in each Job Order, for the compensation as determined by the method set forth hereinbefore in Section 00310.
- [2]. The undersigned, as proposer declares that the only person or parties interested in this proposal as principals are those named herein; that this proposal is made, without collusion with any other person, firm, corporation; that the proposer has carefully examined the form of contract, instructions to proposers for the proposed work; and agrees that the proposer will provide all the necessary machinery, tools apparatus, and other means of construction, and will do all the work and furnish all materials called for in the contract, specifications, and drawings, in the manner prescribed therein and according to the requirements of the Owner's Representative, or Architect or Engineer therein set forth.
- [3]. It is further agreed that the quantities of work to be done and materials to be furnished may be increased or diminished as may be considered necessary, in the opinion of the Architect, Engineer or Owner's Representative, to complete the work fully as planned and contemplated. Adjustment for changes in work will be in accordance with the JOC Execution Guide and other related documents.
- [4]. Proposal amounts shall be shown in both words and figures. In case of discrepancies the amount shown in words shall govern.
- [5]. The Proposer acknowledges Ark. Code Ann. § 22-9-212 and intends to identify job specific costs for Trenching Safety Systems for each individual Job Order in accordance with the Job Order Contracting Execution Guide.
- [6]. The undersigned, in compliance with the Contract Documents for the construction of the above named project, does hereby declare:
 - a. That the undersigned understands that the Owner reserves the right to reject any and all proposals and to waive any formality.
 - b. That if awarded the Contract, the undersigned will enter into an Agreement, on a form identical to the form included in the Contract Documents and execute required performance and payment bonds within 10 days after receipt of the Intent to Award each Job Order, and after receiving a

specific Notice To Proceed for a specific Job Order will commence work within time periods set forth in Section 00310, and will complete the Contract fully within the time for completion as indicated. Should the undersigned fail to fully complete the work within the above stated time, he shall pay the Owner as fixed, agreed and liquidated damages, and not as a penalty, the sum set forth in each Job Order for each calendar day of delay until the work is completed or accepted.

- c. That this proposal may not be withdrawn for a period of 60 days after the proposal opening.
- d. The undersigned agrees to pay all prevailing hourly wage rates required by Arkansas State Law and to pay all prevailing hourly wage rates mandated by the Davis-Bacon Wage Rates and any other applicable federal regulations.
- e. The Contractor will be selected to provide Job Order Contracting "on call services" for a period of one year, with the option for the Owner to extend the contract for up to three (3) additional contract periods.
- f. Payment made for work performed will be based upon the method described in paragraph [9], hereinafter.

[7]. The following documents are attached to and made a condition of this Proposal.

- a. Contractor's Statement of Qualifications and Work Plan. **Proposers: Please note the very important significance of providing a thorough response to this part of the Request for Proposals.**
 - 1) Best Value Proposal Evaluation - Contractor Capabilities (respond to evaluation form attached at back of this section).
 - 2) Best Value Proposal Evaluation - Work Plan (respond to evaluation form attached at back of this section).

[8]. The undersigned acknowledges receipt of and inclusion as a part of the Contract Documents the following addenda:

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

[9]. I/We the undersigned, having read the JOC Execution Guide General Conditions and Supplementary Conditions for the University of Arkansas System, Invitation to Propose, Instructions to Proposers, and all other sections of this Program Specifications Manual, hereby propose to furnish all labor, materials, equipment and everything else necessary to complete projects in accordance with the conditions contained herein.

Each Job Order Contract shall be based upon a single coefficient, unit price, indefinite-quantity, firm fixed price, contract to perform for the University of Arkansas Facilities Management Department. THE FOLLOWING MULTIPLIER IS TO BE USED WHEN PRICING WORK USING THE UNIT PRICE BOOK (UPB) METHOD (CURRENT ISSUE OF RS MEANS FACILITIES CONSTRUCTION COST DATA) AND/OR APPLIED TO SUBCONTRACTS.

Coefficient (in words) _____ (in Figures) _____ shall be a multiplier applied to the "Total Incl. O&P" cost column in the Unit Price Book and not the "Bare Total" column. The "Total Incl. O&P" shall be adjusted for the City of Fayetteville's "Total weighted average" and not the national average value listed in the UPB. Coefficient shall be carried to two (2) decimal places only. There is no provision for escalation of labor rates from those included in the UPB pricing. Therefore, the Proposer should consider the difference in actual and allowable labor rates when determining his own coefficient to be applied to the UPB pricing.

The performance and payment bonds, when required by this manual or the laws of Arkansas will be submitted with the executed contract if the proposal is accepted. The undersigned certifies that the bid coefficient contained in this proposal has been carefully checked and is submitted as correct and final. The undersigned agrees that he will not withdraw this proposal for a period of 60 calendar days

Respectfully Submitted:

Name of Proposer (Typed or Printed)

(Address)

BY:

(Signature and Title)

Arkansas Contractor's License Number

Telephone Number

Fax Number

Federal ID Number or Social Security Number

(Date)

BEST VALUE PROPOSAL EVALUATION-Contractor Capabilities

Solicitation for Proposal _____

CRITERIA

| | | Possible Points | Total Points Given |
|---|---|-----------------|--------------------|
| 0 - 1 Minimally addressed requirements/2-3 Meets requirements/4 Exceeds Requirements. | | | |
| CONTRACTOR CAPABILITIES: (20% OF TOTAL POINTS) | | | |
| 1. | <p>Project Experience: Complete list with scopes of work construction projects within the last five years with commercial corporations, government, and higher education clients. [Should be limited to 15 pages]</p> <p>*Does the proposer demonstrate experience with clients of similar size and scope, including job order contracting, construction projects under \$1 million, building systems, mechanical/electrical/plumbing, and/or horizontal work?</p> <p>Provide three to five references. Letters of recommendation may be included* Did the list provide sufficient detail to determine ability? Reference checks sheets and comments?</p> | 0-6 | |
| 2. | <p>Company history and description (Minimum 3-consecutive years): General information typically used (see verification sheets). List experience, current Bond Rate and Experience Modification Rate (EMR), approach to client service*.</p> <p>Experience relates to the amount of time in providing the service requirements, not necessarily the time the business has been in operation.</p> | 0-6 | |
| 3. | <p>Project personnel qualifications: List of key people to be used on a UA JOC team, including resumes and an organizational chart. *Were key personnel roles, responsibilities and resumes identified and provided?</p> <p>Does the organizational chart support the level of service required (number and type of crews, level of supervision)? Individual credentials for UA JOC team members as well as Company certifications and licensure, including an Arkansas General Contractors License (Mandatory.)</p> <p>Was information provided complete and current?</p> | 0-8 | |
| <p>Total Contractor Capability Points (A) (transcribe total to page 00410-5) Reference information provided on Contractor's Qualification Statement Form</p> | | 0-20 | |

BEST VALUE PROPOSAL EVALUATION – Work Plan

Solicitation for Proposal _____

CRITERIA

| 0-1 Minimally addressed requirements/2-3 Meets requirements/4 Exceeds requirements. | | Possible Points | Points Given |
|---|---|------------------------|---------------------|
| WORK PLAN: (20% OF TOTAL POINTS) | | | |
| 1. | <p>Work Plan: Descriptive narrative sufficiently explaining how work will be performed, identities of staff, project management software, time lines, equipment and supplies procurement and deployment, subcontract supervision, strategies, reporting, overall quality of the work plan.</p> <p>Was this plan well organized and presented in a clear, concise and logical manner?</p> | 0-4 | |
| 2. | <p>Services: Outline of sufficient detail as to contractor services provided in this proposal. Specifically, describe services that will be self-performed.</p> <p>Were services explained as to what and how services are to be provided and to what extent?</p> <p>Are additional services of value to the University being offered in this proposal?</p> | 0-4 | |
| 3. | <p>Procedures: Outline and discussion of quality control personnel, plan, and standards; safety plan; deficiency and punch list procedures, emergency procedures, and contingency plans for working around our ongoing educational operations (night, weekend, and intermittent scheduling).</p> <p>Did the proposer reflect standards to be utilized for implementation policies or procedures and clearly outline and discuss extent?</p> | 0-4 | |
| 4. | <p>Reporting and documentation: Examples of project management reports, close-out documents, as built procedures, shop drawings, submittal procedures, and safety reporting. Discuss project management, including tracking of submittals, etc.</p> <p>Did the proposer clearly and concisely explain their reporting and documentation capabilities and provide examples?</p> | 0-4 | |
| 5. | <p>Acceptability: Was the work plan tailored to fit the University’s operations?</p> <p>Did it provide sufficient detail and insight into our educational needs and mission?</p> <p>Were responsibilities clearly and explicitly defined and aligned with the JOC program requirements?</p> | 0-4 | |
| Total Work Plan Points (B) | | 0-20 | |
| Total Contractor Capability Points (transcribed from sheet 00410-4) (A) | | 0-20 | |
| Cost Coefficient (60% of total points) (C) | | 0-60 | |
| (Low bid coefficient/this bid coefficient) x total maximum points for cost = points | | | |
| GRAND TOTAL WORKSHEET POINTS (A+B+C) =D (D) | | 0-100 | |

END OF PROPOSAL FORM

**SECTION 00520
AGREEMENT FORM**

THIS AGREEMENT entered into this _____ day of _____ 20__ by and between _____ (name and address) hereinafter referred to as the Contractor, and the Board of Trustees of the University of Arkansas acting for and on behalf of the University of Arkansas at Fayetteville Campus hereinafter referred to as Owner,

WITNESSETH:

1. That for and in consideration of the payment by the Owner in an amount set forth in each Job Order, the Contractor hereby agrees to furnish all tools, labor, equipment, and materials, and to build and construct that certain project in Washington County, as designated.

Project Name: Fiscal Year 2018 University of Arkansas, Job Order Contracting for Construction Services, more specifically described in the Contract Documents attached hereto and incorporated herein by reference. Contract Documents include the following: the Agreement Form (this instrument); the Invitation to Propose; Instruction to Proposers; Proposal Form; all Addenda; General and Supplementary Conditions. All construction shall be in exact accord with the Contract Documents filed with the University of Arkansas Procurement Department located in Fayetteville, Arkansas on _____ (proposal date) _____. The Owner shall have direct contract supervision. Said construction shall be to the satisfaction of the Owner and the Design Professional, and in accordance with the laws of the State of Arkansas, and the work shall be subject to inspection and approval at all times by the Owner, the Design Professional, appropriate state and federal agencies.

2. Owner may at any time during the progress of the work alter, change, subtract from, or add to said Contract Documents without violating this Agreement or the terms thereof. Said changes, alterations, subtractions, or additions shall be set forth in writing in a document referred to as a "Change Order." Said document shall not be effective unless approved by the Owner, and the Design Professional. Once effective, the Change Order shall be attached hereto and incorporated herein by reference and shall be made a condition or term of the Contract Documents.

3. The Contractor agrees, for the consideration set forth in the Proposal Form, to begin work within 7 calendar days after a Notice to Proceed is issued and to complete the work within the number of consecutive calendar days of the start date established by each Notice To Proceed. If the Contractor fails to complete the work within the time limit herein specified, he shall pay to the Owner, as liquidated damages and not in the nature of a penalty, the sum specified in the Proposal Form of for each calendar day delayed, it being understood and agreed between the parties hereto that the said sum fixed as liquidated damages is a reasonable sum, considering the damages that Owner will sustain in the event of any such delay, and said amount is herein agreed upon and fixed as liquidated damages because of difficulty of ascertaining the exact amount of damages that may be sustained by such delay. The said sum shall be deducted from the final amount of estimate due the Contractor.

4. Should Contractor be delayed in the execution or completion of the work by the act, neglect or default of the Owner, or by any damage by fire, weather conditions or other casualty or event for which the contractor is not responsible, or by general strikes or lockouts caused by acts of employees, then any extended period shall be determined and fixed by the Owner. Said extended period shall be the time for a period equivalent to the time lost by reason of any or all of the causes aforesaid, but no such allowance shall be made unless a claim therefore is presented in writing to the Owner within seven calendar days of the occurrence of the event causing the delay.

5. It is mutually agreed between the parties that in the performance of this contract, Contractor is acting independently and in no sense as Agent of the State or the Owner. Contractor shall not let, assign, or transfer this contract or any interest therein, without the written consent of the Owner.

6. It is agreed and understood between the parties hereto that the Contractor shall accept, and the Owner will pay for, the work, at the prices stipulated in the Contract Documents, such payment to be in the form of legal tender, and the payment shall be made at the time and in the manner set forth in the Contract Documents.

7. Any laborer or mechanic employed by the Contractor or any Subcontractors for this project, directly on site for the work covered by the Contract Documents, shall be paid a rate of wages required by the Contract Documents. If the Owner discovers that wages less than the rate of wages specified by the Contract Documents have been or are being paid, then the Owner, after giving written notice to the Contractor, will terminate the Contractor's right to proceed with the project work or such part of the work as to which there has been a failure to pay the required wages and to prosecute the work to completion by contract or otherwise, and the Contractor and his sureties shall be liable to the Owner for any excess costs occasioned thereby.

8. Contractor shall promptly repair, at his own expense and to the satisfaction of the Owner damage done by him or his employees or agents at the work site, or to the public property or buildings, or both, and will save the Owner harmless from all claims of any person for injury to person or to property occasioned by his act, or the acts of his employees or agents, while in the execution of the work specified.

9. The Owner may terminate this agreement to the extent Owner's funds are no longer available for expenditures under this agreement.

10. Failure to make any disclosure required by Governor's Executive order 98-04, or any violation of any rule, regulation, or policy adopted pursuant to that Order, shall be a material breach of terms of this contract. Any contractor, whether an individual or entity, who fails to make the required disclosure or who violates any rule, regulation, or policy shall be subject to all legal remedies available to the Agency.

a) The contractor shall prior to entering any agreement with any subcontractor, for which the total consideration is greater than \$25,000, require the subcontractor to complete a Contract and Grant Disclosure and Certification Form. The contractor shall ensure that any agreement, current or future between the contractor and a subcontractor for which the total consideration is greater than \$25,000 shall contain the following:

"Failure to make any disclosure required by Governor Executive Order 98-04, or any violation of any rule, regulation or adopted pursuant to that Order, shall be a material breach of the term of this subcontract. The party who fails to make the required disclosure or who violates the rule, regulation, or policy shall be subject to all legal remedies available to the contractor."

b) The Contractor shall, within ten days of entering into any agreement with a subcontractor, transmit to the Fayetteville Campus Procurement Office, a copy of the Contract and Grant Disclosure and Certification Form completed and signed by the subcontractor and a statement containing the dollar amount of the subcontractor.

c) The terms and conditions regarding the failure to disclose and conditions which constitutes material breach of contract and rights of termination and remedies under the Executive Order 98-04 are hereby incorporated within.

11. Nothing in this Contract shall be construed to waive the sovereign immunity of the STATE OF ARKANSAS or any entities thereof, including Owner.

Executed by the parties who individually represent that each have the authority to enter into this Contract.

CONTRACTOR

BY: _____

TITLE: _____

ADDRESS: _____

DATE: _____

NAME: _____

WITNESS:

Affix Corporate Seal (if any)
Address:

**The Board of Trustees of the University of Arkansas acting for
and on behalf of the University of Arkansas, Fayetteville**

BY: _____
Tim O'Donnell- Vice Chancellor for Finance and Administration

DATE: _____

END OF DOCUMENT

SECTION 00700 - GENERAL CONDITIONS

ARTICLE 1 -- GENERAL PROVISIONS

1.1 DEFINITIONS

- 1.1.1 Contract Documents: Contract Documents consist of Agreement; Invitation to Bid; Instruction to Bidders; the Bid Form; the Bid and the Performance and Payment bonds; General and Supplementary Conditions; Specifications; Drawings; Addenda issued prior to execution of the Contract; all Owner approved Change Orders; other documents listed or referred to in the Agreement; and modifications issued after execution of the Contract and signed by Contractor and Owner.
- 1.1.2 Contract: The Contract Documents form the Contract for construction. The Contract Documents will not be construed to create a contractual relationship between the Design Professional and Contractor, between the Owner and a subcontractor, between the Owner and Design Professional, or between entities other than the Owner and Contractor.
- 1.1.3 Work: Construction and services required by the Contract Documents whether completed or partially completed, include tools, labor, equipment, supplies, transportation, handling, and incidentals provided by the Contractor.
- 1.1.4 Project: The total capital improvement project described in the Contract Documents.
- 1.1.5 Drawings: Graphic and textual portions of the Contract Documents showing the design, location, and dimensions and size of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.
- 1.1.6 Specifications: Written requirements for materials, equipment, systems, standards, and workmanship for the Work, and performance of related services.
- 1.1.7 Project Manual: Volume, which may include the bidding requirements, forms, contracting requirements, and the Specifications.
- 1.1.8 Owner: The person or entity identified as such in the Contract Agreement, referred to throughout the Contract Documents as singular in number. The term Owner means the Owner and the Owner-authorized representative.
- 1.1.9 Contractor: The person or entity identified as such in the Contract Agreement, referred to throughout the Contract Documents as singular in number. The term Contractor means the Contractor or the Contractor-authorized representative.
- 1.1.10 Design Professional (Architect/Engineer/Consultant): The person or entity identified as such in the Agreement, lawfully licensed to practice architecture or engineering or another field of expertise and under contract to Owner to provide design service, advice, and consultation, referred to throughout the Contract Documents as if singular in number. The term Design Professional means the Architect/Engineer/ Consultant or the authorized representative.
- 1.1.11 Subcontractor: Any person, firm, or corporation with a direct contract with the Contractor who acts for or in behalf of the Contractor in executing a portion of the Work. The term subcontractor is referred to as singular in number and means the subcontractor or the subcontractor-authorized representative.

1.1.12 Inspector: A duly authorized representative of the Owner, and Design Professional, designated for detailed inspection of materials, construction, workmanship, and methods of construction.

1.1.13 Site: The particular location of that part of the project being considered.

1.1.14 State: The Owner.

1.2 INTENT

1.2.1 The intent of the Contract Documents is to set forth the standards of construction, the quality of materials and equipment, the guarantees that are to be met, and to include items necessary for proper execution and completion of the Work. The Contract Documents are complementary and what is required by one will be as binding as if required by all. Performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable as necessary to produce indicated results.

1.2.2 Organization of the Specifications into divisions, sections, and articles, and arrangement of Drawings will not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.2.3 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.3 CAPITALIZATION

1.3.1 Terms capitalized in the Contract Documents include those which are specifically defined, the titles to numbered sections and articles, identified references to paragraphs, and the titles of other published documents.

1.4 INTERPRETATION

1.4.1 Whenever in these Contract Documents the words "as ordered", "as directed", "as required", "as permitted", "as allowed", or words or phrases of like import are used, it shall be understood that the order, direction, requirement, permission, or allowance of the Owner and Design Professional is intended.

1.4.2 Whenever in these Contract Documents the word "product" is used, it shall be understood that the materials, systems, and equipment will be included.

1.4.3 Whenever in these Contract Documents the word "provide" is used, it shall be understood that it means to "furnish and install".

1.4.4 The Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an", but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

ARTICLE 2 -- OWNER

2.1 LAND

2.1.1 The Owner will provide the lands shown on the Drawings upon which the Work shall be performed. The Owner will provide a right-of-way for access to the project site.

2.1.2 The Owner will provide base lines for the location of the principle component parts of the Work with a suitable number of bench marks adjacent to the Work.

2.2 **RIGHT OF ENTRY BY OWNER**

2.2.1 The Owner and his authorized representative will have the right to enter the property or location on which the Work shall be constructed. The Owner further reserves the right to construct or have his authorized agents construct such work as the Owner will desire, so long as these operations do not interfere with or delay the work being constructed under this Contract.

2.3 **OWNER'S RIGHT TO CARRY OUT THE WORK**

2.3.1 If the Contractor defaults or neglects to perform the Work in accordance with the Contract Documents, including the requirements with respect to the schedule of completion, and fails after ten days written notice from the Owner to correct the deficiencies, the Owner may deduct the cost thereof from the payment then or thereafter due the Contractor.

ARTICLE 3 -- CONTRACTOR

3.1 **GENERAL**

3.1.1 The Contractor shall perform the Work in accordance with the Contract Documents.

3.1.2 The Contractor shall furnish labor, materials, equipment, and transportation necessary for the proper execution of the work unless specifically noted otherwise. The Contractor shall do all the work shown on Drawings and described in Specifications and all incidental work considered necessary to complete the project in a substantial and acceptable manner, and to fully complete the work or improvement, ready for use, occupancy and operation by the Owner. Drawings and Specifications shall be interpreted by the Design Professional or the Owner if no Design Professional exists for the project.

3.1.3 The Contractor shall cooperate with the Owner, Design Professional, inspectors, and with other contractors on the Project. Contractor shall allow inspectors acting in an official capacity, to have access to the project site.

3.1.4 The Contractor shall determine that the final and completed work on the project is in accordance with the Contract Documents. The failure of the Design Professional to find or correct errors or omissions in the use of materials or work methods during the progress of the work shall not relieve the Contractor from his responsibility to correct all the defects in the project.

3.1.5 The Contractor shall assist in making final inspections and shall furnish such labor and equipment as may be required for the final tests of equipment, piping, and structures.

3.2 **REVIEW OF FIELD CONDITIONS**

3.2.1 Before ordering material or doing Work, the Contractor shall verify all measurements involved and shall be responsible for the correctness of same. No extra charge or compensation will be allowed on account of difference between actual dimensions and the measurements indicated on Drawings; differences which may be found, shall be submitted to Design Professional for consideration before proceeding with the Work.

3.2.2 Drawings may show the location or existence of certain exposed and buried utilities as well as existing surface and subsurface structures. The Owner assumes no responsibility for failure to show any or all such utilities and structures on the Drawings or to show such in the exact location. It is mutually agreed such failure will not be considered sufficient basis for claims for extra work or for

increasing the pay quantities in any manner unless the obstruction encountered necessitates substantial changes in the lines or grades or requires the building of a special structure.

3.3 REVIEW OF CONTRACT DOCUMENTS

- 3.3.1 The Contractor shall study and compare Drawings, Specifications, and other instructions and shall report to the Design Professional at once any error, inconsistency, or omission discovered.
- 3.3.2 In the event of conflict among the Contract Documents, interpretations will be based on the following order of precedence, stated highest to lowest:
- a. The Agreement
 - b. This Division Zero (0) shall control in the event of conflict between this Division Zero (0) and other Divisions 1 through 16
 - c. Addenda to Drawings and Specifications with those of later date having precedence.
 - d. Drawings and Specifications
- 3.3.3 Since the Contract Documents are complementary, the Contractor shall take no advantage of any apparent error or omission in the Drawings and Specifications. The Owner or Design Professional shall furnish interpretations as deemed necessary for the fulfillment of the intent of the Drawings and Specifications.
- 3.3.4 Discrepancies found between the Drawings and Specifications and actual site conditions or any errors or omissions in the Drawings or Specifications shall be immediately reported to the Design Professional or in the case where a Design Professional is not on the Project, the Owner shall be notified, who shall address such error or omission in writing. Work done by the Contractor after discovery of such discrepancies, errors, or omissions shall be at the Contractor's risk and expense.

3.4 REQUEST FOR SUPPLEMENTARY INFORMATION

- 3.4.1 The Contractor shall make timely requests of the Owner or Design Professional for additional information required for the planning and production of the Work. Such requests shall be submitted as required, but shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay. Contractor understands and agrees that it is Contractor's duty to determine the need for, and to request said additional information in writing from the Design Professional by such date as allows Design Professional to provide the information to the Contractor by a date that will not adversely affect Contractor's ability to complete the Work by the date specified in the Contract.
- 3.4.2 Additional instructions may be issued by the Design Professional during the progress of the Work to clarify the Drawings and Specifications or as may be necessary to explain or illustrate changes in the Work.

3.5 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- 3.5.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.
- 3.5.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

3.5.3 Samples are physical examples that illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.

3.5.4 The Contractor shall provide shop drawings and other submittals, settings, schedules, and other drawings as may be necessary for the prosecution of the Work in the shop and in the field as required by the Drawings, Specifications, or Design Professional instructions.

3.6 **LABOR AND MATERIALS**

3.6.1 Except as otherwise specifically stated in the Contract, the Contractor shall provide, but not be limited to, all materials, labor, tools, equipment, water, light, heating and cooling, power, transportation, superintendence, temporary construction of every nature, taxes legally collectible because of the work, and all other services and facilities of every nature whatsoever necessary to complete the Work in accordance with the Contract Documents in an orderly and efficient manner. The sequence of construction operations shall follow the schedule of construction as approved by the Design Professional. The Work shall not be discontinued by the Contractor without approval of the Design Professional. Should prosecution of the Work be discontinued for any reason, the Contractor shall notify the Design Professional at least twenty-four hours in advance of resuming the Work.

3.6.2 Materials and equipment furnished under this Contract will be subject to inspection by the Owner's authorized representative or by independent laboratories. Defective material, equipment, or workmanship may be rejected at any time before the acceptance of the Work even though the defective material, equipment, or workmanship may have been previously overlooked and estimated for payment. The Contractor shall replace defective equipment and material in accordance with the Contract Documents at no additional cost to the Owner.

3.6.3 The Contractor shall provide materials and supplies not subject to conditional sales agreements, or other agreement reserving unto the seller any right, title, or interest therein. All materials and supplies shall become the property of the Owner upon final acceptance of this Contract by the Owner.

3.6.4 If shop tests are to be conducted, the Contractor shall notify the Owner of such tests so a representative may witness tests, if desired.

3.6.5 The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Design Professional, and in accordance with a Change Order.

3.7 **UNAUTHORIZED WORK**

3.7.1 Work done without lines and grades having been given or work done beyond the lines or not in conformity with the grades shown on the Drawings or as provided by the Owner, except as provided herein, and work completed without proper inspection and supervision or any extra or unclassified work completed without written authority and prior agreement shall be at the Contractor's risk. Such unauthorized work, at the option of the Design Professional, may not be measured and paid for and may be ordered removed at the Contractor's expense.

3.8 **SUPERINTENDENCE**

3.8.1 The Contractor shall supervise and direct the Work. The Contractor shall be solely responsible for construction means, methods, techniques, sequences, and procedures and for coordinating portions of the Work under the Contract.

3.8.2 The Contractor shall employ a qualified superintendent during the duration of the Project who is acceptable to the Owner and the Design Professional. The superintendent shall be maintained on the Project site and shall be present on the site at all times work is in progress. The superintendent shall be capable of reading and understanding the Drawings and Specifications and shall have full

authority to act in behalf of the Contractor. All directions and instructions given to the Superintendent shall be considered as given to the Contractor and shall be as binding as if given to the Contractor.

- 3.8.3 Workmanship shall be performed by workmen experienced in their trade and skilled and experienced for the class of work to which assigned. Any person, including supervisory personnel, who does not show and exhibit skill and proficiency in said work shall be removed by the Contractor and replaced by a competent and experienced workman.
- 3.8.4 The Contractor shall, at all times, be responsible for the conduct and discipline of his employees and all Subcontractors and their employees. Disorderly, incompetent or intemperate persons, or persons who commit any crimes or trespass on public or private property in the vicinity of the Work must not be allowed to continue working upon the project which the Contractor has with the State. Any superintendent, foreman or workman employed by the Contractor or a Subcontractor who unreasonably refuses or neglects to comply with the instructions of the Owner, Design Professional, or inspector, shall, at the written request of the Owner or Design Professional, be removed from the work site and shall not be allowed to work further on any portion of the work without the approval of the Owner.
- 3.8.5 The Contractor shall coordinate Work by the various trades to provide uniform and symmetrical layout and spacing of the exposed components which will affect the finished design and appearance. Where spacing and related locations are not specifically shown on Drawings or where in doubt, the Contractor shall consult the Design Professional prior to installation of that part of the Work.

3.9 **PERMITS, FEES, AND NOTICES**

- 3.9.1 The Contractor shall purchase and secure all applicable permits and licenses and give all notices necessary and incidental to the prosecution of the Work. However, in accordance with Ark. Code Ann. §22-9-213, public works construction projects conducted by the Owner, a state agency, are exempt from permit fees or inspection requirements of county or municipal ordinances.
- 3.9.2 When new construction under the Contract crosses highways, railroads, streets or utilities under the jurisdiction of the state, county, city, or other public agency, public utility, or private entity, the Contractor shall secure written permission from the proper authority before executing such new construction. A copy of this written permission shall be filed with the Owner before any work is completed. The Contractor shall furnish a release from the proper authority before final acceptance of the Work. Any bonds required for this Work shall be secured and paid for by the Contractor.

3.10 **SAMPLES AND TESTS**

- 3.10.1 The Contractor shall provide samples, materials, and equipment necessary or required for testing as outlined in the various sections of the Specifications or as directed by the Owner. The Contractor shall pay all costs for testing. Should materials, methods, or systems fail to meet specified standards, the Contractor shall pay all costs for additional testing as required by the Owner.
- 3.10.2 All tests shall be made by a laboratory approved by the Owner.

3.11 **LOCATION, GRADIENT, AND ALIGNMENT**

- 3.11.1 Based upon the site information provided by the Owner, the Contractor shall develop and make detailed surveys necessary for construction including slope stakes, batter boards, and other working points, lines and elevations.
- 3.11.2 The Contractor shall report any errors, inconsistencies, or omissions to the Design Professional as a request for information.

3.11.3 The Contractor shall preserve benchmarks, reference points and stakes, and in the case of destruction thereof by the Contractor, shall be responsible for damage or mistakes resulting from unnecessary loss or disturbance.

3.12 **LAND**

3.12.1 Additional land and access thereto not shown on Drawings that may be required for temporary construction facilities or for storage of materials shall be provided by the Contractor at his expense with no liability to the Owner. The Contractor shall confine his equipment and storage of materials and the operation of his workmen to those areas shown on the Drawings and described in the Specifications, and such additional areas which he may provide or secure as approved by the Owner.

3.12.2 The Contractor shall not enter upon private property for any purpose without first obtaining permission.

3.12.3 The Contractor shall be responsible for the preservation of and prevent damage or injury to all trees, monuments, and other public property along and adjacent to the street and right-of-way. The Contractor shall prevent damage to pipes, conduits and other underground structures, and shall protect from disturbance or damage all monuments and property marks until an authorized agent has witnessed or otherwise referenced their location, and shall not remove monuments or property marks until directed.

3.13 **LIMITS OF WORK**

3.13.1 The Contractor shall conduct Work and operations so as to cause a minimum of inconvenience to the public. At any time when, in the opinion of the Owner or Design Professional, the Contractor is obstructing a larger portion of a road, street, or other public right-of-way than is necessary for the proper execution of the Work, the Design Professional may require the Contractor to finish the sections on which work is in progress before work is commenced on any new sections.

3.14 **WARRANTY**

3.14.1 The Contractor shall warrant that all Work, materials, and equipment furnished will be free from defects in design, materials, and workmanship and will give successful service under the conditions required. The warranty period for Work, materials, and equipment furnished by the Contractor shall be one year from the date of the written acceptance of the Work as stated in the Substantial Completion Form approved by the Contractor, Owner and the Design Professional, unless a longer period is agreed upon.

3.15 **PATENTS AND ROYALTIES**

3.15.1 If the Contractor is required or desires to use any design, device, material or process covered by letters, patent, or copyright, he shall provide for such use by suitable legal agreement with the patents or Owner. It is mutually understood and agreed that without exception the Contract Sum shall include all royalties or costs arising from patents, trademarks, and copyrights in any way involved in the Work. The Contractor and the surety shall defend, indemnify, and save harmless the Owner and all its officers, agents and employees from all suits, actions, or claims of any character, name and description brought for or on account of infringement or alleged infringement by reason of the use of any such patented design, device, material or process of any trademark or copyright used in connection with the Work agreed to be performed under this Contract, and shall indemnify the Owner for any cost, expense, or damage which it may be obliged to pay by reason of any action or actions, suit or suits which may be commenced against the Owner for any such infringement or alleged infringement at any time during the prosecution or after the completion of the Work contracted for herein. It is mutually agreed that the Owner may give written notice of any such suit to the Contractor, and thereafter, the Contractor shall attend to the defense of the same and save and

keep harmless the Owner from all expense, counsel fees, cost liabilities, disbursements, recoveries, judgments, and executions in any manner growing out of, pertaining to, or connected therewith.

3.16 CLEANING UP

- 3.16.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials.
- 3.16.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

ARTICLE 4 -- ADMINISTRATION OF CONTRACT

4.1 DESIGN PROFESSIONAL AUTHORITY

- 4.1.1 The Design Professional will interpret the requirements of the Contract Documents and decide matters concerning performance thereunder on request of the Owner or Contractor.
- 4.1.2 The Design Professional will provide administration of the Contract as described in the Contract Documents and will be the Owner's representative. The Design Professional will decide any and all questions as to the acceptability of materials or equipment furnished, work performed, interpretation of the Drawings and Specifications, rate of progress of the Work, acceptability of the quality of workmanship provided, and other questions as to the fulfillment of the Contract by the Contractor.
- 4.1.3 The Design Professional will prepare all change orders on the form specified by the Owner. The Design Professional may authorize minor changes in the Work not involving adjustment in Contract Sum or extension of Contract Time and not inconsistent with the intent of the Contract Documents.
- 4.1.4 The Design Professional Design Professional and his authorized representatives and the Owner will have the right to enter the property or location on which the Work shall be constructed.

4.2 CLAIMS

- 4.2.1 Definition: A claim is a demand or assertion by one of the parties seeking adjustment, or interpretation of Contract terms, payment of money, extension of time, or other relief with respect to the terms of the Contract. The term includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims will be initiated by written notice. The responsibility to substantiate claims shall rest with the party making the claim.
- 4.2.2 Claims of the Contractor or the Owner: Claims regarding the Work of the Contract shall be referred initially to the Design Professional for a decision. The Design Professional will review claims, and 1) reject in whole or in part; 2) approve the claim; 3) suggest a compromise; 4) advise the parties that the Design Professional is unable to resolve the claim.
- 4.2.3 Claims for Concealed or Unknown Conditions: If new and unforeseen items of work are discovered, which cannot be covered by any item or combination of items for which there is a Contract Sum, then the Contractor shall notify the Design Professional as quickly as reasonably possible and shall not continue working on the discovered new or unforeseen items without express written permission from the Design Professional. The Contractor shall complete such work and furnish such materials as may be required for the proper completion or construction of the work contemplated upon written Change Order from the Design Professional as approved by the Owner. Work shall be performed in accordance with the Contract Documents.

- 4.2.4 Claims for Extensions of Time: The Contractor shall provide written notice to Design Professional within ten days stating the cause of the delay and request an extension of Contract Time. The Design Professional will act on the request in writing. The extension of time shall be for a period equivalent to the time lost by reasons indicated. No extension of time shall be effective until included in a Change Order approved by the Owner and Design Professional.
- 4.2.5 Claims for Changes in the Work: The Contractor shall provide written notice to Design Professional within ten calendar days after the receipt of instructions from the Owner, as approved by the Design Professional, to proceed with changes in the Work and before such Work is commenced. Changes in the Work shall not be commenced before the claim for payment has been approved, except in emergencies endangering life or property. The Contractor's itemized estimate sheets showing labor and material shall be submitted to the Design Professional. The Owner's order (Change Order) for changes in the Work shall specify any extension of the Contract Time and one of the following methods of payment:
- a. Unit prices or combinations of unit prices, which formed the basis of the original Contract.
 - b. A lump sum fee based on the Contractor's estimate, approved by the Design Professional and accepted by the Owner.
 - c. The actual cost of the Work plus an allowance of 12 percent and 5 percent for the General Contractor and Subcontractor, respectively.
- 4.2.6 Claims for Additional Costs: In case of an emergency which threatens loss or injury of property or safety of life, the Contractor shall be allowed to act, without previous instructions from the Design Professional, in a diligent manner. The Contractor shall notify the Design Professional immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted, but in no case more than 7 calendar days following the event causing the emergency, to the Design Professional for consideration. The amount of reimbursement claimed by the Contractor on account of any emergency action shall be determined in the manner provided under these General Conditions. No agreement to pay costs for additional work shall be effective until included in a Change Order approved by the Owner, Contractor and the Design Professional.

ARTICLE 5 -- SUBCONTRACTORS

5.1 ASSIGNMENT OF CONTRACT

- 5.1.1 Neither the Owner nor the Contractor shall have the right to sublet, sell, transfer, assign, or otherwise dispose of the "Contract" or any portion thereof without written consent of the other party. No assignment, transfer, or subletting, even with the proper consent, shall relieve the Contractor of his liabilities under this Contract. Should any Assignee or Subcontractor fail to perform the work undertaken by him in a satisfactory manner, the Owner, has the right to annul and terminate the Assignee's or Subcontractor's contract on the project.

5.2 SUBCONTRACTS

- 5.2.1 The subcontracting of the whole or any part of the Work to be done under this Contract will not relieve the Contractor of his responsibility and obligations. All transactions of the Owner or Design Professional shall be with the Contractor. Subcontractors will be considered only in the capacity of employees or workmen and shall be subject to the same requirements as to character and competency.
- 5.2.2 The Contractor shall discharge or otherwise remove from the project any Subcontractor that the Owner or the Design Professional has reasonably determined as incompetent or unfit.

- 5.2.3 The Contractor may not change those Subcontractors listed on the proposal without the written approval of the Owner and Design Professional. The Contractor shall not be relieved of any liabilities under this Contract, but shall be fully responsible for any Subcontractor or work by said Subcontractor where Subcontractor is employed by the Contractor to perform work under this Contract. Nothing contained in the Contract Documents shall create contractual relations between any Subcontractor and the State.
- 5.2.4 No officer, agent, or employee of the Owner, including the Design Professional, shall have any power or authority to bind the Owner or incur any obligation in his behalf to any Subcontractor, material supplier or other person in any manner whatsoever.

ARTICLE 6 - CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OTHER CONTRACTS

- 6.1.1 The Owner reserves the right to award other contracts in connection with the Project. The Contractor shall cooperate with the other contractors with regard to the storage of materials and equipment, access to the site, and execution of their work. It shall be the Contractor's responsibility to inspect the work of other contractors which will affect the work of this Contract and to report to the Owner irregularities which will not permit him to complete his work in a satisfactory manner or in the time allotted. Failure to so report shall constitute an acceptance of the work of other contractors.

6.2 DEPENDENCE ON OTHERS

- 6.2.1 If any part of the Contractor's work depends for proper execution or results upon the work of the Owner or any separate contractor, the Contractor shall, prior to proceeding with the work, promptly report to the Design Professional any apparent discrepancies or defects in such other work that render it suitable for such proper execution and results. Failure of the Contractor to so report shall constitute an acceptance of the work.

ARTICLE 7 -- CHANGES IN THE WORK

7.1 GENERAL

- 7.1.1 The Owner may, as the need arises, without invalidating the Contract, order changes in the work in the form of additions, deletions, or modifications. Compensation to the Contractor for additional work or to the Owner for deductions in the work and adjustments for the time of completion shall be adjusted at the time of ordering such change.
- 7.1.2 Additional work shall be done as ordered in writing by the Owner. The order shall state the location, character, and amount of extra work. All such work shall be executed under the conditions of the Contract, subject to the same inspections and tests.
- 7.1.3 The Design Professional and the Owner reserve and shall have the right to make changes in the Contract Documents and the character or quantity of the work as may be considered necessary or desirable to complete fully and acceptably the proposed construction in a satisfactory manner.

7.2 CHANGE ORDERS

- 7.2.1 A Change Order is a written instrument, prepared by the Design Professional and approved by the Owner stating their agreement upon the following, separately or in any combination thereof:
- a. Description and details of the work.

- b. Amount of the adjustment in the Contract Sum.
- c. Extent of the adjustment in the Contract Time.
- d. Terms and conditions of the Contract Documents.

7.2.2 Change Order requests by the Contractor shall be submitted in a complete itemized breakdown, acceptable to the Owner and the Design Professional.

7.2.2.1 Where unit prices are stated in the Contract, Contractor should submit an itemized breakdown showing each unit price and quantities of any changes in the Contract Amount. The value of all such additions and deductions shall then be computed as set forth in Paragraph 7.2.2.3.

7.2.2.2 The Contractor shall present an itemized accounting together with appropriate supporting data for the purposes of considering additions or deductions to the Contract Amount. Supporting data shall include but is not limited to the following:

- a. Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and worker or workmen's compensation insurance;
- b. Cost of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- c. Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- d. Costs of premiums for all bonds and insurance, permit fees, and sales, use of similar taxes related to the Work; and
- e. Additional costs of supervision and field office personnel directly attributable to the change.

The burden of proof of cost rests upon the Contractor. Contractor agrees that Owner or Owner's Representative shall have the right, at reasonable times, to inspect and audit the books and records of Contractor to verify the propriety and granting of such cost.

7.2.2.3 Compute requests for changes be they additions or deductions as follows:

- a. For work performed by the Contract:

| | |
|--------------------------------------|--------------------|
| Net Cost of Materials | a |
| State Sales Tax | b |
| Net Placing Cost | c |
| W.C. Insurance Premium and FICA Tax | <u>d</u> |
| | a+b+c+d |
| Overhead and Profit, 12% x (a+b+c+d) | e |
| Allowable Bond Premium | <u>f</u> |
| TOTAL COST | a+b+c+d+e+f |

- b. Credit for work deleted shall be computed as outlined in 7.2.2.3 a. through e., except the Contractor's share of overhead and profit percentage is seven percent.
- c. For added work performed by Subcontractors: Subcontractors shall compute their work as outlined in 7.2.2.3 a. through e. To the cost of that portion of the work (Change) that is performed by the Subcontractor, the Contractor shall add an Overhead and Profit Change of five percent plus the Allowable Bond Premium.

- d. For work deleted by a Subcontractor: Subcontractors shall compute their work as outlined in 7.2.2.3 a through e, except that the overhead and profit shall be seven percent and the Contractor's overhead and profit shall be five percent.

7.3 PAYMENT FOR CHANGES IN THE WORK

- 7.3.1 All changes in the Work will be paid for in the manner indicated in Article 4, Paragraph 4.2, and the compensation thus provided shall be accepted by the Contractor as payment in full for the use of small tools, superintendent's services, premium on bond, and all other overhead expenses incurred in the prosecution of such work.
- 7.3.2 The Owner shall not be deemed to have agreed to any costs for additional work, to have agreed to additional time for completion, or to have agreed to any other change in the terms and conditions of the Contract Documents until Owner, Design Professional and Contractor have executed a Change Order to this Contract.

ARTICLE 8 -- TIME

8.1 DEFINITIONS

- 8.1.1 Contract Time is the period of time identified in the Contract Documents for Substantial Completion of the Work, including authorized adjustments made as part of Change Orders agreed to by the Owner, the Design Professional and the Contractor.
- 8.1.2 Date for commencement of the Work is the fifth calendar day following the date of mailing, by regular mail, of the Notice to Proceed, unless otherwise stated in the Contract.
- 8.1.3 Date of Substantial Completion is the date certified by the Design Professional and the Owner.

8.2 PROGRESS

- 8.2.1 Time limits identified in the Contract Documents are of the essence of the Contract. The Contractor confirms that the Contract Time is a reasonable period of time for performing the Work.

8.3 HOLIDAYS

- 8.3.1 New Year's Day, Robert E. Lee/Dr. Martin Luther King's Birthday, President's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and the day thereafter, Christmas Eve and Christmas Day will be considered as being legal holidays; no other days will be considered unless declared by the Governor of the State of Arkansas through an Executive Order or Proclamation. No Design Professional clarifications, observations, or State inspections will be provided on legal holidays, Saturdays and Sundays, and no work shall be performed on these days except in an emergency or with written approval in advance by the Design Professional and Owner.

8.4 DELAYS

- 8.4.1 Delays beyond the Contractor's control occasioned by an act or omission on the part of the Owner, strikes, fires, additions to the work, delays by any separate contractor employed by the Owner, extremely abnormal weather conditions, or other delays beyond the Contractor's control may, if agreed to by Change Order by the Contractor, Owner and Design Professional entitle the Contractor to an extension of time in which to complete the work. While such delays may be just cause for an extension of the Contract Time, the Contractor shall not have a claim for damages for any such cause or delay.

ARTICLE 9 -- PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

- 9.1.1 The Contractor shall accept the compensation, as herein provided, in full payment for furnishing all materials, equipment, labor, tools, and incidentals necessary to complete the Work and for performing all Work contemplated and embraced under the Contract; also for loss or damage arising from the nature of the Work, from the action of the elements or from any unforeseen difficulties which may be encountered during the prosecution of the Work until the final acceptance by the Design Professional and Owner and for all risks of every description connected with the prosecution of the Work, for all expenses incurred in consequence of the suspension or discontinuance of the Work as specified, for any infringement of patent, trademark, or copyright, and for completing the Work according to the Contract Documents. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material.
- 9.1.2 No moneys payable under Contract or any part thereof, except the estimate for the first month or period, shall become due and payable if the Owner so elects until the Contractor shall satisfy the said Owner that he has fully settled or paid for all materials and equipment used in or on the Work and labor done in connection therewith, and the Owner, if he so elects, may pay any or all such bills wholly or in part and deduct the amount or amounts so paid from any monthly or final estimate excepting the first estimate.
- 9.1.3 In the event the surety on any contract or payment bond given by the Contractor becomes insolvent, or is placed in the hands of a receiver, or has the right to do business in a state revoked as provided by law, the Owner may at its election withhold payment of any estimate filed or approved by the Design Professional until the Contractor shall give a good and sufficient bond in lieu of the bond so executed by such surety. Any and all subsequent bonds shall be filed with the Circuit Clerk of the County in which the Work is being performed.

9.2 SCHEDULE OF VALUES

- 9.2.1 The Contractor shall submit to the Design Professional a schedule of values for each part of the Work. The schedule shall be a complete breakdown of labor and materials for the various parts of the Work including an allowance for profit and overhead. The total of these amounts shall equal the Contract Sum. The approved schedule of values shall be used as a basis for the monthly payments to the Contractor. In applying for the monthly payment, the Contractor shall show a detailed account of work accomplished in conformity with the schedule.

9.3 MEASUREMENT OF QUANTITIES

- 9.3.1 The Contractor shall be paid for all Work performed under the Contract based on Design Professional computations of as-built quantities and the Contractor's Contract Sum. This payment shall be full compensation for furnishing all supplies, materials, tools, equipment, transportation, and labor required to do the Work; for all loss or damage, because of the nature of the Work, from the action of the elements or from any unforeseen obstruction or difficulty which may be encountered in the prosecution of the Work and for which payment is not specifically provided for all or any part of the Work; and for well and faithfully completing the Work in accordance with the Contract Documents. The method of computation and payment for each item shall be as set forth in the Specifications or the Supplementary Conditions.

9.4 **REQUESTS FOR PAYMENT**

- 9.4.1 The Contractor may submit periodically, but not more often than once each month, a Request for Payment for work completed. When unit prices are specified in the Contract Documents, the Request for Payment shall be based on the quantities completed.
- 9.4.2 Unless otherwise provided in the Contract Documents, payments will be made on account of materials or equipment not incorporated in the Work but delivered and suitably stored at the site, and if approved in advance by the Owner, payments may similarly be made for materials or equipment suitably stored at some other location agreed upon in writing. Payments for materials or equipment stored on or off the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner and the Design Professional to establish the Owner's title to such materials or equipment or otherwise protect the Owner's interest including applicable insurance and transportation to the site for those materials and equipment stored off the site.
- 9.4.3 The Contractor shall furnish the Design Professional all reasonable facilities and job tickets required for obtaining the necessary information relative to the progress and execution of the Work and the measurement of quantities. Each Request for Payment shall be computed from the work completed on all items listed in the approved schedule of values less 10 percent of the first 50 percent of the adjusted Contract Sum and less previous payments to the Contractor on the Contract.

9.5 **PERIODIC ESTIMATES FOR PAYMENT**

- 9.5.1 Unless otherwise stated in the Specifications or Supplementary Conditions, the Owner shall cause the Design Professional to prepare an Estimate for Payment to the Contractor each month. The Design Professional will make the estimate for the materials complete in place and the amount of work performed in accordance with the Contract between the twenty-fifth day of the month and the fifth day of the succeeding month.
- 9.5.2 From the total of the amount estimated to be paid, an amount equal to 10 percent of the total completed shall be retained until the Contract is 50 percent complete after which no further retainage will be withheld from the monthly estimates. All sums withheld by the Owner and requested in a Final Pay Request prepared by the Contractor will be paid to the Contractor within 30 days after the Contract has been completed and the work approved by the Owner and the Design Professional. No retainage will be withheld on that amount of the progress payment pertaining to the cost of materials stored at the site or within a bonded warehouse.

9.6 **PAYMENT FOR INCREASED OR DECREASED QUANTITIES**

- 9.6.1 When alterations in the quantities of work not requiring Contract modifications are ordered and performed, the Contractor shall accept payment in full at the Contract Sum, for the actual quantities of work accomplished. No allowance will be made for anticipated profits. Increased or decreased work involving Contract modifications shall be paid for as stipulated in such Contract modifications

9.7 **DESIGN PROFESSIONAL'S ACTION ON A REQUEST FOR PAYMENT** (See also 9.10)

- 9.7.1 The Owner shall cause the Design Professional to, within five working days plus time required for transmittal from one party to another, act on a Request for Payment by the Contractor in one of the following:
- a. Approve the Request for Payment as submitted by the Contractor, and transmit same to the Owner.

- b. Approve an adjusted amount as the Design Professional will decide is due the Contractor informing the Contractor in writing of the reason for the adjusted amount, and transmit same to the Owner.
- c. Withhold the Request for Payment submitted by the Contractor informing the Contractor and the Owner in writing of the reason for withholding the request.

9.8 OWNER'S ACTION ON A REQUEST FOR PAYMENT (See also 9.10)

9.8.1 The Owner will, within ten working days plus transmittal time between the various state agencies involved, act on a Request for Payment after approval by the Design Professional by one of the following:

- a. Approve the Request for Payment as approved by the Design Professional, and forward the Pay Request to the Owner's Contract Administrator in Finance for review and approval prior to submission to Owner's Accounts Payable for payment.
- b. Approve payment of an adjusted amount as the Owner will decide is due the Contractor, informing the Contractor and the Design Professional in writing of the reason for the adjusted amount of payment.
- c. Withhold the Request for Payment informing the Contractor and the Design Professional in writing of the reason for withholding the payment.

9.9 ARKANSAS STATE AGENCIES ACTION ON A REQUEST FOR PAYMENT

9.9.1 The State shall process payments in accordance with Ark. Code Ann. §19-4-1411, or as modified by subsequent law, which establishes the time limits for the Design Professional, the Owner and the Department of Finance and Administration. It also authorizes the Chief Fiscal Officer of the State to investigate any complaints of late payments and assess penalties for late payment. Complaints shall be addresses to "Chief Fiscal Officer of the State: Department of Finance and Administration; 1509 West Seventh Street, Suite 401; Post Office Box 3278; Little Rock, AR 72203-3278.

9.10 WITHHOLDING PAYMENT

9.10.1 The Design Professional or the Owner may withhold payment for contested issues, including but not limited to, defective work on the project; evidence indicating the probable filing of claims by other parties against the Contractor related to the project; damage caused to another contractor; reasonable evidence that Work cannot be completed for the unpaid balance of the Contract Sum or within Contract Time or failure of the Contractor to make payments on materials, equipment or labor to subcontractors. It is the responsibility of the contesting party to notify the Contractor in writing that payment has been contested and the reasons why. The notification must be done within the timeframe specified for processing of payment under Ark. Code Ann. §19-4-1411.

9.11 PAYMENT FOR UNCORRECTED WORK

9.11.1 Should the Design Professional direct the Contractor not to correct work that has been damaged or that was not performed in accordance with the Contract Documents, an equitable deduction from the Contract Sum shall be made to compensate the Owner for the uncorrected work. The Design Professional shall determine the amount of the equitable deduction.

9.12 PAYMENT FOR REJECTED MATERIALS AND WORK

9.12.1 The removal of rejected Work and materials and the re-execution of acceptable work by the Contractor shall be at the expense of the Contractor. The Contractor shall pay the cost of replacing the work of other contractors destroyed or damaged by the removal of the rejected work or materials and the subsequent replacement with acceptable work.

9.13 DATE OF SUBSTANTIAL COMPLETION

9.13.1 A Certificate of Substantial Completion, which shall establish the Date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to work, and insurance and shall fix the time within which the Contractor shall complete the items listed therein. Warranties required by the Contract Documents shall commence on the Date of Substantial Completion, unless another timeframe is stated in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall not become effective until approved by the Owner and the Design Professional.

9.14 FINAL COMPLETION AND PAYMENT BY OWNER

9.14.1 The Contractor shall furnish a letter from the Design Professional attached to the Contractor's final estimate, which shall include all retainage withheld, certifying that the Design Professional has received and approved all guarantees, bonds, maintenance and operation manuals, air balance data, shop drawings, catalog data, and record documents specified in the Contract Documents.

9.14.2 Before final payment, the Contractor shall furnish to the Design Professional executed copies of the Release of Claims and Consent of the Performance and Payment Bond Surety for Final Payment. Items listed in this Section Nine (9) shall be submitted with and at the same time as the final estimate to the Design Professional and shall be promptly delivered by the Design Professional to the Owner. No final payment or release of retained amounts shall be made without complete compliance with this Section Nine (9), and approval by the Owner of the Final Pay Request, which shall include payment of all retained amounts,

9.14.3 Any claim by the Contractor to the Owner for interest on a delinquent final payment shall only be made pursuant to Ark. Code Ann. § 22-9-205.

9.15 PARTIAL OCCUPANCY OR USE

9.15.1 The Owner may occupy or use any completed or partially completed portion of the Work provided such use or occupancy is consented to by the insurer and authorized. The Contractor will prepare a list of items to be completed or corrected before partial acceptance. Upon receipt of the Contractor's list, the Design Professional will make an inspection to determine whether the Work or portion thereof is substantially complete. No portion of the work shall be considered substantially complete unless described in a Certificate of Substantial Completion Form approved by the Contractor, Owner and the Design Professional.

9.15.2 The Design Professional will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to Work and insurance, identify work items to be corrected or completed by the contractor and shall fixing the time within which the Contractor shall complete the items listed therein. Warranties required by the Contract Documents shall commence on the Date of Substantial Completion, unless another timeframe is stated in the Certificate of Substantial Completion. No retained amounts shall be paid until the Contractor, Design Professional and the Owner approve a Certificate of Substantial Completion for all of the Work unless specifically provided for by this contract, and all other conditions for final acceptance of this Work are met to the satisfaction of the Owner.

9.15.3 Instances where some of the Work is “sectioned” out and substantially completed, the retained amounts shall not be paid until the final Certificate of Substantial Completion of the entire Work is approved by the Contractor, Design Professional, and the Owner and all other conditions of this Section Nine (9) are met by the Contractor.

9.16 **FINAL INSPECTION**

9.16.1 Tests, inspections, and approvals of portions of the Work required by the Contract Documents, laws, ordinances, or any public authority having jurisdiction shall be made at the appropriate time. The Contractor shall give the Design Professional timely notice of when and where tests and inspections shall be made so that the Design Professional may be present. The Contractor shall make arrangements for the testing and inspection with an independent testing laboratory.

9.16.2 The Contractor shall ensure that the final completed work is in accordance with the Contract Documents. Required certificates of testing and inspection shall be secured by the Contractor and delivered to the Design Professional, unless otherwise required by the Contract Documents.

9.17 **ASSIGNMENT OF WARRANTIES**

9.17.1 All warranties of materials and workmanship running in favor of the Contractor shall be transferred and assigned to the Owner on completion of the Work and at such time as the Contractor receives final payment.

9.17.2 In case of warranties covering work performed by subcontractors, such warranties shall be addressed to and in favor of the Owner. The Contractor shall be responsible for delivery of such warranties to the Owner prior to final acceptance of the work.

9.17.3 Delivery of guarantees or warranties shall not relieve the Contractor from any obligation assumed under any provision of the Contract. All warranties shall be for one year from the date of Substantial Completion of the Project, unless extended otherwise.

9.18 **ACCEPTANCE AND FINAL PAYMENT**

9.18.1 Upon receipt of written notice that the Work is ready for final inspection, the Design Professional together with the Owner will conduct such inspection and when the Design Professional determines the work is acceptable to the Design Professional and the Owner, the Design Professional shall certify his acceptance to the Owner. Final Payment shall be the Contract Sum plus approved Change Order additions less approved Change Order deductions and less previous payments made. The Contractor shall furnish evidence that he has fully paid all debts for labor, materials, and equipment incurred in connection with the Work. The Owner, upon approval by the Design Professional of all documentation to be provided by the contractor in accordance with this Section 9, and approval by the Design Professional, Contractor and Owner of the Certificate of Substantial Completion will accept the Work and release the Contractor, except as to the conditions of the Performance and Maintenance Bond, any legal rights of the Owner, required guarantees and correction of faulty work after Final Payment, and shall authorize payment of the Contractor's final Request for Payment. The Contractor must allow sufficient time between the time of completion of the work and approval of the final Request for Payment for the Design Professional to assemble and check the necessary data.

9.18.2 Acceptance of final payment by the Contractor shall constitute waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final Request for Payment. Any claims for interest on delinquent payments shall be made pursuant to Ark. Code Ann. § 22-9-205.

ARTICLE 10 -- PROTECTION OF PERSONS AND PROPERTY

10.1 GENERAL

- 10.1.1 The Contractor shall at all times exercise precaution for the safety of employees on the Project and of the public, and shall comply with all applicable provisions of federal, state and municipal safety laws and applicable building and construction codes. The Contractor shall provide and maintain passageways, guard fences, lights, and other facilities for protection required by all applicable laws. All machinery, equipment, and other physical hazards shall be guarded in accordance with all federal, state or municipal laws or regulations.
- 10.1.2 The Work, from commencement to completion, and until written acceptance by the Design Professional, and the Owner or to such earlier date or dates when the Owner may take possession and control in accordance with Section Nine (9) of these General Conditions, shall be under the charge and control of the Contractor and during such period of control by the Contractor, all risks in connection therewith shall be borne by the Contractor. The Contractor shall make good and fully repair all damages to the Project by reason of the Contractor's negligence, and make good on all injuries to persons caused by any casualty or cause by reason of the Contractor's negligence. The Contractor shall adequately protect adjacent Property as provided by law and the Contract Documents. The Contractor shall hold the Owner harmless from any and all claims for injuries to persons or for damage to property during the control by the Contractor of the project or any part thereof.
- 10.1.3 The Contractor shall at all times so conduct the Work as to ensure the least possible obstruction to traffic, to the general public, and the residents in the vicinity of the Work, and to ensure the protection of persons and property. No road, street, or highway shall be closed to the public except with the permission of the Owner and proper governmental authority. Fire hydrants on or adjacent to the Work shall be kept accessible to fire fighting equipment at all times. The local fire department shall be notified of the temporary closing of any street.

ARTICLE 11 -- INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

- 11.1.1 The Contractor shall secure and maintain in force during this Contract such insurance as is specified within the Contract Documents, from an insurance company authorized to write the prescribed insurance in the jurisdiction where the Project is located as will protect the Contractor, his subcontractors, and the Owner from claims for bodily injury, death, or property damage which may arise from operations under this Contract. The Contractor shall not commence work under this Contract until he has obtained all the insurance required, has filed the Certificate of Insurance with the Owner, and the certificate has been approved by the Owner. Each insurance policy shall contain a clause providing that it shall not be canceled by the insurance company without written notice to the Owner of intention to cancel.
- 11.1.2 Workman's Compensation and Employer's Liability Insurance in statutory limits shall be secured and maintained as required by the laws of the State of Arkansas. This insurance shall cover all employees who have performed any of the obligations assumed by the Contractor under these Contract Documents including Employer's Liability Insurance. This insurance shall protect the Contractor against any and all claims resulting from injuries, sickness, disease, or death to employees engaged in work under this Contract.
- 11.1.3 Comprehensive General Liability Insurance, including automobile and truck liability. Prior to blasting, the Contractor shall furnish Certificate of Insurance, which shall certify that damage caused by blasting is within the coverage of his Comprehensive General Liability Insurance to the full limits

thereof. Hired and non owned automobile insurance for automobiles and trucks shall include hired and non owned automobile coverage.

- 11.1.4 Contractor's Protective Liability Insurance: The Contractor shall indemnify and save harmless the Owner from and against all losses and all suits, claims, demands, judgments, actions, and payments of every description and nature brought or recovered against him by reason of any omission or act of the Contractor, his agents, or employees in the execution of the Work or in the guarding of it. The Contractor shall secure and maintain protective liability insurance in the name of the Owner and the Contractor covering them from contingent liability under this Contract.
- 11.1.5 Builder's Risk and Fire Insurance: The Contractor shall procure and maintain during the life of this Contract Builder's Risk Insurance fire, lightning, extended coverage, vandalism, and property theft on the insurable portion of the Project on a 100 percent completed value basis against damage to the equipment, structures, or material. The Owner and the Contractor, as their interests may appear, shall be named as the Insured.
- 11.1.6 Proof of Insurance: The Contractor shall maintain the insurance coverages required by this contract (**see Supplemental Conditions for required coverages**) throughout the term of this contract, and shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be canceled, or materially altered except after 15 days prior written notice has been received by the Owner."

11.2 **BONDS**

- 11.2.1 Performance and Payment Bond: The Contractor shall, at the time of execution of the Contract, furnish a bond covering faithful performance of the Contract and the payment of obligations. The Performance and Payment bonds, and any amendments thereto, shall be filed with the circuit clerk office in the County Courthouse of the county where the work shall be performed. For any increases to the contract amount, scope of work, time for completion or other terms relating to the Change Order, the Contractor may be required by Owner to furnish an amendment to the Bond agreement in which the Surety has agreed to amend the Performance and Payment Bond to reflect such revisions.

ARTICLE 12 -- UNCOVERING AND CORRECTION OF WORK

12.1 **EXAMINATION OF COMPLETED WORK**

- 12.1.1 If any portion of the work should be covered contrary to the request of the Owner, Design Professional, or Inspector or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Owner, Design Professional, or Inspector, be uncovered for his observation and replaced at the Contractor's expense.

12.2 **DEFECTIVE WORK**

- 12.2.1 Defective work, whether through the use of defective materials, the result of poor workmanship, or any other cause, shall be removed within ten days after notice is given by the Owner or Design Professional. The Work and affected materials and equipment shall be removed and replaced as necessary to comply with the Contract Documents without additional cost to the Owner. The fact that the defective work may have been previously overlooked by the Design Professional shall not constitute acceptance.

12.3 REJECTED MATERIALS

- 12.3.1 Materials which do not conform to the requirements of the Contract Documents, are not equal to samples approved by the Design Professional, or are in any way unsuited or unsatisfactory for the purpose for which intended, shall be rejected. Defective materials shall be removed within ten days after notice by the Design Professional. The materials shall be replaced with new materials as necessary to comply with the Contract Documents at no additional cost to the Owner. The fact that the defective material may have been previously overlooked by the Design Professional shall not constitute acceptance.
- 12.3.2 Should the Contractor fail to remove and replace rejected material within the specified ten days after written notice to do so, the Owner may remove and replace the material and deduct the cost from the Contract Sum.

12.4 CORRECTION OF FAULTY WORK AFTER FINAL PAYMENT

- 12.4.1 The approval of the final Contractor's Request for Payment by the Design Professional and the making of the final payment by the Owner to the Contractor shall not relieve the Contractor of responsibility to correct faulty materials or workmanship promptly after receipt of written notice from the Owner. The Owner shall give such notice of faulty materials or workmanship promptly, after discovery of the condition. If the Contractor fails to correct the defects, promptly, after receipt of written notice from Owner, the Owner may have the work corrected at the Contractor's expense.

ARTICLE 13 -- MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

- 13.1.1 The Contract shall be governed by the laws and regulations of the STATE OF ARKANSAS. Venue for any administrative action or judicial proceedings shall be Pulaski County, Arkansas. Nothing in these General Conditions shall be construed to waive the sovereign immunity of the STATE OF ARKANSAS or any entities thereof.
- 13.1.2 The Contractor shall give all notices and comply with all federal, state, and local laws, ordinances, and regulations in any manner affecting the conduct of the Work. The Contractor shall indemnify and save harmless the Owner against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree whether by himself or his employees.
- 13.1.3 The Contractor shall comply with the laws of the local, state, and federal government regarding wages and hours of labor.

13.2 WRITTEN NOTICE

- 13.2.1 Consider as served when delivered in person or sent by certified or registered mail to the individual, firm, or corporation or to the last business address of such known to him who serves the notice.
- 13.2.2 The written Notice to Proceed with the Work shall be issued by the Design Professional after the execution of the Contract by the Owner. The Contractor shall begin and prosecute the Work and uninterruptedly in a manner that will complete the Work within the time limits stated in the Contract.

13.3 TESTS AND INSPECTIONS

- 13.3.1 All materials and each and every part of the Work shall be subject at all times to inspection by the Owner, Design Professional, or the Inspector. The Contractor shall be held to the intent of the Contract Documents in regard to quality of materials, equipment, and workmanship, and the diligent execution of the Contract. The inspection may extend to and include plant, shop, or factory

inspection of material furnished. The Contractor agrees to allow Federal or State inspectors, acting in an official capacity, to have access to the job site.

13.3.2 The Owner, Design Professional, and Inspectors shall be allowed access to all parts of the Work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection for ascertaining if the Work as performed is in accordance with the requirements and the Contract Documents.

13.3.3 Inspectors shall only have authority to suspend any work in a life threatening situation which is being improperly done, subject to the final decision of the Owner or Design Professional. Inspectors shall have no authority to permit deviations, or to relax provisions of the Contract Documents without the written permission or instruction of the Owner and the Design Professional, or delay the Contractor by failing to work with reasonable promptness.

13.4 **VERBAL AGREEMENTS**

13.4.1 No verbal objection, order, claim, or notice by any of the parties involved to the other parties shall affect or modify any of the terms or obligations contained in the Contract Documents. None of the terms or provisions of the Contract Documents shall be considered waived or modified unless the waiver or modification thereof is in writing, and agreed upon by the parties in the form of a Change Order approved by the Owner, Design Professional and the Contractor and no evidence shall be introduced in any proceeding of any other waiver or modification.

ARTICLE 14 -- TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 **SUSPENSION OF WORK**

14.1.1 The work or any portion thereof may be suspended at any time by the Owner provided that the Owner gives the Contractor written notice of the suspension. The notice shall set forth the date on which the work is to be suspended and the date on which the work is to be resumed. The Contractor shall resume the work upon written notice from the Owner within ten days after the date set forth in the notice of suspension.

14.1.2 The Owner will have the authority to suspend the work, wholly or in part, for such period of time as deemed necessary. The suspension may be due to unsuitable weather, or such other conditions as are considered unfavorable for the proper prosecution of the work, or the failure on the part of the Contractor to fulfill the provisions of the Contract. Failure to supply material, equipment, or workmanship meeting the requirements of the Contract Documents shall be just cause for suspension of the Work. The Contractor shall not have the right to suspend operations without the Design Professional or Owner's permission.

14.2 **TERMINATION BY OWNER FOR CAUSE**

14.2.1 The Owner will have the right to terminate the Contract upon giving ten days written notice of the termination to the Contractor and the Contractor's surety, in the event of any default by the Contractor and upon written notice from the Design Professional to the Owner that sufficient cause exists to justify such action. In the event of termination of the Contract, the Owner may take possession of the Work and of all materials, tools, and equipment and construction equipment and machinery thereon and may finish the work by whatever method he may select. If the Owner does not elect to use his own forces, the surety shall furnish a competent licensed contractor within 10 working days from the written notice to the surety.

14.2.2 It shall be considered a default by the Contractor whenever he shall become insolvent; declare bankruptcy assigns assets for the benefit of his creditors; fails to provide qualified superintendence, proper materials, competent subcontractors, competent workmen; fails to make prompt payments

for labor, materials, or equipment; disregards or violates provisions of the Contract Documents; disregards the Owner's or the Design Professional's instructions; fails to prosecute the Work according to the approved schedule of completion, including extensions thereof as provided for by approved Change Orders; and fails to start the Work on the date established in the Notice to Proceed.

ARTICLE 15 – ALTERNATIVE DISPUTE RESOLUTION

15.1 MEDIATION

15.1.1 In the event of any dispute regarding the Contractor, Architect, Engineer, and/or Owner (hereinafter referred to as party/parties for this section only) under this Agreement, the party shall notify the appropriate Owner's Administrator in writing. The Owner's Administrator or his designee will then attempt to negotiate a settlement of the dispute between the parties.

15.1.2 If the Owner's Administrator, or designee, determines he is unable to negotiate a settlement between the parties, the parties may participate in mediation. A request for mediation must be made in writing to the Owner and the parties shall agree upon the location of the mediation. A Mediator mutually agreed upon by the parties shall conduct the mediation process. Mediation shall be voluntary, non-binding and all proceedings in connection with such shall be subject to this Agreement and applicable provisions of Arkansas law. Any mediation fees shall be borne equally between the parties. The parties shall coordinate mediation and the Owner shall notify the University of Arkansas System Office of any mediation prior to it taking place. The Owner's Administrator or his designee may view any and all mediation proceedings. Any settlements arising out of the mediation process must be approved by the University of Arkansas System Office.

15.1.3 Notwithstanding anything to the contrary contained herein, if any dispute arises between the Parties, whether or not it requires at any time the use of dispute resolution procedures described above, in no event, nor for any reason, shall the Contractor, Architect, or Engineer interrupt the provision of services/performance to the Owner, or perform any other action that prevents, slows down, or reduces, in any way, the provisions of the Agreement unless: (a) authority to do so is granted by the Owner or (b) the Agreement has been terminated by the Owner. Nothing in these contract documents, including the use of mediation, shall be construed to waive the sovereign immunity of the State of Arkansas or any entities thereof.

END OF DOCUMENT

SECTION 00800 - SUPPLEMENTARY CONDITIONS

MODIFICATIONS TO GENERAL CONDITIONS

ARTICLE 1 – GENERAL PROVISIONS

1 Paragraph 1.1 DEFINITIONS

Add Subparagraph 1.1.05 “Bidders” – Wherever the terms “Bidders” or “Bids” is utilized, it shall be changed to mean “Proposers” or “Proposals”, as appropriate.

2 Paragraph 1.1 DEFINITIONS

Clarify Subparagraph 1.1.8 “Owner” – The “Owner” is the University of Arkansas as represented by the Facilities Management Department. Specifically note that the “Owner” is not necessarily the same as the “End User”.

3 Paragraph 1.1 DEFINITIONS

Add Subparagraph 1.1.15 “End User: That subdivision of the University of Arkansas on whose “site” the work is being accomplished and who will directly benefit from the work being completed.”

4 Paragraph 1.1 DEFINITIONS

Add Subparagraph 1.1.16 “Construction Coordinator” - The “Construction Coordinator” is the U of A Facilities Management employee who has been appointed to routinely represent the Owner’s interest on a day-to-day basis.

ARTICLE 3 – CONTRACTOR

1 Paragraph 3.2 REVIEW OF FIELD CONDITIONS

Add the following subparagraphs:

- 3.2.1 The Contractor acknowledges by submission of his Job Order price proposal that he has satisfied himself as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during the prosecution of the work and all other matters which can in any way affect the work or the cost thereof under this contract.
- 3.2.2 The Contractor further acknowledges by submission of his Bid that he has satisfied himself as to the character, quality, and quantity of materials to be encountered from inspecting the site. Any failure by the Contractor to acquaint himself with all the available information will not relieve him from responsibility for properly estimating the difficulty or cost of successfully performing the work.
- 3.2.3 In the event subsurface or latent physical conditions are found materially different from those indicated in the Job Order, and differing materially from those ordinarily encountered in the project area and generally recognized as inhering in the character of work covered in these Contract Documents, the Contractor shall promptly, and before such conditions are disturbed, notify the FMD in writing of such changed conditions.
- 3.2.4 The FMD will investigate such conditions promptly and following this investigation, the Contractor shall proceed with the work, unless otherwise instructed.

3.2.5 Existing utilities in the vicinity of the project may include overhead and underground electric and telephone lines; fiber optic cable, underground water, sanitary sewer systems and gas where located. The Contractor shall pay extra attention while working on and around the locations of utilities. The Contractor should coordinate with the City of Fayetteville, University of Arkansas or their respective owner if questions or issues pertain to the existing utilities arises. No compensation will be paid to the Contractor, due to costs associated with damages to utilities or to costs associated with locating/avoiding same. The Design Professional and Owner will cooperate with the Contractor and utility firms where possible, to reasonably avoid existing utilities.

2 Paragraph 3.4 REQUEST FOR SUPPLEMENTARY INFORMATION

Add Subparagraph 3.4.3 – “Requests by the Contractor/Subcontractors for supplementary information MUST be directed to the “Owner”, not to the “End User”.”

3 Paragraph 3.8 SUPERINTENDANCE

Add the following to Subparagraph 3.8.4 – “Repeated occurrences whereby representatives of the Contractor/Subcontractors deal directly with the “End User” in reaching written or oral agreements regarding scope of work and/or services associated with the Contract rather than dealing directly with the “Owner” shall be grounds for removal of the offending individual from the work site. Repetitive occurrences by any particular contracting/subcontracting company shall be grounds for removal of that company from the Project.”

ARTICLE 7 – CHANGES IN THE WORK

Add Subparagraph 7.1.4 – The Contractor/Subcontractors shall pay special attention that changes in the work are to be negotiated directly between the Owner and the Contractor. Side agreements, whether oral or in writing, between the End User and the Contractor/Subcontractors are not allowed nor enforceable and may be grounds for action taken by the Owner in accordance with Subparagraph 3.8 of these Supplementary Conditions.

ARTICLE 8 – TIME

1 Subparagraph 8.4.1 – “normal weather conditions” is defined as those established by published historical records (NOAA) for the previous 50 years for the closest reporting station.

ARTICLE 10 – PROTECTION OF PERSONS AND PROPERTY

10.1 GENERAL

Add the following subparagraphs:

10.1.4 Safety provisions shall conform to the Federal and State Department of Labor Occupational Safety Health Act (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, the requirements set forth herein, and any regulations that may be specified in other parts of these Contract Documents. Where any of these are in conflict, the more stringent requirements shall be followed. The Contractor's failure to thoroughly familiarize himself with the aforementioned safety provisions shall not relieve him from compliance with the obligations and penalties set forth therein.

10.1.5 The Contractor shall at all times provide proper facilities for safe access to the work by authorized government officials.

10.1.6 The Contractor shall develop and maintain for the duration of this Contract, a safety program that will effectively incorporate and implement all required safety provisions. The

Contractor shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program.

- 10.1.7 The duty of the FMD to conduct construction review of the Contractor's performance is not intended to include a review or approval of the adequacy of the Contractor's safety supervisors, the safety program, or any safety measures taken in, on, or near the construction site.
- 10.1.8 The Contractor, as part of his safety program, shall maintain at his office or other well-known place at the job site, safety equipment applicable to the work as prescribed by the governing safety authorities, all articles necessary for giving first-aid to the injured, and shall establish the procedure for the immediate removal to a hospital or a doctor's care of any person who may be injured on the job site.
- 10.1.9 The performance of all work and all completed construction, particularly with respect to ladders, platforms, structure openings, scaffolding, shoring, lagging, machinery guards and the like, shall be in accordance with the applicable governing safety authorities.
- 10.1.10 During construction, the Contractor shall construct and at all times maintain satisfactory and substantial temporary chain link fencing, solid fencing, railing, barricades or steel plates, as applicable, at all openings, obstructions, or other hazards in sidewalks, floors, roofs, walkways, parking areas and driveways. All such barriers shall have adequate warning lights as necessary, or required, for safety.
- 10.1.11 If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to the FMD. In addition, the Contractor must promptly report in writing to the FMD all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.
- 10.1.12 If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the FMD, giving full details of the claim.
- 10.1.13 Comply with all rules and regulations of the state authorities regarding closing or restricting the use of public streets or highways. No public or private road shall be closed, except by express permission of the Owner. Conduct the work so-as-to-assure the least possible obstruction to traffic and normal commercial pursuits. Protect all obstructions within traveled roadways by installing approved signs, barricades, and lights where necessary for the safety of the public. The convenience of the general public and residents adjacent to the project, and the protection of persons and property are of prime importance and shall be provided for in an adequate and satisfactory manner.
- 10.1.14 When flagmen and guards are required by regulation or when deemed necessary for safety, they shall be furnished with approved orange wearing apparel and other regulation traffic control devices.
- 10.1.15 Traffic control procedures and devices used on all local, county, and state rights-of-way shall meet the requirements of the applicable current laws and regulations for traffic control.
- 10.1.16 The Contractor shall leave his night emergency telephone number or numbers with the Police Department, so that contact may be made easily at all times.
- 10.1.17 The Contractor shall perform all work in a fire-safe manner and shall supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. The

Contractor shall comply with applicable federal, local, and state fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standards for Safeguarding Building Construction Operations, (NFPA No. 241) shall be followed.

- 10.1.18 The Contractor shall perform all work, including excavation, dewatering, and demolition operations, in such a manner as to avoid damage to existing water mains, fire hydrants, sewer lines, gas mains, telephone and TV cables, power poles, lighting standards, and all other existing utilities, public or private. See Section 01011, SITE CONDITIONS.
- 10.1.19 The Contractor shall employ such means and methods as necessary to adequately protect public and private property against damage. In the event of damage to such property, the Contractor shall, at his own expense, immediately restore the property to a condition equal to its original condition and to the satisfaction of the Engineer and the owner of said property.
- 10.1.20 The Contractor shall exercise due care to avoid damage to existing pipe and coatings, wrappings, sewers, conduit, or other existing utilities. Should the Contractor damage or displace any of the above, the Contractor shall repair same to the satisfaction of the Owner's agent and all expenses in connection therewith shall be borne solely by the Contractor.

ARTICLE 11 - INSURANCE AND BONDS

- 1 Subparagraph 11.1.1, add the following sentence:

The amount of such insurance shall be not less than the following or any limits required by law.

- 2 Subparagraph 11.1.2, add the following clause:

11.1.2.2 Worker's Compensation:

- A. State: Statutory
- B. Applicable Federal Statutory
- C. Employer's Liability
 - \$ 100,000.00 per Accident
 - \$ 500,000.00 Disease, Policy Limit
 - \$ 100,000.00 Disease, each Employee

- 3 Subparagraph 11.1.3, add the following clause:

11.1.3.2 Comprehensive General Liability

- General Aggregate: \$ 1,000,000.00
- Completed Operations to be maintained for one year after final payment: \$1,000,000.00 Aggregate
- Personal Injury \$ 1,000,000.00 Each Occurrence
- Each Occurrence Limit \$ 1,000,000.00 Each Occurrence
- Automobile Liability (including owned, non-owned, and hired vehicles) Single Limit \$ 1,000,000.00 Combined
- Umbrella Excess Liability \$ 1,000,000.00

4 Subparagraph 11.1.4, add the following clause:

Owner's and Contractor's Protection Liability \$ 1,000,000.00 Combined Single Limit

5 Subparagraph 11.1.5., add the following:

"Each Job Order Contract shall stipulate whether Builder's Risk Insurance is required."

ARTICLE 13 – MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

Add the following subparagraphs:

13.1.4 PROTECTION OF THE ENVIRONMENT

- A. The Contractor shall maintain all work areas within and outside the project boundaries free from environmental pollution, which would be in violation to any federal, state, or local regulations.
- B. The Contractor shall comply in all ways with the Arkansas Department of Environmental Quality (ADEQ) Requirements for areas disturbed. This especially pertains to control of erosion/sediment from the construction areas. Use hay bales and silt fences where needed.
- C. Trash burning will not be permitted on the construction site.
- D. If temporary heating devices are necessary for protection of the work, such devices shall be of an approved type that will not cause pollution of the air.
- E. The Contractor shall conduct all his work, use appropriate construction methods and equipment, all as necessary so that noise emanating from the process or any related tool or equipment will not be disturbing to adjacent residents. If necessary, this will be justification for adjusting the allowable hours of work.

ARTICLE 16 – ADDITIONAL REQUIREMENTS:

- 16.1 There will be limited parking at the site. All other parking will be off-site. Parking within the construction site will be controlled by the contractor. Parking outside the site will be limited and controlled by Transit and Parking. All construction vehicles parked on campus outside the site must display a current University parking permit. Those can be purchased from the Transit and Parking Department, 155 Razorback Road, ASDB 131, Fayetteville, Arkansas 72701, phone 479-575-PARK, e-mail: parking@uark.edu, web site: "www.uark.edu/parking" . Visitor parking permits authorize parking in lots designated as Faculty/Staff (yellow), On Campus (red) and Off Campus (green). They DO NOT authorize parking in lots or spaces designated as Reserved or Resident Reserved (blue), 24 Hour Reserved, Handicap or at parking meters without paying the meter fee.
- 16.2 Observance of Pedestrian Crosswalks MUST be strictly enforced with all personnel.
- 16.3 Owner will require 24 hr. advance notice for any required on-site inspections.
- 16.4 Architect and Owner's personnel will be allowed access to the jobsite during construction.
- 16.5 Weekly progress meetings will be held at the jobsite, or at the Physical Plant Conference Room when appropriate.
- 16.6 Do not proceed with any change without written authorization from the Owner's representative.

- 16.7 Verify all utility locations (Arkansas One-Call: 1-800-482-8998), and coordinate any proposed outages in advance, with the Owner.
- 16.8 Provide documented requests for time extensions on a monthly basis, with payment requests.
- 16.9 Coordinate location of project fence with Owner (if applicable).
- 16.10 Protect all trees with fencing placed at drip-line.
- 16.11 The Contractor is required to install and pay for construction utilities (if applicable), and a telephone/fax.
- 16.12 Appropriate safety procedures will be enforced by the Owner. Hardhats will be used (extras for visitors), and signage will be posted, as required. All welding and cutting is to be performed behind appropriate vision screening. Whenever appropriate, all MSDS information must be on-site prior to arrival of related materials. ACM/PCB/Lead processes. The site will be kept in a clean, orderly state.
- 16.13 Appropriate security measures are to be observed. Any required University keys will be signed out, by the Contractor (with appropriate security deposits made), at the Facilities Management Key Desk. Any keys that are checked out must be returned upon completion of the project, in order to process the Final Pay Request. Any project keys required for Owner's access will be provided by the Contractor.
- 16.14 Harassment of students, faculty, or staff by contractors or subcontractors personnel will NOT be tolerated. Any verified infraction will be cause for immediate dismissal of the individual (s), and they are to immediately leave UA property.
- 16.15 Payment requests for material stored off-site will be approved if the material is stored in a bonded warehouse and adequately marked for use on this specific job. The FMD Rep. will verify this. The requests must have copies of invoices and insurance certificates attached.
- 16.16 Prevailing wage rates (if applicable) must be posted at the jobsite. All Contractors are liable for jobsite interviews, by the Department of Labor, to verify that rates are being paid.
- 16.17 Shop Drawings (all must be submitted to the FMD Rep. Within 5 days; substitutions approved within 10 days):
 - a. Must first be reviewed by the contractor, and bear their approval stamp.
 - b. Submit in quantities required for contractor's use after 3 are maintained by the FMD.
 - c. Use only approved shop drawings on jobsite.
 - d. All items requiring color selection will be made at one time.
- 16.18 A complete list of contractors, with after-hours contact information, must be submitted.
- 16.19 Have hardware supplier review shop drawing requirements for lock systems. Contact the Owner if there are any questions about locks or keying schedule. Keying schedule is to be coordinated with FMD Locksmith.
- 16.20 Any site testing (concrete, soil) will be coordinated with the Owner.
- 16.21 Whenever potable water lines are constructed, they shall be pressure-tested and disinfected per AWWA Standards prior to acceptance/use. The chlorinated water used for disinfecting the water

lines MUST be de-chlorinated and directed to a municipal sewer manhole instead of “flushing” the chlorinated water onto the ground/paved surface. Advanced notification/approval must be exercised among the Contractor, the City of Fayetteville and the Owner regarding the satisfactory manner for disposing of super-chlorinated water used for disinfection purposes.

END OF DOCUMENT

PART II
SPECIFICATIONS

SECTION 011000 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work by Owner.
5. Work under separate contracts.
6. Future work.
7. Purchase contracts.
8. Owner-furnished products.
9. Contractor-furnished, Owner-installed products.
10. Access to site.
11. Coordination with occupants.
12. Work restrictions.
13. Specification and drawing conventions.
14. Miscellaneous provisions.

- B. Related Requirements:

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

1.3 PROJECT INFORMATION

- A. Project Identification: University of Arkansas, Job Order Contracting.

1. Project Location: Fayetteville Campus, University of Arkansas.

- B. Owner: University of Arkansas, as represented by Facilities Management Department – 521 S. Razorback Road – Fayetteville, AR 72701.

1. Owner's Representative: Ms. Georgeta Galbraith

- C. Design Professional: To be assigned for each Job Order.

- D. Design Professional's Consultants: The Design Professional has retained the following design professionals who have prepared designated portions of the Contract Documents: (to be assigned for each Job Order as appropriate).
- E. Other Owner Consultants: The Owner has retained the following design professionals who have prepared designated portions of the Contract Documents: (to be assigned for each Job Order as appropriate).
- F. Contractor: (To be assigned for each Job Order) has been engaged as Contractor for this Project.
- G. Construction Manager: Not Used.
- H. Design-Builder: Not Used.
- I. Construction Coordinator: (To be assigned by the University of Arkansas, Facilities Management Department for each Job Order) has been appointed by Owner to serve as Construction Coordinator.
- J. Project Mechanical/Electrical Coordinator for Multiple Contracts: If needed will be assigned by University of Arkansas Facilities Management Department for a particular Job Order.
- K. Project Web Site: Not Used.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. Documents to be provided separately for each Job Order assigned to the Contractor.
- B. Type of Contract:
 - 1. Project will be constructed under the prime JOC (Job Order Contracting) Contract.
 - 2. Project could possibly be constructed under coordinated, concurrent multiple contracts. See Division 01 Section "Multiple Contract Summary" for work under multiple contracts. The Owner may employ two, or more, JOC Contractors to work on separate projects concurrently. On rare occasions two, or more, contractors may be required to share the same Project Site concurrently.

1.5 PHASED CONSTRUCTION

- A. The Work shall be conducted in phases only if specifically called for in the particular Job Order.
- B. Before commencing Work on each phase, submit an updated copy of Contractor's construction schedule showing the sequence, commencement and completion dates for each phase of the Work.

1.6 WORK BY OWNER

- A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.
- B. Preceding Work: Owner will perform work that precedes the JOC Contractor's work only when specifically called out in the Job Order.
- C. Concurrent Work: Owner may occasionally perform construction operations at Project Site while the JOC Contractor is working. In those cases, the JOC Contractor must carefully coordinate use of the Project Site with Owner in advance of each day's operations.
- D. Subsequent Work: Owner or his agents may perform additional work at site after Substantial Completion. Completion of that work will depend on successful completion of preparatory work under the JOC Contract. The Owner will endeavor to clearly point out those occasions in advance when the specific Job Order is being executed.

1.7 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.
- B. Preceding Work: Owner may award separate contract(s) for construction operations at Project Site. Those operations will be scheduled to be substantially complete before work under this Contract begins.
- C. Concurrent Work: Owner may award separate contract(s) for construction operations at Project Site. Those operations may possibly be conducted simultaneously with work under this Contract. However, the Owner will routinely endeavor to avoid concurrent work at a single JOC site.
- D. Subsequent Work: Owner may occasionally award separate contract(s) for additional work to be performed at site following Substantial Completion. Completion of that work will depend on successful completion of preparatory work under this Contract. Owner will endeavor to clearly point out those types of occasions in advance when the specific Job Order is being executed.

1.8 FUTURE WORK

- A. The Contract Documents may include specific requirements that will allow Owner to carry out future work following completion of this Project; provide for the future work as required in the Job Order.

1.9 PURCHASE CONTRACTS

- A. General: If stated in the specific Job Order, the Owner may directly purchase material and equipment to be incorporated into the Work. Owner will assign these purchased items/materials

to Contractor. In those cases, include costs for receiving, handling, storage if required, and installation of material and equipment in the Contract Sum, unless otherwise indicated.

1. Contractor's responsibilities are same as if Contractor had directly purchased those items.

B. Purchase Contracts Information: (To be provided to JOC Contractor prior to execution of the specific Job Order).

1.10 OWNER-FURNISHED PRODUCTS

A. Owner will furnish products indicated in each specific Job Order. The Work includes receiving, unloading, handling, storing, protecting, and installing Owner-furnished products and making connections.

B. Owner-Furnished Products: (Information to be provided for each separate Job Order).

1.11 CONTRACTOR-FURNISHED, OWNER-INSTALLED PRODUCTS

A. Whenever specifically required in a particular Job Order, the Contractor shall furnish products indicated. The Work includes unloading, handling, storing, and protecting Contractor-furnished products as directed and turning them over to Owner at the assigned time.

B. Contractor-Furnished, Owner-Installed Products: (Information to be provided with each Job Order). This will occur only on rare occasions.

1.12 ACCESS TO SITE

A. General: Contractor shall have full use of Project Site (within Owner-defined limits) for construction operations during construction period. Contractor's use of Project Site is limited only by Owner's right to perform work or to retain other contractors on portions of Project. Whenever applicable, the Owner will endeavor to clearly explain shared use of the site before execution of each Job Order.

B. Not Used.

C. Use of Site: Limit use to Project Site within Owner-defined limits. Do not disturb areas beyond the Project Site.

1. Limits: Confine JOC operations, including earthwork and clearing of vegetation, to the limits established in each Job Order.

2. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials unless specifically approved by the Owner in advance.

- a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 - c. JOC Contractor employee parking within the Owner-defined limits of the Project Site is permitted so long as it doesn't interfere with operations or conflict with other provisions in this manual.
- D. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.13 COORDINATION WITH OCCUPANTS

- A. General: Each Job Order related to building construction will indicate the "condition of occupancy" to be exercised by the Owner during the construction period.
- B. Full Owner Occupancy: Owner may occupy existing/adjacent building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
- 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 - 2. Notify Owner not less than 48 hours in advance of activities that will affect Owner's operations.
- C. Partial Owner Occupancy: Owner may occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
- 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
 - 2. Provide not less than 48 hours' notice to Owner of activities that will affect Owner's operations.
- D. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
- 1. Owner, or his agent, will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
 - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.

3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

1.14 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Work time will normally be limited to the hours between 7:30 am and 5:30 pm. However, because of the educational nature of the Owner's services, work hours may be more strictly limited as set forth in each Job Order.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 1. Notify Owner not less than seven (7) days in advance of proposed utility interruptions.
 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner in advance.
 1. Notify Owner not less than two (2) days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Nonsmoking Building: Smoking is not permitted anywhere on the Owner's property, inside or outside.
- F. Controlled Substances: Use of tobacco products and other controlled substances on Project Site is not permitted.
- G. Employee Identification: Provide identification tags for Contractor personnel working on Project Site. Require personnel to use identification tags at all times.
- H. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project Site.

1.15 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products will be identified on the Drawings and/or Specifications for each Job Order. One or more of the following may be used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the construction industry.
 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
 3. Notation: Materials and products may be identified by notes referencing detailed specification requirements.

1.16 MISCELLANEOUS PROVISIONS

- A. Requirements and extent of work are stated in each applicable Job Order. The Contractor shall, except as otherwise specifically stated herein or in any applicable parts of the other Contract Documents, provide and pay for all labor, materials, equipment, tools, construction equipment, and other facilities and services necessary for proper execution, and completion of his work.
- B. If there should be a conflict between the General Conditions or Supplementary Conditions and any other Section (s) of this Project Manual, the Owner must be contacted to determine which takes precedence.
- C. Any part of the work which is not mentioned in the Specifications but is shown on the Drawings, or any part not shown on the Drawings but described in the Specifications, or any part not shown on the Drawings nor described in the Specifications, but which is necessary or normally required as a part of such work, or is necessary or required to make each installation satisfactorily and legally operable, shall be performed by the Contractor as incidental work without extra cost to the Owner, as if fully described in the Specifications and shown on the Drawings, and the expense thereof shall be included in the applicable pay.
- D. Work included in the Job Order Contract Documents includes:
1. Mobilization/Demobilization
 2. Traffic Control
 3. Erosion Control
 4. All other work items to constitute a complete project, including trench and excavation safety systems, if applicable.
- E. When needing to block traffic, the Contractor shall coordinate with Owner in advance and keep one lane of traffic open at all times and both lanes of traffic open at night, weekends, holidays or other occasions when not working.

- F. Refer to the Supplementary Conditions for supplementary information addressing:
1. Site investigation before submitting a Job Order estimate of cost.
 2. Protection of the environment.
 3. Safety requirements and protection of property.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 011200 - MULTIPLE CONTRACT SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Each Job Order will include a summary of each project, including responsibilities for coordination and temporary facilities and controls.
- B. Specific requirements for Work of each project are also indicated in individual Job Order Specification Sections and on Drawings.
- C. Related Requirements:
 - 1. Division 01 Section "Summary" for the Work covered by the Contract Documents, restrictions on use of Project site, coordination with occupants, and work restrictions.
 - 2. Division 01 Section "Project Management and Coordination" for general coordination requirements.

1.3 DEFINITIONS

- A. Permanent Enclosure: As determined by Owner's agent, the condition at which roofing is insulated and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures equivalent in weather protection to permanent construction.

1.4 CONSTRUCTION COORDINATOR

- A. Construction Coordinator shall be responsible for coordination between the Owner and the JOC Contractor.
- B. Scheduling Consultant: Not normally used. Owner will advise when/if a Scheduling Consultant has been retained.

1.5 COORDINATION ACTIVITIES

- A. Coordination activities of Construction Coordinator include, but are not limited to, the following:
 - 1. Provide overall coordination of the Work, between Owner and JOC Contractor.

2. Coordinate shared access to workspaces on the Project Site.
 3. Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.
 4. Coordinate sequencing and scheduling of the Work. Include the following:
 - a. Initial Coordination Meeting: At earliest possible date, arrange and conduct a meeting with contractors for sequencing and coordinating the Work; negotiate reasonable adjustments to schedules.
 - b. Secure time commitments for performing critical construction activities from contractors.
 - c. Distribute copies of approved schedules to contractors.
 5. Assist the JOC Contractor in obtaining information necessary to adjust, move, or relocate existing utility structures affected by construction.
 6. Locate existing permanent benchmarks, control points, and similar reference points, on/near the Project Site with assistance from Design Professional.
 7. Coordinate completion of punch list items with assistance from Design Professional.
 8. Coordinate preparation of Project record documents if information from more than one contractor is to be integrated with information from other contractors to form one combined record.
 9. Collect record documents and operation and maintenance manuals on behalf of the Owner with assistance from Design Professional.
 10. Review the JOC Contractor's requests for payment after its review by the Design Professional.
- B. Responsibilities of Construction Coordinator for temporary facilities and controls include the following: Refer to specifications section regarding Temporary Facilities and Controls.
- C. Mechanical/Electrical Coordinator: Not normally used. If appropriate, individual Job Order will address this requirement.

1.6 GENERAL REQUIREMENTS OF CONTRACTS

- A. Extent of Contract: Unless the Job Order contains a more specific description of the Work, requirements indicated on Drawings and in Specification Sections determine which contract includes a specific element of Project.
1. Unless otherwise indicated, the work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
 2. Trenches and other excavation for the work of each contract shall be the work of each contract for its own work.
 3. Blocking, backing panels, sleeves, and metal fabrication supports for the work of each contract shall be the work of each contract for its own work.
 4. All other items for the work of each contract shall be the work of each contract for its own work.
 5. Contractors' Startup Construction Schedule: Within five (5) working days after Job Order approval by Owner, submit a horizontal bar-chart schedule showing construction operations sequenced and coordinated with overall construction.

- B. Substitutions: Each contractor shall cooperate with other contractors involved to coordinate approved substitutions with remainder of the work.
 - 1. The JOC Contractor for each Job Order shall coordinate his own substitutions.

- C. Temporary Facilities and Controls: In addition to specific responsibilities for temporary facilities and controls indicated in this Section and in Division 01 Section "Temporary Facilities and Controls," each contractor is responsible for the following:
 - 1. Installation, operation, maintenance, and removal of each temporary facility necessary for its own normal construction activity, and costs and use charges associated with each facility, except as otherwise provided for in the contract documents.
 - 2. Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
 - 3. Its own field offices if Job Order requires it.
 - 4. Its own storage and fabrication sheds, as appropriate for a particular Job Order.
 - 5. Temporary enclosures for its own construction activities.
 - 6. Staging and scaffolding for its own construction activities.
 - 7. General hoisting facilities for its own construction activities.
 - 8. Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials.
 - 9. Progress cleaning of work areas affected by its operations on a daily basis.
 - 10. Secure lockup of its own tools, materials, and equipment.
 - 11. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.

- D. Temporary Heating, Cooling, and Ventilation: The JOC Contractor is responsible for temporary heating, cooling, and ventilation, including utility-use charges, temporary meters, and temporary connections.

- E. Not Used.

- F. Use Charges: JOC Contractor shall comply with the following:
 - 1. Sewer Service: Include the cost for sanitary waste service for his employees engaged in construction activities at Project site in the Contractor's bid coefficient.
 - 2. Water Service: Include the cost for water service, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site in the Contractor's bid coefficient unless otherwise provided in the Job Order.
 - 3. Electric Power Service: Include the cost for electric power service, whether metered or otherwise, for electricity used in construction activities at Project site in the Contractor's bid coefficient.

1.7 GENERAL CONSTRUCTION CONTRACT

- A. Work in the JOC Contract is specifically covered in each approved Job Order:

- B. Temporary facilities and controls in the JOC Contract include, but are not limited to, the following:

1. Temporary facilities and controls that are not otherwise specifically assigned to the Owner or other contractors working at the Project Site.
2. Sediment and erosion control.
3. Unpiped sewers and drainage, including drainage ditches, dry wells, stabilization ponds, and containers.
4. Stormwater control.
5. Unpiped temporary toilet fixtures, wash facilities, and drinking water facilities, including disposable supplies.
6. Temporary enclosure for building exterior, except as indicated in the Job Order.
7. Temporary roads and paved areas.
8. Dewatering facilities and drains.
9. Excavation support and protection.
10. Hoisting requirements for construction activities.
11. Project identification sign (only if specifically required in the Job Order) and temporary signs.
12. General waste disposal facilities.
13. Pest control.
14. Temporary stairs.
15. Temporary fire-protection facilities.
16. Barricades, warning signs, and lights.
17. Site enclosure fence.
18. Covered walkways where required by applicable safety codes or the Job Order.
19. Security enclosure and lockup.
20. Environmental protection.
21. Restoration of Owner's existing facilities used as temporary facilities.

1.8 SUBCONTRACT WORK

- A. The JOC Contractor, acting as a General Contractor will be responsible for all "self-performed" work and all work performed by his subcontractor with regard to work scope and temporary facilities and controls.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011200

SECTION 013100 - 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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Requests for Information (RFIs).
 - 3. Project meetings.
- B. Each JOC contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific JOC Contractor.
- C. Related Requirements:
 - 1. Division 01 Section "Multiple Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
 - 2. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
 - 3. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 4. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.
 - 5. Division 01 Section "General Commissioning Requirements" for coordinating the Work with Owner's Commissioning Authority.

1.3 DEFINITIONS

- A. RFI: Request from Owner, Design Professional, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
 2. General description of work covered by subcontract.
 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within 5 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
1. Submit copies of list to the Owner's Construction Coordinator. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordinate construction operations to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations that depend on each other for proper installation, connection, and operation.
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 to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Each JOC Contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations that depend on each other for proper installation, connection, and operation.
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 contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- C. 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 Owner and separate contractors if coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities 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 JOC Contractor's construction schedule.
 2. Preparation of the schedule of values; use JOC Estimate Summary Form as basis.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.
- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that may be designated as Owner's property.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Generally, coordination Drawings will not be required for JOC contracts. However, when expressly required in the Job Order, prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified to the Owner's Construction Coordinator with copy to the Design Professional.
1. Design Professional will return RFIs with no response unless they were submitted through the Owner's Construction Coordinator.
 2. Design Professional will return RFIs submitted directly to Design Professional by other entities controlled by JOC Contractor with no response.
 3. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Names of Construction Coordinator and Design Professional.
 6. RFI number, numbered sequentially.
 7. RFI subject.

8. Drawing number and detail references, as appropriate.
 9. Field dimensions and conditions, as appropriate.
 10. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 11. Contractor's signature.
 12. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: The Owner will provide an example of the RFI form after the authorization of each Job Order. See general format of RFI form at end of this Section.
- D. Construction Coordinator's and Design Professional's Action: Construction Coordinator and Design Professional will review each RFI, determine action required, and respond. Allow 7 working days for response to each RFI.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Design Professional's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Design Professional 's action may include a request for additional information, in which case Design Professional 's time for response will date from time of receipt of additional information.
 3. Design Professional 's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Construction Coordinator in writing within 5 days of receipt of the RFI response.
- E. RFI Log: Construction Coordinator (or Design Professional, if assigned task by Construction Coordinator) to prepare and maintain a tabular log of RFIs organized by the RFI number.
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Construction Coordinator and Design Professional.
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.

7. Date Design Professional response was returned to the JOC Contractor.

F. On receipt of Design Professional's action the JOC Contractor shall immediately distribute the RFI response to affected parties. Review response and notify the Design Professional and Construction Coordinator within 5 days if JOC Contractor disagrees with response.

1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.8 PROJECT WEB SITE

A. Not Used.

1.9 PROJECT MEETINGS

A. General: Construction Coordinator will schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner, Design Professional, and JOC Contractor of scheduled meeting dates and times.
2. Agenda: Prepare the meeting agenda (unless duty assigned to Design Professional).
3. Minutes: Design Professional will record significant discussions and agreements achieved and distribute the meeting minutes to everyone concerned, including Construction Coordinator and JOC Contractor, within 3 days of the meeting.

B. Preconstruction Conference: Construction Coordinator (or his designee) will schedule and conduct a preconstruction conference before starting construction, at a time convenient to JOC Contractor and Design Professional, but no later than 7 calendar days after execution of the Agreement.

1. Conduct the conference to review responsibilities and personnel assignments.
2. Attendees: Authorized representatives of Owner, Design Professional, and their consultants; JOC Contractor and its superintendent; major subcontractors; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing; if any.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.

- i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. LEED requirements and Sustainable design requirements if a part of the Job Order.
 - m. Preparation of record documents.
 - n. Use of the premises.
 - o. Work restrictions.
 - p. Working hours.
 - q. Owner's occupancy requirements.
 - r. Responsibility for temporary facilities and controls.
 - s. Procedures for moisture control.
 - t. Procedures for disruptions and shutdowns.
 - u. Construction waste management and recycling.
 - v. Parking availability.
 - w. Office, work, and storage areas.
 - x. Equipment deliveries and priorities.
 - y. First aid.
 - z. Security.
 - aa. Progress cleaning.
4. Minutes: Design Professional meeting will record and distribute meeting minutes.
- C. LEED Coordination Conference: Construction Coordinator (or his designee) will schedule and conduct a LEED coordination conference before starting construction, at a time convenient to Owner, Design Professional and JOC Contractor.
- 1. Attendees: Authorized representatives of Owner, Design Professional, and their consultants; JOC Contractor and its superintendent and LEED Coordinator; major subcontractors; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss items of significance that could affect meeting requirements for LEED certification, including the following:
 - a. LEED Project Checklist.
 - b. General requirements for LEED-related procurement and documentation.
 - c. Project closeout requirements and LEED certification procedures.
 - d. Role of LEED Coordinator.
 - e. Construction waste management.
 - f. Construction operations and LEED requirements and restrictions.
 - 3. Minutes: LEED Coordinator will record and distribute meeting minutes.
- D. Preinstallation Conferences: JOC Contractor to schedule and conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Design

Professional, Construction Coordinator, and Owner's Commissioning Authority and LEED Coordinator (where appropriate) of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. LEED requirements and Sustainable Design requirements.
 - i. Review of mockups.
 - j. Possible conflicts.
 - k. Compatibility requirements.
 - l. Time schedules.
 - m. Weather limitations.
 - n. Manufacturer's written instructions.
 - o. Warranty requirements.
 - p. Compatibility of materials.
 - q. Acceptability of substrates.
 - r. Temporary facilities and controls.
 - s. Space and access limitations.
 - t. Regulations of authorities having jurisdiction.
 - u. Testing and inspecting requirements.
 - v. Installation procedures.
 - w. Coordination with other work.
 - x. Required performance results.
 - y. Protection of adjacent work.
 - z. Protection of construction and personnel.
 3. JOC Contractor to record significant conference discussions, agreements, and disagreements, including required corrective measures and actions and distribute minutes of the meeting to each party present and to other parties requiring information.
 4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- E. Project Closeout Conference: Construction Coordinator will schedule and conduct a Project Closeout Conference, at a time convenient to Owner and Design Professional, but no later than 7 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Construction Coordinator, Design Professional, and their consultants; JOC Contractor and its superintendent; major subcontractors; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Submittal of written warranties.
 - d. Requirements for completing LEED and Sustainable Design documentation.
 - e. Requirements for preparing operations and maintenance data.
 - f. Requirements for delivery of spare parts.
 - g. Requirements for demonstration and training.
 - h. Preparation of JOC Contractor's punch list.
 - i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - j. Submittal procedures.
 - k. Coordination of separate contracts.
 - l. Owner's partial occupancy requirements.
 - m. Installation of Owner's furniture, fixtures, and equipment, where/if appropriate.
 - n. Responsibility for removing temporary facilities and controls.
 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- F. Progress Meetings: Construction Coordinator or his designee will conduct progress meetings at regular intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner and Design Professional, the JOC Contractor, his subcontractors, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. JOC Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Resolution of conflicts.
 - 4) Status of submittals.
 - 5) Status of LEED and sustainable design documentation.

- 6) Deliveries.
 - 7) Off-site fabrication.
 - 8) Access.
 - 9) Site utilization.
 - 10) Temporary facilities and controls.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) Status of RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: JOC Contractor will revise and distribute construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- G. Coordination Meetings: Construction Coordinator will conduct Project Coordination Meetings whenever he believes that it is appropriate to do so. Project Coordination Meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner, Design Professional, the JOC Contractor, subcontractors, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Construction Schedule: Review progress since the last coordination meeting. Determine whether JOC Contract is on time, ahead of schedule, or behind schedule, in relation to JOC Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Schedule Updating: JOC Contractor to revise and distribute construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Review present and future needs of each contractor/subcontractor present, including the following:
 - 1) Interface requirements.

- 2) Sequence of operations.
 - 3) Resolution of conflicts.
 - 4) Status of submittals.
 - 5) Deliveries.
 - 6) Off-site fabrication.
 - 7) Access.
 - 8) Site utilization.
 - 9) Temporary facilities and controls.
 - 10) Work hours.
 - 11) Hazards and risks.
 - 12) Progress cleaning.
 - 13) Quality and work standards.
 - 14) Change Orders.
3. Reporting: Construction Coordinator or his designee shall record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100



REQUEST FOR INTERPRETATION

Project: _____ R.F.I. Number: _____
 _____ From: _____
 To: _____ Date: _____
 _____ A/E Project Number: _____
 Re: _____ Contract For: _____

| | | | |
|------------------------|------------|--------------------|---------|
| Specification Section: | Paragraph: | Drawing Reference: | Detail: |
|------------------------|------------|--------------------|---------|

Request:

Signed by: _____ Date: _____

Response:

Attachments

| | | | |
|----------------|-----|-------------|-------------|
| Response From: | To: | Date Rec'd: | Date Ret'd: |
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SECTION 013300 - 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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
 - 1. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 2. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Design Professional's and Construction Coordinator's responsive action. Action submittals are those submittals indicated in individual documents as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Design Professional's and Construction Coordinator's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual documents as "informational submittals."
- C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Design Professional and Construction

Coordinator and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 30 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Design Professional's and Construction Coordinator's final release or approval.
 - g. Scheduled date of fabrication.
 - h. Scheduled dates for purchasing.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Design Professional's Digital Data Files: Electronic digital data files of the Contract Drawings will not be provided for Contractor's use in preparing submittals.
- B. Coordination: Coordinate 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.
 2. Submit all submittal items required for each subcontractor's work concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals as separate packages under separate transmittals.
 4. 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. Design Professional and Construction Coordinator reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Construction Coordinator's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Construction Coordinator will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 5 days for review of each resubmittal.
 4. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Design Professional and to Design Professional's consultants, allow 15 days for review of each submittal. Submittal will be returned to Construction Coordinator and Design Professional before being returned to JOC Contractor.
- D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space beside title block to record Contractor's review and approval markings and action taken by Design Professional and Construction Coordinator.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Design Professional.
 - d. Name of Construction Coordinator.
 - e. Name of Contractor.
 - f. Name of subcontractor.
 - g. Name of supplier.
 - h. Name of manufacturer.
 - i. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Drawing or Specification Section number followed by a decimal point and then a sequential number (e.g., 2.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 2.01.A).
 - j. Number and title of appropriate Drawing or Specification Section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Other necessary identification.
 4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Design Professional or Construction Coordinator observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

- a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Design Professional and Construction Coordinator.
5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Design Professional and Construction Coordinator will return without review submittals received from sources other than Contractor.
- a. Transmittal Form for Paper Submittals: Use Standard AIA Document G810 or form CSI Form 12.1A.
 - b. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
 - 1) Project name.
 - 2) Date.
 - 3) Destination (To:).
 - 4) Source (From:).
 - 5) Name and address of Design Professional.
 - 6) Name of Construction Coordinator.
 - 7) Name of Contractor.
 - 8) Name of firm or entity that prepared submittal.
 - 9) Names of subcontractor, manufacturer, and supplier.
 - 10) Category and type of submittal.
 - 11) Submittal purpose and description.
 - 12) Specification Section number and title.
 - 13) Specification paragraph number or drawing designation and generic name for each of multiple items.
 - 14) Drawing number and detail references, as appropriate.
 - 15) Indication of full or partial submittal.
 - 16) Transmittal number, numbered consecutively.
 - 17) Submittal and transmittal distribution record.
 - 18) Remarks.
 - 19) Signature of transmitter.
- E. Electronic Submittals: Not allowed, use only paper submittals.
- F. Options: Identify options requiring selection by Design Professional.
- G. Deviations and Additional Information: On an attached separate sheet, prepared on JOC Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Design Professional and Construction Coordinator on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
- 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Design Professional and Construction Coordinator's action stamp.

- I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Design Professional's and Construction Coordinator's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required. Types of submittals will be identified at the Preconstruction Conference.
 - 1. Action Submittals: Submit 5 paper copies of each submittal unless otherwise indicated. Design Professional, through Construction Coordinator, will return 2 copies.
 - 2. Informational Submittals: Submit 5 paper copies of each submittal unless otherwise indicated. Design Professional and Construction Coordinator will return 2 copies.
 - 3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published 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 catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.

- d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 5. Submit Product Data before or concurrent with Samples.
 6. Submit Product Data in the following format:
 - a. Five (5) paper copies of Product Data unless otherwise indicated. Design Professional, through Construction Coordinator, will return 2 copies.
- 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: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 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 24 by 36 inches.
 3. Submit Shop Drawings in the following format:
 - a. Five (5) opaque copies of each submittal. Design Professional, through Construction Coordinator, will return 2 copies.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - e. Specification paragraph number and generic name of each item.
 3. Not Used.
 4. 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 that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- 5. 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.
 - a. Number of Samples: Submit two (2) full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Design Professional, through Construction Coordinator, will return one set of submittals with options selected.
- 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit two (2) sets of Samples. Design Professional and Construction Coordinator will retain one (1) Sample set; remainder will be returned.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required for clarifications, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 - 1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by JOC Contractor if none is indicated.
 - 2. Manufacturer and product name, and model number if applicable.
 - 3. Number and name of room or space.
 - 4. Location within room or space.
 - 5. Submit product schedule in the following format:
 - a. Five (5) paper copies of product schedule or list unless otherwise indicated. Design Professional, through Construction Coordinator, will return two (2) copies.
- F. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

- G. Contractor's Construction Schedule: Comply with requirements.
- H. Application for Payment: Comply with requirements specified in General Conditions and Supplementary Conditions.
- I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."
- J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."
- K. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- L. LEED Submittals: Comply with requirements specified in Division 01 sustainable design requirements Section.
- M. Not Used.
- N. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- O. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Job Order.
- P. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- Q. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- R. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- S. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- T. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- U. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
 2. Date of evaluation.
 3. Time period when report is in effect.
 4. Product and manufacturers' names.
 5. Description of product.
 6. Test procedures and results.
 7. Limitations of use.
- V. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- W. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- X. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- Y. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of JOC Contractor by the Job Order, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Design Professional.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit two (2) paper copies of certificate, signed and sealed by the responsible Design Professional, for each product and system specifically assigned to JOC Contractor to be designed or certified by a Design Professional.
1. Indicate that products and systems comply with performance and design criteria in the Job Order. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 JOC CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the JOC Contract and for compliance with the Job Order. Note corrections and field dimensions. Mark with approval stamp before submitting to Design Professional and Construction Coordinator.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Division 01 Section "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Drawing 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.

3.2 DESIGN PROFESSIONAL'S AND CONSTRUCTION COORDINATOR'S ACTION

- A. Action Submittals: Design Professional and Construction Coordinator will review each submittal, make marks to indicate corrections or revisions required, and return it. Design Professional will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:
 - 1. No Exceptions Noted;
 - 2. Make Corrections Noted;
 - 3. Rejected;
 - 4. Revise and Resubmit; or
 - 5. Submit Specified Item.
- B. Informational Submittals: Design Professional and Construction Coordinator will review each submittal and will return two (2) copies. Construction Coordinator (or his designee) will forward each submittal to appropriate party.
- C. Not Used.
- D. Incomplete or partial submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Job Order may be returned by the Design Professional without action.

END OF SECTION 013300

SECTION 013591 - HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general protection and treatment procedures for designated historic spaces, areas, rooms, and surfaces in Project and the following specific work:
 - 1. Historic removal and dismantling.
 - 2. Bird-excrement removal.
- B. Related Requirements:
 - 1. Division 04 Section "Maintenance of Unit Masonry" for specific requirements for cleaning and repairing clay masonry.
 - 2. Division 04 Section "Maintenance of Stone Assemblies" for specific requirements for cleaning and repairing stone.
 - 3. Division 05 Section "Maintenance of Decorative Metal" for specific requirements for cleaning and repairing ornamental metal.
 - 4. Division 08 Section "Historic Treatment of Wood Windows" for specific requirements for cleaning and repairing wood windows.
 - 5. Division 09 Section "Maintenance of Painting and Coating" for specific requirements for stripping and repainting of decorative paint finishes.

1.3 DEFINITIONS

- A. Consolidate: To strengthen loose or deteriorated materials in place.
- B. Dismantle: To disassemble and detach items by hand from existing construction to the limits indicated, using small hand tools and small one-hand power tools, so as to protect nearby historic surfaces; and legally dispose of dismantled items off-site, unless indicated to be salvaged or reinstalled.
- C. Existing to Remain: Existing items that are not to be removed or dismantled.
- D. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance which are important to the successful preservation, rehabilitation, restoration, and reconstruction as determined by Design Professional. Designated historic spaces, areas, rooms and surfaces are indicated on Drawings.

1. Restoration Zones: Areas of greatest architectural importance, integrity, and visibility; to be preserved and restored to the original, circa 1871 to 1950, design and finish as indicated on Drawing.
 2. Renovation Zones: Areas of significant architectural importance, integrity, and visibility; to be preserved and restored consistent with the remaining historic fabric and to the extent indicated on Drawing.
 3. Alteration Zones: Areas of slight architectural importance, integrity, and visibility; to leave any remaining original fabric untouched insofar as is consistent with accommodating modern uses for the building as indicated on Drawing.
- E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Design Professional
- F. Reconstruct: To remove existing item, replicate damaged or missing components, and reinstall in original position.
- G. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.
- H. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.
- I. Remove: Specifically for historic spaces, areas, rooms, and surfaces, the term means to detach an item from existing construction to the limits indicated, using hand tools and hand-operated power equipment, and legally dispose of it off-site, unless indicated to be salvaged or reinstalled.
- J. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. Includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.
- K. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.
- L. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.
- M. Reproduce: To fabricate a new item, accurate in detail to the original, and in either the same or a similar material as the original, unless otherwise indicated.
- N. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.
- O. Retain: To keep existing items that are not to be removed or dismantled.
- P. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials unless otherwise indicated.
- Q. Salvage: To protect removed or dismantled items and deliver them to Owner.

- R. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.
- S. Strip: To remove existing finish down to base material unless otherwise indicated.

1.4 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during removal and dismantling work remain Owner's property. Carefully dismantle and salvage each item or object per the Owner's direction.
- B. Coordinate with Owner's Historical Adviser, who will establish special procedures for dismantling and salvage.

1.5 INFORMATIONAL SUBMITTALS

- A. Construction Schedule for Historic Treatments: Indicate for entire Project the following for each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces:
 - 1. Detailed sequence of historic treatment work, with starting and ending dates, coordinated with Owner's continuing operations and other known work in progress.
 - 2. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
 - 3. Use of elevator and stairs.
 - 4. Coordination of Owner's and others' continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
 - 5. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use. Do not use such equipment without Contractor's professional engineer's certification that the structure can support the imposed loadings without damage.
- B. Qualification Data: For historic treatment specialist, historic removal and dismantling specialist, bird-excrement-removal specialist and industrial hygienist.
- C. Preconstruction Documentation: Use photographs or other means to clearly show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's historic treatment operations.
- D. Historic Treatment Program: Submit before work begins.
- E. Fire-Prevention Plan: Submit before work begins.
- F. Inventory of Salvaged Items: After removal or dismantling work is complete, submit a list of items that have been salvaged.

1.6 QUALITY ASSURANCE

- A. Historic Treatment Specialist Qualifications: An experienced firm regularly engaged in historic treatments similar in nature, materials, design, and extent to this work as required, and that has completed a minimum of 5 recent projects with a record of successful in-service performance that demonstrate the firm's qualifications to perform this work.
 - 1. Field Supervisor Qualifications: Full-time supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on Project site during times that historic treatment work is in progress. Supervisors shall not be changed during Project except for causes beyond the control of the specialist firm.
 - 2. Worker Qualification: Persons who are experienced in historic treatment work of types they will be performing.
- B. Historic Removal and Dismantling Specialist Qualifications: A qualified historic treatment specialist. General selective demolition experience is not sufficient experience for historic removal and dismantling work.
- C. Bird-Excrement-Removal Specialist Qualifications: A firm that employs personnel experienced and skilled in the processes and operations indicated.
- D. Industrial Hygienist Qualifications: Certified as Industrial Hygienist by the American Board of Industrial Hygiene; having Bachelor's degree in industrial hygiene, public health, biological science, occupational health, or environmental and safety discipline; and experienced in work of types specified.
- E. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other Sections.
 - 1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
 - 2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.
- F. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-prevention devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include each fire watch's training, duties, and authority to enforce fire safety.
- G. Mockups: Prepare mockups of specific historic treatment procedures specified in this Section to demonstrate aesthetic effects and to set quality standards for materials and execution.
 - 1. Typical Removal Work: Remove typical wall area, suspended ceiling assembly or other items as shown on Drawings.
 - 2. Typical Dismantling Work: Dismantle typical fluorescent lighting fixture from ornamental plaster surface, historic light fixture, or other items as shown on Drawings.

3. Bird-Excrement Removal: Remove typical accumulation of bird excrement from area as shown on Drawings.
 4. Typical Removal Work: Remove an approximately 50-sq. ft. area of typical wall or suspended ceiling assembly, but not less than 10 adjacent whole masonry, stone, or ceiling tile units.
 5. Typical Dismantling Work: Dismantle an approximately 50-sq. ft. area of typical composition tile from mosaic tile substrate, but not less than 10 adjacent whole composition tile units.
 6. Bird-Excrement Removal: Remove excrement from an area approximately 25 sq. ft. for each type of building cornice, coping or wall substrate material.
 - a. Test chemicals and methods on samples of adjacent building materials for possible adverse reactions. Do not use chemicals and methods known to have deleterious effect.
 - b. Allow a waiting period of not less than seven days after completion of removal work to permit a study of mockup for deleterious effects.
 7. Exploratory Dismantling of Marble and Travertine Flooring and Setting Bed: Perform dismantling in the presence of Design Professional or the Owner's Historical Advisor.
 - a. Follow the procedure specified in "Historic Removal and Dismantling" Article.
 - b. Dismantle 1 sq. ft. of the setting bed for each 2500 sq. ft. of stone flooring. At each location, verify the actual thickness and nature of the setting bed.
 - c. If the actual thickness of the setting bed is equal to or more than 1-3/4 inches, continue the dismantling.
 - d. If the actual thickness of the setting bed is less than 1-3/4 inches, continuation of the dismantling may be suspended by Design Professional for re-evaluation.
 8. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Design Professional specifically approves such deviations in writing.
- H. Regulatory Requirements: Comply with notification regulations of authorities having jurisdiction before beginning removal and dismantling work. Comply with hauling and disposal regulations of authorities having jurisdiction.
- I. Standards: Comply with ANSI/ASSE A10.6.
- J. Historic Treatment Preconstruction Conference: Conduct conference at the location determined by the Owner.
1. General: Review methods and procedures related to historic treatment including, but not limited to, the following:
 - a. Review manufacturer's written instructions for precautions and effects of historic treatment procedures on materials, components, and vegetation.
 - b. Review and finalize historic treatment construction schedule; verify availability of materials, equipment, and facilities needed to make progress and avoid delays.
 - c. Review qualifications of personnel assigned to the work and assign duties.
 - d. Review material application, work sequencing, tolerances, and required clearances.
 - e. Review areas where existing construction is to remain and requires protection.

2. Removal and Dismantling:
 - a. Inspect and discuss condition of construction to be removed or dismantled.
 - b. Review requirements of other work that relies on substrates exposed by removal and dismantling work.

1.7 STORAGE AND PROTECTION OF HISTORIC MATERIALS

A. Salvaged Historic Materials:

1. Clean only loose debris from salvaged historic items unless more extensive cleaning is indicated.
2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

B. Historic Materials for Reinstallation:

1. Repair and clean historic items as indicated and to functional condition for reuse.
2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make item functional for use indicated.

C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Design Professional, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.

D. Storage and Protection: When taken from their existing locations, catalog and store historic items within a weathertight enclosure where they are protected from wetting by rain, snow, condensation, or ground water, and from freezing temperatures.

1. Identify each item with a nonpermanent mark to document its original location. Indicate original locations on plans elevations, sections, or photographs by annotating the identifying marks.
2. Secure stored materials to protect from theft.

1.8 PROJECT CONDITIONS

A. General Size Limitation in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.

- B. Owner may occupy portions of building immediately adjacent to removal and dismantling area. Conduct removal and dismantling work so Owner's operations will not be disrupted.
- C. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 1. Before removal and dismantling, Owner may remove certain items as defined in the Job Order or elsewhere in the Contract Documents.
- D. Notify Design Professional of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.
- E. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work.
 - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Design Professional and Owner. Owner will remove hazardous materials under a separate contract.
 - a. In the case of asbestos, stop work in the area of potential hazard, shut off fans and other airhandlers ventilating the area, and rope off area until the questionable material is identified. Re-assign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.
- F. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.
 - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Design Professional and Owner. Owner will remove hazardous materials under a separate contract.
 - a. In the case of asbestos, stop work in the area of potential hazard, shut off fans and other airhandlers ventilating the area, and rope off area until the questionable material is identified. Re-assign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.
- G. Storage or sale of removed or dismantled items on-site is not permitted unless otherwise indicated.

1.9 COORDINATION

- A. Coordinate historic treatment procedures in this Section with public circulation patterns at Project site. Some work may be near public circulation patterns. Public circulation patterns cannot be closed off entirely, and in places can be only temporarily redirected around small areas of work. Railroad traffic will not be stopped. Plan and execute the Work accordingly.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 HISTORIC REMOVAL AND DISMANTLING SPECIALIST

- A. Historic Removal and Dismantling Specialist Firms: Subject to compliance with qualification requirements and approved by Owner.

3.2 HISTORIC REMOVAL AND DISMANTLING EQUIPMENT

- A. Removal Equipment: Use only hand-held tools except as follows or unless otherwise approved by Design Professional on a case-by-case basis:
 - 1. Light jackhammers are allowed subject to Design Professional's approval.
 - 2. Large air hammers are not permitted.
- B. Dismantling Equipment: Use manual, hand-held tools, except as follows or otherwise approved by Design Professional on a case-by-case basis:
 - 1. Hand-held power tools and cutting torches are permitted only as submitted in the historic treatment program. They must be adjustable so as to penetrate or cut only the thickness of material being removed.
 - 2. Pry bars more than 18 inches long and hammers weighing more than 2 lb are not permitted for dismantling work.

3.3 EXAMINATION

- A. Preparation for Removal and Dismantling: Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work. Examine adjacent work to determine what protective measures will be necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.
 - 1. Verify that affected utilities have been disconnected and capped.
 - 2. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage.
 - 3. Before removal or dismantling of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
 - 4. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures as a result of removal and dismantling work.
- B. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs, and preconstruction videotapes.

- C. Perform surveys as the Work progresses to detect hazards resulting from historic treatment procedures.

3.4 PROTECTION, GENERAL

- A. Comply with temporary barrier requirements in Division 01 Section "Temporary Facilities and Controls."
- B. Ensure that supervisory personnel are on-site and on duty when historic treatment work begins and during its progress.
- C. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.
 - 1. Use only proven protection methods, appropriate to each area and surface being protected.
 - 2. Provide barricades, barriers, and temporary directional signage to exclude public from areas where historic treatment work is being performed.
 - 3. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of historic treatment work.
 - 4. Contain dust and debris generated by removal and dismantling work and prevent it from reaching the public or adjacent surfaces.
 - 5. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
 - 6. Protect floors and other surfaces along haul routes from damage, wear, and staining.
 - 7. Provide supplemental sound-control treatment to isolate removal and dismantling work from other areas of the building.
- D. Temporary Protection of Historic Materials:
 - 1. Protect existing historic materials with temporary protections and construction. Do not deface or remove existing materials.
 - 2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Design Professional.
- E. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
- F. Utility and Communications Services:
 - 1. Notify Owner, Design Professional, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by the historic treatment work before commencing operations.
 - 2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for the historic treatment work.
 - 3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

- G. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Design Professional immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is in working order.
 - 1. Prevent solids such as stone or mortar residue from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
 - 2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.
- H. Existing Roofing: Prior to the start of work in an area, install roofing protection.

3.5 PROTECTION DURING APPLICATION OF CHEMICALS

- A. Protect motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or damage resulting from applications of chemical cleaners and paint removers.
- B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in historic treatment program. Use covering materials and masking agents that are waterproof, UV resistant, and will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials staining.
- C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.
- D. Neutralize and collect alkaline and acid wastes and legally dispose of off Owner's property.
- E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

3.6 PROTECTION FROM FIRE

- A. General: Follow fire-prevention plan and the following.
 - 1. Comply with NFPA 241 requirements unless otherwise indicated.
 - 2. Remove and keep area free of combustibles including, rubbish, paper, waste, and chemicals, except to the degree necessary for the immediate work.
 - a. If combustible material cannot be removed, provide fire blankets to cover such materials.
 - 3. Prohibit smoking by all persons within Project work.
- B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or highly combustible materials, including welding, torch-cutting, soldering, brazing, paint removal with heat, or other

operations where open flames or implements utilizing high heat or combustible solvents and chemicals are anticipated:

1. Obtain Owner's approval for operations involving use of open-flame or welding or other high-heat equipment. Notify Owner 48 hours before each occurrence, indicating location of such work.
 2. As far as practical, restrict heat-generating equipment to shop areas or outside the building.
 3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
 4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
 5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
 6. Fire Watch: Before working with heat-generating equipment or highly combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows.
 - a. Train each fire watch in the proper operation of fire-control equipment and alarms.
 - b. Prohibit fire-watch personnel from other work that would be a distraction from fire-watch duties.
 - c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
 - d. Have fire watch perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work at each area of Project site to detect hidden or smoldering fires and to ensure that proper fire-prevention is maintained.
 - e. Maintain fire-watch personnel at each area of Project site until 60 minutes after conclusion of daily work.
- C. Fire Extinguishers, Fire Blankets, and Rag Buckets: Maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire watch are trained in fire-extinguisher and blanket operation.
- D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.
1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is completed.

3.7 GENERAL HISTORIC TREATMENT

- A. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.

- B. Halt the process of deterioration and stabilize conditions unless otherwise indicated. Perform work as indicated on Drawings. Follow the procedures in subparagraphs below and procedures approved in historic treatment program:
 - 1. Retain as much existing material as possible; repair and consolidate rather than replace.
 - 2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
 - 3. Use reversible processes wherever possible.
 - 4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
 - 5. Record existing work before each procedure (preconstruction) and progress during the work with photographs or video recordings.
- C. Notify Design Professional of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion.
 - 1. Do not proceed with the work in question until directed by Design Professional.
- D. Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to approval of Design Professional.
- E. Where Work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.
- F. Identify new and replacement materials and features with permanent marks hidden in the completed work to distinguish them from original materials. Record a legend of identification marks and the locations of the items on record Drawings.

3.8 HISTORIC REMOVAL AND DISMANTLING

- A. General: Have removal and dismantling work performed by a qualified historic removal and dismantling specialist. Ensure that historic removal and dismantling specialist's field supervisors are present when removal and dismantling work begins and during its progress.
- B. Perform work according to the historic treatment program.
 - 1. Provide supports or reinforcement for existing construction that becomes temporarily weakened by the work, until the work is completed.
 - 2. Perform cutting by hand or with small power tools wherever possible. Cut holes and slots neatly to size required, with minimum disturbance of adjacent work.
 - 3. Do not operate air compressors inside building, unless approved by Design Professional in each case.
 - 4. Do not drill or cut columns, beams, joints, girders, structural slabs, or other structural supporting elements, without having Contractor's professional engineer's written approval for each location before such work is begun.
 - 5. Do not use explosives.

- C. Water-Mist Sprinkling: Use water-mist sprinkling and other wet methods to control dust only with adequate, approved procedures and equipment that ensure that such water will not create a hazard or adversely affect other building areas or materials.
- D. Unacceptable Equipment: Keep equipment that is not permitted for historic removal or dismantling work away from the vicinity where such work is being performed.
- E. Removing and Dismantling Items on or near Historic Surfaces:
 - 1. Use only dismantling tools and procedures within 12 inches of historic surface. Do not use pry bars. Protect historic surface from contact with or damage by tools.
 - 2. Unfasten items to be removed, in the opposite order from which they were installed.
 - 3. Support each item as it becomes loosened to prevent stress and damage to the historic surface.
 - 4. Dismantle anchorages.
- F. Masonry Walls:
 - 1. Remove masonry carefully and erect temporary bracing and supports as needed to prevent collapse of materials being removed.
 - 2. Dismantle top edge and sides before removing wall. Stop removal work and immediately inform Design Professional if any structural elements above or adjacent to the work show signs of distress or dislocation during any phase of removal work.
 - 3. Remove wall in easily managed pieces.
 - 4. During removal, Contractor is responsible for the stability of the partially remaining wall. Notify Design Professional of the condition of temporary bracing for wall if work is temporarily stopped during the wall's removal.
- G. Steelwork:
 - 1. Expose structural steel for examination by Design Professional and Contractor's Professional Engineer before proceeding with removal or dismantling.
 - 2. If distress in structure is apparent during performance of the work, stop removal or dismantling and take immediate precautionary measures to ensure safety of the structure. Inform Design Professional of the problem, steps taken, and proposed corrective actions.
 - 3. Brace and support structural steel being removed and remaining during removal and dismantling.
 - 4. Concrete-Encased Steel: Where steel is known to be encased by concrete being removed, saw cut with blades that will cut no deeper than the thickness of the concrete cover with an adequate margin for error in the location of the steel. Isolate sections of concrete by saw cutting before beginning removal.
- H. Loose Plaster: Identify loose, non-historic plaster and separate it from its substrate by tapping with a hammer and prying with a chisel or screwdriver. Do not use pry bars. Leave sound, firmly adhered plaster in place. Do not damage, remove, or dismantle historic plasterwork except where indicated or where it is an immediate hazard to personnel and as approved by Design Professional.
- I. Concrete Floor Surface Removal: Remove floor surfaces, fill, and topping, to the indicated lower elevations or cleavage planes as indicated on Drawings. Use dismantling methods when

removing floor surfaces 12 inches or less away from historic walls. Take away material to a uniform surface at the indicated level.

J. Marble and Travertine Flooring and Setting Bed Dismantling: Dismantle marble, travertine, and setting bed to the depth indicated.

1. Caution: Immediately beneath the setting bed lie structural clay tile arches of the rooms below. Use only procedures and techniques that will ensure that the setting bed is dismantled without damage to the structural integrity of the tile arches. Do not cut, chip, or otherwise damage the surface of the tile arches for any reason.
2. Notify Design Professional 15 calendar days before performing dismantling operations on the setting bed. Obtain Design Professional's permission before proceeding with the dismantling.
3. Hours of Work: 12 midnight to 6 a.m., or as approved by Design Professional.
4. Procedure: Follow dismantling procedure below.
 - a. Saw cut marble and travertine joints with rigid guides to ensure straight, uniform cuts and to prevent over cutting into adjacent stones. Use thin saw blades so that stones can be reused. Replace with new any dismantled stones and adjacent stones if cut irregularly or otherwise damaged, at no additional cost to Owner.
 - b. Gently loosen and pry stone free from setting bed. If a stone unit cannot be separated from the substrate, cut it up as necessary for removal and replace it.
 - c. Saw cut setting bed with parallel cuts 3 to 4 inches apart and of a maximum depth 1/4 inch above the bottom of the setting bed (the top of the structural tile arches).
 - d. Using the sawed grooves, carefully chip out material to the limits shown.
 - e. Take away material to a uniform surface at the indicated level.
 - f. Carefully monitor the progress of the saw cutting. If at any point the material being cut changes in nature as evidenced by observations such as sounds generated by the cutting blade, resistance to cutting, and color of the dust, stop work in the immediate area, immediately notify Design Professional of the condition, and assign workers to continue work elsewhere until Design Professional issues instructions.
 - g. Where the actual thickness of the setting bed is more than 1-3/4 inches continue the dismantling.
 - h. If the actual thickness of the setting bed is less than 1-3/4 inches, immediately notify Design Professional. Continuation of the dismantling may be suspended by Design Professional for re-evaluation.
 - i. Clean and dry surfaces for inspection by Design Professional before beginning installation of new work.
5. If any damage to the structural clay tile arches of the rooms below has been caused, or is suspected to have been caused, by the dismantling work, attributable to Contractor's faulty procedure, mishap, or negligence, perform repair or replacement as directed by Design Professional at no additional cost to Owner.

K. Anchorages:

1. Remove anchorages associated with removed items.
2. Dismantle anchorages associated with dismantled items.
3. In non-historic surfaces, patch holes created by anchorage removal or dismantling according to the requirements for new work.

4. In historic surfaces, patch or repair holes created by anchorage removal or dismantling according to Section specific to the historic surface being patched.

3.9 BIRD-EXCREMENT REMOVAL

- A. General: Before disturbing accumulated bird excrement, employ a qualified industrial hygienist to perform tests, make recommendations, and observe the work. Follow procedures required by authorities having jurisdiction and recommended by industrial hygienist.
- B. Removing Bird Excrement: Have bird-excrement removal work performed by a qualified bird-excrement removal specialist. Remove exterior bird-excrement accumulations with building windows and other openings in the building closed or sealed off. Remove interior bird excrement with other parts of the building sealed off from work area and with windows and other openings to exterior areas accessible to the public closed or sealed off.
 1. Before removal, treat bird excrement to kill pathogens; dampen excrement to prevent particles becoming airborne.
 2. Use only nonmetallic tools such as plastic spatulas and brushes with natural fiber or nylon bristles.
 3. Collect excrement debris as it is removed and legally dispose of off-site.
 4. Repeat removal procedure above where required to produce cleaning effect established by mockup.
- C. Removing Bird-Excrement Stain: Clean as required in section pertaining to cleaning substrate material from which bird excrement was removed.

3.10 HISTORIC REMOVAL AND DISMANTLING SCHEDULE

- A. This schedule will be issued as a part of each JOC Job Order.

3.11 HISTORIC TREATMENT SCHEDULE

- A. Spaces, areas, rooms, and surfaces requiring special care and treatment to ensure successful preservation, rehabilitation, restoration and reconstruction are indicated on Drawings and will be listed as a part of each JOC Job Order.

END OF SECTION 013591

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Design Professional, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Design Professional or Construction Coordinator.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Laboratory Mockups: Full-size physical assemblies constructed at testing facility to verify performance characteristics.
 2. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
 3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of 5 previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: 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 conflicting requirements that are different, but apparently equal, to Design Professional for a decision before proceeding.
- B. 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 Design Professional for a decision before proceeding.

1.5 ACTION SUBMITTALS

- A. Shop Drawings: For mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
 - 1. Indicate manufacturer and model number of individual components.
 - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: Optional for JOC Contractor. Owner will provide Quality Control testing.
- B. Qualification Data: Not Used.

1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Not Used for JOC Contracts.

1.8 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required. The JOC Job Order may specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A Professional Engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain work requires that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An independent agency with the experience and capability to conduct testing and inspecting indicated; and with additional qualifications required by authorities having jurisdiction, that is acceptable to authorities.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project.
 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Design Professional and Construction Coordinator, with copy to JOC Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Design Professional or Construction Coordinator.
 2. Notify Design Professional and Construction Coordinator 7 days in advance of dates and times when mockups will be constructed.

3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 5. Obtain Design Professional's and Construction Coordinator's approval of mockups before starting work, fabrication, or construction.
 - a. Allow 5 days for initial review and each re-review of each mockup.
 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 7. Demolish and remove mockups when directed unless otherwise indicated.
- L. Integrated Exterior Mockups: Construct integrated exterior mock-up if indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.
- M. Room Mockups: Not Required.

1.9 QUALITY CONTROL

- A. Owner Responsibilities: Quality Control services for testing soils, concrete, base, and asphalt are Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Payment for these services will be made directly by the Owner.
 3. However, **costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order accordingly.**
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner.
 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. **Manufacturer's Technical Services:** Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. **Retesting/Reinspecting:** Regardless of whether original tests or inspections were Contractor's responsibility, provide and pay for quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. **Testing Agency Responsibilities:** Cooperate with Design Professional, Construction Coordinator, and JOC Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Design Professional, Construction Coordinator and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- G. **Associated Services:** Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Not Used.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.

- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required. Update as the Work progresses.
 - 1. Distribution: Distribute schedule to Design Professional, Construction Coordinator, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.10 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.
- B. Special Tests and Inspections: Conducted by a qualified testing agency or special inspector as required by authorities having jurisdiction as follows:
 - 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
 - 2. Notifying Design Professional, Construction Coordinator and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 - 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Design Professional, through Construction Coordinator, with copy to Contractor and to authorities having jurisdiction.
 - 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 - 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 - 6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ACCEPTABLE TESTING AGENCIES

- A. To be provided before each Job Order is executed.

3.2 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.

2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Design Professional.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Design Professional and Construction Coordinator's reference during normal working hours.

3.3 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, JOC Contractor will repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements to match existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Design Professional's action on Contractor's submittals, applications, and requests, "approved" is limited to Design Professional's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Design Professional. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": 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": Furnish and install, complete and ready for the intended use.
- I. "Project Site": 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. Copies of Standards: Each entity engaged in construction on Project should 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.

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."
- B. 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 sites 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 (The) www.aluminum.org | (703) 358-2960 |
| AABC | Associated Air Balance Council www.aabchq.com | (202) 737-0202 |
| AAMA | www.aamanet.org | |
| AASHTO | American Association of State Highway and Transportation Officials | (202) 624-5800 |
| AATCC | American Association of Textile Chemists and Colorists www.aatcc.org | (919) 549-8141 |
| ABAA | Air Barrier Association of America www.airbarrier.org | (866) 956-5888 |
| ABMA | www.abma-dc.org | |
| ACI | American Concrete Institute | (248) 848-3700 |

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| ACPA | American Concrete Pipe Association www.concrete-pipe.org | (972) 506-7216 |
| AEIC | Association of Edison Illuminating Companies, Inc. (The) www.aeic.org | (205) 257-2530 |
| AF&PA | www.afandpa.org | (202) 463-2700 |
| AGA | American Gas Association | (202) 824-7000 |
| AHAM | Association of Home Appliance Manufacturers www.aham.org | (202) 872-5955 |
| AHRI | Air-Conditioning, Heating, and Refrigeration Institute, The www.ahrinet.org | (703) 524-8800 |
| AI | www.asphaltinstitute.org | |
| AIA | American Institute of Architects (The) | (800) 242-3837 |
| AISC | American Institute of Steel Construction www.aisc.org | (800) 644-2400 (312) 670-2400 |
| AISI | American Iron and Steel Institute www.steel.org | (202) 452-7100 |
| AITC | www.aitc-glulam.org | |
| ALSC | American Lumber Standard Committee, Incorporated | (301) 972-1700 |
| AMCA | Air Movement and Control Association International, Inc. www.amca.org | (847) 394-0150 |
| ANSI | American National Standards Institute www.ansi.org | (202) 293-8020 |
| AOSA | www.aosaseed.com | |
| APA | APA - The Engineered Wood Association | (253) 565-6600 |
| APA | Architectural Precast Association www.archprecast.org | (239) 454-6989 |

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| API | American Petroleum Institute www.api.org | (202) 682-8000 |
| ARI | www.ari.org | |
| ARMA | Asphalt Roofing Manufacturers Association | (202) 207-0917 |
| ASCE | American Society of Civil Engineers www.asce.org | (800) 548-2723 (703) 295-6300 |
| ASCE/SEI | American Society of Civil Engineers/Structural Engineering Institute (See ASCE) | |
| ASHRAE | www.ashrae.org | (404) 636-8400 |
| ASME | ASME International www.asme.org | (800) 843-2763 |
| ASSE | American Society of Sanitary Engineering | (440) 835-3040 |
| ASTM | ASTM International (American Society for Testing and Materials International) | (610) 832-9500 |
| ATIS | Alliance for Telecommunications Industry Solutions www.atis.org | (202) 628-6380 |
| AWCMA | American Window Covering Manufacturers Association (Now WCMA) | |
| AWCI | www.awci.org | |
| AWI | Architectural Woodwork Institute | (571) 323-3636 |
| AWPA | American Wood Protection Association (Formerly: American Wood Preservers' Association) | (205) 733-4077 |
| AWS | American Welding Society www.aws.org | (800) 443-9353 (305) 443-9353 |
| AWWA | American Water Works Association www.awwa.org | (800) 926-7337 (303) 794-7711 |

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| BHMA | www.buildershardware.com | |
| BIA | Brick Industry Association (The) | (703) 620-0010 |
| BICSI | BICSI, Inc. www.bicsi.org | (800) 242-7405 (813) 979-1991 |
| BIFMA | BIFMA International (Business and Institutional Furniture Manufacturer's Association International) www.bifma.com | (616) 285-3963 |
| BISSC | Baking Industry Sanitation Standards Committee www.bissc.org | (866) 342-4772 |
| CCC | www.carpetcushion.org | |
| CDA | Copper Development Association | (800) 232-3282 |
| CEA | Canadian Electricity Association www.canelect.ca | (613) 230-9263 |
| CEA | Consumer Electronics Association www.ce.org | (866) 858-1555 (703) 907-7600 |
| CFFA | www.chemicalfabricsandfilm.com | |
| CGA | Compressed Gas Association | (703) 788-2700 |
| CIMA | Cellulose Insulation Manufacturers Association www.cellulose.org | (888) 881-2462 (937) 222-2462 |
| CISCA | Ceilings & Interior Systems Construction Association www.cisca.org | (630) 584-1919 |
| CISPI | www.cispi.org | |
| CLFMI | Chain Link Fence Manufacturers Institute | (301) 596-2583 |
| CPA | Composite Panel Association www.pbmdf.com | (703) 724-1128 |
| CRI | Carpet and Rug Institute (The) www.carpet-rug.com | (800) 882-8846 (706) 278-3176 |

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| CRRC | www.coolroofs.org | (510) 485-7175 |
| CRSI | Concrete Reinforcing Steel Institute | (847) 517-1200 |
| CRRC | Cool Roof Rating Council www.coolroofs.org | (866) 465-2523 (510) 485-7175 |
| CSA | Canadian Standards Association www.csa.ca | (800) 463-6727 (416) 747-4000 |
| CSA | (Formerly: IAS - International Approval Services) www.csa-international.org | (416) 747-4000 |
| CSI | www.csinet.org | (703) 684-0300 |
| CSSB | Cedar Shake & Shingle Bureau | (604) 820-7700 |
| CTI | Cooling Technology Institute (Formerly: Cooling Tower Institute) | (281) 583-4087 |
| DHI | Door and Hardware Institute www.dhi.org | (703) 222-2010 |
| ECA | Electrical Components Association www.ec-central.org | (703)907-8024 |
| EIA | www.eia.org | |
| EIMA | EIFS Industry Members Association | (800) 294-3462 |
| EJCDC | Engineers Joint Contract Documents Committee http://content.asce.org/ejcdc/ | (703) 295-6000 |
| EJMA | Expansion Joint Manufacturers Association, Inc. www.ejma.org | (914) 332-0040 |
| ESD | (Electrostatic Discharge Association) www.esda.org | |
| ETL SEMCO | (Formerly: ITS - Intertek Testing Service NA) www.intertek-etlsemko.com | |

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| FIBA | (The International Basketball Federation) www.fiba.com | |
| FIVB | (The International Volleyball Federation) www.fivb.ch | |
| FM Approvals | www.fmglobal.com | |
| FM Global | FM Global www.fmglobal.com | (401) 275-3000 |
| FRSA | Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc. | (407) 671-3772 |
| FSA | Fluid Sealing Association www.fluidsealing.com | (610) 971-4850 |
| FSC | Forest Stewardship Council www.fsc.org | 49 228 367 66 0 |
| GA | www.gypsum.org | (301) 277-8686 |
| GANA | Glass Association of North America | (785) 271-0208 |
| GRI | (Part of GSI) | |
| GS | www.greenseal.org | |
| GSI | Geosynthetic Institute | (610) 522-8440 |
| HI | Hydronics Institute www.gamanet.org | (908) 464-8200 |
| HI/GAMA | Hydronics Institute/Gas Appliance Manufacturers Association Division of Air-Conditioning, Heating, and Refrigeration Institute (AHRI) www.ahrinet.org | (908) 464-8200 |
| HMMA | Hollow Metal Manufacturers Association (Part of NAAMM) | |

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| HPVA | www.hpva.org | |
| HPW | H. P. White Laboratory, Inc. | (410) 838-6550 |
| IAPSC | International Association of Professional Security Consultants www.iapsc.org | (515) 282-8192 |
| ICBO | International Conference of Building Officials www.iccsafe.org | (888) 422-7233 |
| ICEA | www.icea.net | |
| ICRI | International Concrete Repair Institute, Inc. | (847) 827-0830 |
| ICPA | International Cast Polymer Association www.icpa-hq.org | (703) 525-0320 |
| IEC | International Electrotechnical Commission www.iec.ch | 41 22 919 02 11 |
| IEEE | www.ieee.org | |
| IES | Illuminating Engineering Society of North America | (703) 525-0320 |
| IEST | Institute of Environmental Sciences and Technology www.iest.org | (847) 255-1561 |
| IGMA | Insulating Glass Manufacturers Alliance www.igmaonline.org | (613) 233-1510 |
| ILI | www.iliai.com | |
| ISA | Instrumentation, Systems, and Automation Society, The | (919) 549-8411 |
| ISO | International Organization for Standardization www.iso.ch | 41 22 749 01 11 |
| ISSFA | International Solid Surface Fabricators Association www.issfa.net | (877) 464-7732 (801) 341-7360 |
| ITS | (Now ETL SEMCO) | |

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| ITU | International Telecommunication Union | 41 22 730 51 11 |
| KCMA | Kitchen Cabinet Manufacturers Association www.kcma.org | (703) 264-1690 |
| LGSEA | Light Gauge Steel Engineers Association www.arcata.com | (202) 263-4488 |
| LMA | (Now part of CPA) | |
| LPI | Lightning Protection Institute | (800) 488-6864 |
| MBMA | Metal Building Manufacturers Association www.mbma.com | (216) 241-7333 |
| MCA | Metal Construction Association www.metalconstruction.org | (847) 375-4718 |
| MFMA | www.maplefloor.org | |
| MFMA | Metal Framing Manufacturers Association, Inc. | (312) 644-6610 |
| MH | Material Handling (Now MHIA) | |
| MHIA | Material Handling Industry of America www.mhia.org | (800) 345-1815 (704) 676-1190 |
| MIA | www.marble-institute.com | |
| MPI | Master Painters Institute | (888) 674-8937 |
| MSS | Manufacturers Standardization Society of The Valve and Fittings Industry Inc. www.mss-hq.com | (703) 281-6613 |
| NAAMM | National Association of Architectural Metal Manufacturers www.naamm.org | (630) 942-6591 |
| NACE | (National Association of Corrosion Engineers International) www.nace.org | (281) 228-6200 |

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| NADCA | www.nadca.com | |
| NAGWS | National Association for Girls and Women in Sport | (800) 213-7193, ext. 453 |
| NAIMA | North American Insulation Manufacturers Association www.naima.org | (703) 684-0084 |
| NBGQA | National Building Granite Quarries Association, Inc. www.nbgqa.com | (800) 557-2848 |
| NCAA | www.ncaa.org | |
| NCMA | National Concrete Masonry Association | (703) 713-1900 |
| NCTA | National Cable & Telecommunications Association www.ncta.com | (202) 222-2300 |
| NEBB | National Environmental Balancing Bureau www.nebb.org | (301) 977-3698 |
| NECA | www.necanet.org | |
| NeLMA | Northeastern Lumber Manufacturers' Association | (207) 829-6901 |
| NEMA | National Electrical Manufacturers Association www.nema.org | (703) 841-3200 |
| NETA | InterNational Electrical Testing Association www.netaworld.org | (888) 300-6382 (269) 488-6382 |
| NFHS | www.nfhs.org | |
| NFPA | NFPA www.nfpa.org | (800) 344-3555 |
| NFRC | National Fenestration Rating Council | (301) 589-1776 |
| NGA | National Glass Association www.glass.org | (866) 342-5642 (703) 442-4890 |
| NHLA | National Hardwood Lumber Association www.natlhardwood.org | (800) 933-0318 (901) 377-1818 |

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| NLGA | www.nlga.org | |
| NOFMA | NOFMA: The Wood Flooring Manufacturers Association www.nofma.org | (901) 526-5016 |
| NOMMA | National Ornamental & Miscellaneous Metals Association | (888) 516-8585 |
| NRCA | National Roofing Contractors Association www.nrca.net | (800) 323-9545 (847) 299-9070 |
| NRMCA | National Ready Mixed Concrete Association www.nrmca.org | (888) 846-7622 (301) 587-1400 |
| NSF | (National Sanitation Foundation International) www.nsf.org | (734) 769-8010 |
| NSSGA | www.nssga.org | (703) 525-8788 |
| NTMA | National Terrazzo & Mosaic Association, Inc. (The) | (800) 323-9736 |
| NWFA | National Wood Flooring Association www.nwfa.org | (800) 422-4556 (636) 519-9663 |
| PCI | Precast/Prestressed Concrete Institute www.pci.org | (312) 786-0300 |
| PDI | www.pdionline.org | (978) 557-0720 |
| PGI | PVC Geomembrane Institute | (217) 333-3929 |
| PTI | Post-Tensioning Institute www.post-tensioning.org | (248) 848-3180 |
| RCSC | Research Council on Structural Connections www.boltcouncil.org | |
| RFCI | www.rfci.com | (706) 882-3833 |
| RIS | Redwood Inspection Service | |

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| SAE | SAE International www.sae.org | (877) 606-7323 (724) 776-4841 |
| SCAQMD | South Coast Air Quality Management District www.aqmd.com | (909) 396-2000 |
| SCTE | www.scte.org | (610) 363-6888 |
| SDI | Steel Deck Institute | (847) 458-4647 |
| SDI | Steel Door Institute www.steeldoor.org | (440) 899-0010 |
| SEFA | Scientific Equipment and Furniture Association www.sefalabs.com | (877) 294-5424 (516) 294-5424 |
| SEI/ASCE | (See ASCE) | |
| SIA | Security Industry Association | (866) 817-8888 |
| SJI | Steel Joist Institute www.steeljoist.org | (843) 626-1995 |
| SMA | Screen Manufacturers Association www.smacentral.org | (561) 533-0991 |
| SMACNA | National Association www.smacna.org | |
| SMPTE | www.smpte.org | |
| SPFA | Spray Polyurethane Foam Alliance www.sprayfoam.org | (800) 523-6154 |
| SPIB | Southern Pine Inspection Bureau (The) | (850) 434-2611 |
| SPRI | Single Ply Roofing Industry www.spri.org | (781) 647-7026 |
| SSINA | Specialty Steel Industry of North America www.ssina.com | (800) 982-0355 (202) 342-8630 |

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| SSPC | www.sspc.org | (412) 281-2331 |
| STI | Steel Tank Institute | (847) 438-8265 |
| SWI | Steel Window Institute www.steelwindows.com | (216) 241-7333 |
| SWPA | Submersible Wastewater Pump Association www.swpa.org | (847) 681-1868 |
| TCA | www.tilt-up.org | |
| TCNA | Tile Council of North America, Inc. | (864) 646-8453 |
| TEMA | Tubular Exchanger Manufacturers Association www.tema.org | (914) 332-0040 |
| TIA/EIA | Telecommunications Industry Association/Electronic Industries Alliance www.tiaonline.org | (703) 907-7700 |
| TMS | www.masonrysociety.org | |
| TPI | Truss Plate Institute, Inc. | (703) 683-1010 |
| TPI | Turfgrass Producers International www.turfgrassod.org | (800) 405-8873 (847) 649-5555 |
| TRI | Tile Roofing Institute www.tilerroofing.org | (312) 670-4177 |
| UL | www.ul.com | (847) 272-8800 |
| UNI | Uni-Bell PVC Pipe Association | (972) 243-3902 |
| USAV | USA Volleyball www.usavolleyball.org | (888) 786-5539 (719) 228-6800 |
| USGBC | U.S. Green Building Council www.usgbc.org | (800) 795-1747 |
| USITT | www.usitt.org | (315) 463-6463 |

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| WASTEC | Waste Equipment Technology Association | (800) 424-2869 |
| WCLIB | West Coast Lumber Inspection Bureau www.wclib.org | (800) 283-1486 (503) 639-0651 |
| WCMA | Window Covering Manufacturers Association www.wcmanet.org | (212) 297-2122 |
| WDMA | (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com | (312) 321-6802 |
| WI | www.wicnet.org | |
| WMMPA | Wood Moulding & Millwork Producers Association | (800) 550-7889 |
| WSRCA | Western States Roofing Contractors Association www.wsrca.com | (800) 725-0333 (650) 570-5441 |
| WWPA | Western Wood Products Association www.wwpa.org | (503) 224-3930 |

C. 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 sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

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| DIN | www.din.de | |
| IAPMO | International Association of Plumbing and Mechanical Officials | (909) 472-4100 |
| IBC | International Building Code | |
| ICC | International Code Council www.iccsafe.org | (888) 422-7233 |
| ICC-ES | ICC Evaluation Service, Inc. www.icc-es.org | (800) 423-6587 (562) 699-0543 |

D. Federal Government 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 sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

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| COE | Army Corps of Engineers www.usace.army.mil | |
| CPSC | Consumer Product Safety Commission www.cpsc.gov | (800) 638-2772 (301) 504-7923 |
| DOC | Department of Commerce www.commerce.gov | (202) 482-2000 |
| DOD | Department of Defense http://dodssp.daps.dla.mil | (215) 697-6257 |
| DOE | Department of Energy www.energy.gov | (202) 586-9220 |
| EPA | Environmental Protection Agency | (202) 272-0167 |
| FAA | Federal Aviation Administration www.faa.gov | (866) 835-5322 |
| FCC | Federal Communications Commission www.fcc.gov | (888) 225-5322 |
| FDA | www.fda.gov | |
| GSA | General Services Administration | (800) 488-3111 |
| HUD | Department of Housing and Urban Development www.hud.gov | (202) 708-1112 |
| LBL | Lawrence Berkeley National Laboratory www.lbl.gov | (510) 486-4000 |
| NCHRP | (See TRB) | |
| NIST | National Institute of Standards and Technology | (301) 975-6478 |
| OSHA | Occupational Safety & Health Administration www.osha.gov | (800) 321-6742 (202) 693-1999 |
| PBS | Public Buildings Service (See GSA) | |
| PHS | http://www.hhs.gov/ophis/ | |

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| RUS | Rural Utilities Service | (202) 720-9540 |
| SD | State Department www.state.gov | (202) 647-4000 |
| TRB | Transportation Research Board http://gulliver.trb.org | (202) 334-2934 |
| USDA | www.usda.gov | |
| USP | U.S. Pharmacopeia | (800) 227-8772 |
| USPS | Postal Service www.usps.com | (202) 268-2000 |

E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

| | | |
|---------|--|----------------------------------|
| ADAAG | Americans with Disabilities Act (ADA) Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities Available from U.S. Access Board www.access-board.gov | (202) 272-0080 |
| CFR | Code of Federal Regulations Available from Government Printing Office www.gpoaccess.gov/cfr/index.html | (866) 512-1800 (202) 512-1800 |
| DOD | Department of Defense Military Specifications and Standards Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil | (215) 697-2664 |
| DSCC | Defense Supply Center Columbus (See FS) | |
| FED-STD | Federal Standard (See FS) | |
| FS | Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil/ www.dsp.dla.mil Available from General Services Administration | (202) 619-8925 |

Available from National Institute of Building Sciences
www.wbdg.org/ccb

(202) 289-7800

FTMS Federal Test Method Standard
(See FS)

MIL
(See MILSPEC)
MIL-STD

MILSPEC Available from Department of Defense Single Stock Point
<http://dodssp.daps.dla.mil>

UFAS Available from Access Board
www.access-board.gov

(202) 272-0080

F. State Government 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 sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

| | | |
|------|--|----------------|
| ADEQ | Arkansas Department of Environmental Quality | (501) 682-0923 |
| ADH | Arkansas Department of Health | (501) 661-2000 |
| FMD | Facilities Management Dept., UAF | (479) 575-6192 |
| UA | University of Arkansas | (479) 575-2000 |
| UAF | University of Arkansas, Fayetteville | |

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Division 01 Section "Summary" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the JOC Contract Sum unless otherwise directed. Allow other entities to use temporary services and facilities without cost, including, but not limited to Construction Coordinator, Design Professional, testing agencies, and authorities having jurisdiction.
- B. Sewer Service: Pay sewer-service use charges for sewer usage by all entities for construction operations.
- C. Water Service: Pay water-service use charges for water used by all entities for construction operations.
- D. Electric Power Service: Pay electric-power-service use charges for electricity used by all entities for construction operations.
- E. Water Service from Existing System: Water from Owner's existing water system is available for use with metering and with payment of use charges. Provide meter connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

- B. Erosion- and Sedimentation-Control Plan: Show compliance with Job Order Drawings and requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- D. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 - 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- E. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
 - 1. Locations of dust-control partitions at each phase of work.
 - 2. HVAC system isolation schematic drawing.
 - 3. Location of proposed air-filtration system discharge.
 - 4. Waste handling procedures.
 - 5. Other dust-control measures.
- F. UV Protection Plan: Store PVC pipe and other UV-sensitive materials away from direct sunlight.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.

1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its

use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top rails with galvanized barbed-wire top strand.
- B. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide concrete bases for supporting posts.
- C. Wood Enclosure Fence: Plywood, 8 feet high, framed with four 2-by-4-inch rails, with preservative-treated wood posts spaced not more than 8 feet apart.
- D. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.
- E. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.
- F. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Not required unless specifically stated in JOC Job Order.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations as needed by JOC Contractor.
 - 1. Store combustible materials apart from building.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
 3. Permanent HVAC System: Not used for JOC Contracts unless specifically allowed for in Job Order documents.
- C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary" and as approved by Owner.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Sanitary Drainage: Not used for JOC Contracts.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Water Service: Connect to Owner's existing water service facilities with metered connection. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
1. Toilets: Use of Owner's existing toilet facilities will not be permitted.
- F. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low

temperatures. Select equipment that will not have a harmful effect on completed installations or elements being installed.

- G. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
 - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed.
 - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
 - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
 - 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
 - 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- H. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- I. Electric Power Service: Arrange power directly with local service provider.
- J. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - 1. Install electric power service overhead unless otherwise indicated.
- K. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- L. Telephone Service: Not normally required for JOC project unless specifically called for in Job Order.
 - 1. Provide superintendent with cellular telephone for use during project.
- M. Electronic Communication Service: Not applicable unless Job Order specifically requires a Field Office on Project Site.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:

1. Provide construction for temporary shops and/or sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
 2. Maintain support facilities until Design Professional schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas as indicated on Drawings or as approved by Owner.
1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
- C. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 2. Prepare subgrade and install subbase and base for temporary roads and paved areas as shown on Drawings.
 3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
 4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Job Order documents.
- D. Traffic Controls: Comply with requirements of authorities having jurisdiction.
1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- E. Parking: Provide temporary parking on Project Site or purchase permits to use designated areas of Owner's existing parking facilities for construction personnel.
- F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project Site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.
- G. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
1. Identification Signs: Provide Project identification signs if/as indicated on Drawings.
 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

- a. Provide temporary, directional signs for construction personnel and visitors.
 - 3. Maintain and touchup signs so they are legible at all times.
 - H. Waste Disposal Facilities: Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
 - I. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Division 01 Section "Execution."
 - J. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
 - K. Temporary Elevator Use: Not Used.
 - L. Existing Elevator Use: Use of Owner's existing elevators will be permitted, provided elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
 - 1. Do not load elevators beyond their rated weight capacity.
 - 2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
 - M. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
 - N. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
 - O. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.
- 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION
- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Division 01 Section "Summary."
- C. Temporary Erosion and Sedimentation Control: Comply with requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
- D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion-control Drawings and requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
 - 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
 - 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
 - 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 - 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- E. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- F. Tree and Plant Protection: Comply with requirements specified in Division 01.
- G. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- H. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
- I. Site Enclosure Fence: When called for by the approved Job Order, before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
- J. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.

- K. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- L. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- M. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project Site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction and requirements indicated on Drawings.
 - 1. Construct covered walkways using scaffold or shoring framing.
 - 2. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
 - 3. Paint and maintain appearance of walkway for duration of the Work.
- N. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- O. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and tenants from fumes and noise.
 - 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
 - 2. Construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
 - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.
 - 3. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
 - 4. Insulate partitions to control noise transmission to occupied areas.
 - 5. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
 - 6. Protect air-handling equipment.
 - 7. Provide walk-off mats at each entrance through temporary partition.
- P. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
 - 1. Prohibit smoking anywhere on Owner's campus/property.

2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
 1. Protect porous materials from water damage.
 2. Protect stored and installed material from flowing or standing water.
 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 4. Remove standing water from decks.
 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
 1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 2. Keep interior spaces reasonably clean and protected from water damage.
 3. Periodically collect and remove waste containing cellulose or other organic matter.
 4. Discard or replace water-damaged material.
 5. Do not install material that is wet.
 6. Discard, replace, or clean stored or installed material that begins to grow mold.
 7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
 1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Use permanent HVAC system to control humidity.
 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
 - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
 - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of

exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Design Professional.

- c. Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Not Used.
- D. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- E. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - 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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Division 01 Section "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for 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 number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," 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 additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 - 2. Design Professional's Action: If necessary, Design Professional will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Design Professional will notify Contractor through Construction Coordinator of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
 - b. Use product specified if Design Professional does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
 - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Design Professional will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project 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 Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. **Manufacturer's Warranty:** Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. **Special Warranty:** Written warranty required by the Contract Documents to provide specific rights for Owner.

- B. **Special Warranties:** Prepare a written document that contains appropriate terms and identification, ready for execution.

1. **Manufacturer's Standard Form:** Modified to include Project-specific information and properly executed.
2. **Specified Form:** When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.

- C. **Submittal Time:** Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. **General Product Requirements:** Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Design Professional will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Drawings or Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Drawings or Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:
 - a. Restricted List: Where Drawings or Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable

Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- C. Visual Matching Specification: Where Drawings or Specifications require "match Design Professional's sample", provide a product that complies with requirements and matches Design Professional's sample. Design Professional's decision will be final on whether a proposed product matches.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Design Professional from manufacturer's full range" or similar phrase, select a product that complies with requirements. Design Professional will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Design Professional will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Design Professional may return requests without action, except to record noncompliance with these requirements:
 - 1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Contract Documents. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of Design Professionals and owners, if requested.
 - 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

- B. Related Requirements:

1. Division 01 Section "Summary" for limits on use of Project site.
2. Division 01 Section "Submittal Procedures" for submitting surveys.
3. Division 01 Section "Closeout Procedures" for recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Professional Land Surveyor and Professional Engineer.
- B. Certificates: Submit certificate signed by Professional Land Surveyor or Professional Engineer certifying that location and elevation of improvements comply with requirements.

- C. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
 - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
 - 3. Products: List products to be used for patching and firms or entities that will perform patching work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- D. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- E. Certified Surveys: Submit two copies signed by Professional Land Surveyor.
- F. Final Property Survey: Normally not required unless Job Order specifically calls for property survey. Submit 3 stamped copies showing the Work performed and record survey data.

1.5 QUALITY ASSURANCE

- A. Professional Land Surveyor Qualifications: A Professional Land Surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Design Professional of locations and details of cutting and await directions from Design Professional before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
 - a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.

- e. Mechanical systems piping and ducts.
 - f. Control systems.
 - g. Communication systems.
 - h. Fire-detection and -alarm systems.
 - i. Conveying systems.
 - j. Electrical wiring systems.
 - k. Operating systems of special construction.
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
- a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Sprayed fire-resistive material.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels, and equipment.
 - g. Noise- and vibration-control elements and systems.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Design Professional's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
 - 1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with requirements in Division 01 sustainable design requirements Section.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Design Professional for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work. Follow Arkansas One-Call requirements where applicable.
 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, 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. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 1. Description of the Work.
 2. List of detrimental conditions, including substrates.
 3. List of unacceptable installation tolerances.
 4. Recommended corrections.
- D. 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 Owner 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. Coordinate with authorities having jurisdiction.

- B. 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.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Design Professional according to requirements in Division 01 Section "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Design Professional and Construction Coordinator promptly.
- B. General: Engage a Land Surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Design Professional and Construction Coordinator when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Design Professional and Construction Coordinator.

3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Design Professional or Construction Coordinator. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Design Professional and Construction Coordinator before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- E. Final Property Survey: Not Used, unless specifically required by Job Order.

3.5 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.
 - 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- 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. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Design Professional.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. 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.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements on Drawings and in applicable Specifications where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
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 Owner if changes to schedule are required due to differences in actual construction progress.
 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.8 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. 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 waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- 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 in Finished Areas:** Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. **Waste Disposal:** Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls." and Division 01 Section "Construction Waste Management and Disposal."
- H. **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.
- I. **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.
- J. **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.

3.9 STARTING AND ADJUSTING

- A. **Coordinate startup and adjusting of equipment and operating components** with requirements in Division 01 Section "General Commissioning Requirements."
- B. **Start equipment and operating components** to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. **Adjust equipment for proper operation.** Adjust operating components for proper operation without binding.
- D. **Test each piece of equipment to verify proper operation.** Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. **Manufacturer's Field Service:** Comply with qualification requirements in Division 01 Section "Quality Requirements."

3.10 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.

END OF SECTION 017300

SECTION 017330

CONTROL OF WELDING, CUTTING, AND BRAZING

PURPOSE:

The following policy and operating procedures are established to ensure that the University of Arkansas complies with state and federal regulations for safe control of welding, cutting and brazing work operations.

REFERENCES:

For the purpose of establishing a policy that insures full compliance with state and federal regulations, the following publications are adopted by reference.

29 CFR 1910.252 Subpart Q, Occupational Safety and Health Administration (OSHA) General Requirements – Welding, Cutting and Brazing.

OSHA 29 CFR 1926 Subpart J – Welding and Cutting (1926.350 to 1926.354).

NFPA 51B – Fire Prevention in the Use of Cutting and Welding Processes.

DEFINITIONS:

1. Welder – means any operator of electric or gas welding and cutting equipment also brazing and open flame soldering. All other welding terms are used in accordance with the American Welding Society.
2. A hot work permit program – is the process of controlling any operation where heat, sparks or flames are created during the work process. The hot work permit authorizes this hot work.
3. A Hot Work Permit – is the device used to document this process. It can be in the form of a simple one-page document. See attachment 1.

GENERAL REQUIREMENTS:

Fire Prevention and Protection – The basic precautions for fire prevention in welding and cutting work are:

1. Fire Hazards. If the object to be welded, brazed, soldered, or cut cannot readily be moved, all moveable fire hazards (flammable materials) in the vicinity shall be taken to a safe place.
2. Guards. If the object to be welded, brazed, soldered, or cut cannot be moved and if all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks and slag and to protect the immovable fire hazards.

A hot work permit will not be required in designated areas where these screens are utilized to prevent fire hazards such as the Welding Shop, A/C Shop, Co-Gen Shop, Garage Shop, Plumbing Shop and the Electrician Shop, or areas on campus where moveable fire safety screens are used when hot works processes are carried out.

3. Restrictions. If the requirements mentioned above cannot be followed, then welding, brazing, open flame soldering, and cutting shall not be performed.

4. Special Precautions. When the work to be performed requires guards, certain additional precautions may be necessary:

- a. Combustible Material. Whenever there are openings or cracks in the floor, precautions shall be taken so that no readily combustible materials on the floor below will be exposed to sparks which might drop through the floor. The same precautions should be observed for cracks or holes in walls, open doorways and open or broken windows.
- b. Fire Extinguisher. Suitable fire extinguishing equipment shall be maintained in a state of rediness. Pails of water, buckets of sand, hose or portable extinguishers shall be used.
- c. Fire Watch. Fire watchers shall be required whenever welding, brazing, open flame soldering, or cutting is performed in locations where a fire might develop or any of the following conditions exists:
 - 1) Appreciable combustible material in building construction or contents closer than 35 feet to the point of operation.
 - 2) Appreciable combustibles are more than 35 feet away but are easily ignited by sparks.
 - 3) Wall or floor openings within a 35 foot radius expose combustible material in adjacent areas including concealed spaces in walls and floors.
 - 4) Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs, and are likely to be ignited by conduction or radiation.

Fire watchers shall have fire extinguishing equipment readily available and be trained in its use. In situations that require a hot work permit, a fire watch shall be maintained for up to 4 hours after completion of welding, brazing, open flame soldering, or cutting operations to detect and extinguish possible smoldering fires. When the hot work mechanic is certain that there is no possibility of smoldering fires, the fire watch may be terminated.

5. Authorization. When the presence of Fire Hazards require the issuance of a Hot Work Permit, the shop supervisor in charge of the cutting, welding, brazing, or open flame soldering project shall inspect the area on campus where the hot work will take place and complete the hot work permit form (both sides). He/She will then present the permit form to the Director of Facilities Operations, or in his absence, his designate, for his signature, thereby authorizing the hot work permit. This form will be kept at the hot work site until the job is completed and then will be logged and filed in the Director of Facilities Operation's office. The trade shop performing the work may wish to file a copy in their shop supervisor's office. (See attachment #1.)

In the event that hot work is required to be accomplished after normal working hours or on weekends or holidays, verbal authorization may be acquired via pager and telephone from the Director of Facilities Operations on an emergency basis. The Hot Work Permit Form will then be filled out and signed on the next work day.

6. Floors. Combustible floors shall be kept wet, covered with damp sand or protected by fire-resistant shields. Personnel operating arc welding or cutting equipment shall be protected from possible shock.

7. Prohibited Areas. Cutting or welding shall not be permitted in the following areas:

- a. In areas not authorized by management.

- b. In sprinkled buildings while such protection is impaired.
- c. In the presence of explosive atmospheres.
- d. In areas near the storage of large quantities of exposed, readily ignitable materials such as bulk sulfur, baled paper, or gasoline etc.

8. Relocation of Combustibles. Where practicable, all combustibles shall be relocated at least 35 feet from the work site. Where relocation is impractical, combustibles shall be protected with flameproof screens.

9. Ducts. Ducts that might carry sparks to distant combustibles shall be suitably protected or shut down.

10. Walls.

- a. Combustible Walls. Fire resistant shields or guards shall be provided to prevent ignition.
- b. Noncombustible Walls. Precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation, preferably by relocating combustibles. Where combustibles are not relocated, a fire watch on the opposite side from the work shall be provided.

11. Combustible Cover. Welding shall not be attempted on a metal partition, wall, ceiling, or roof having a combustible covering nor on walls or partitions of combustible sandwich-type panel construction.

12. Pipes. Cutting, brazing, open flame soldering, or welding on pipes or other metal in contact with combustible walls, partitions, ceilings, or roofs shall not be undertaken if the work is loose enough to cause ignition by conduction.

13. Used Containers. No welding, cutting, or other hot work shall be performed on used drums, barrels, tanks, or other containers until they have been cleaned up thoroughly as to make absolutely certain that there are no flammable materials present.

RESPONSIBILITIES:

1. Management. Management shall recognize its responsibility for the safe usage of cutting and welding equipment on campus and:
 - a. Designate an individual responsible for authorizing cutting, brazing, open flame soldering, and welding operations in areas not specifically designed for such processes.
 - b. Insist that cutters, braziers, solderers or welders and their supervisors are suitably trained in the safe operation of their equipment and the safe use of the processes.
 - c. Advise all contractors about flammable materials or hazardous conditions of which they may not be aware.
2. The Supervisor. The supervisor shall:
 - a. Be responsible for the safe storage handling and use of the cutting, brazing, open flame soldering, or welding equipment.
 - b. Determine the combustible materials and hazards present in the work location.
 - c. Protect combustibles from ignition by the following:
 - 1) Have the work moved to a location free from dangerous combustibles.
 - 2) Have the combustibles moved to a safe distance from the work or have the combustibles properly shielded against ignition.

- 3) See that work operations that might expose combustibles to ignition are not started during cutting or welding.
 - 4) Secure authorization for the cutting or welding operations from the designated management representative.
 - 5) List the employees in their shop that are authorized to perform the various hot work tasks.
 - 6) Determine that conditions are safe before going ahead.
 - 7) Determine fire protection and extinguishing equipment are located at the site.
 - 8) See that fire watches are available at the site, where required.
- d. Inform the Tech Services Shop before hot work begins so that the fire suppression system can be disabled in the affected building. After the job is completed, inform Tech Services so that the fire suppression system can be re-enabled.

3. Workers – Cutters, Braziers, Solderers, and Welders will do the following:

- 4. Outside contractors shall comply with the Facilities Management Department’s hot work permit policy and procedure statement or use a policy that meets or exceeds this policy and shall provide a copy of said policy to the Director of Facilities Operations prior to the start of work.
- 5. Other departments, such as Technology and Agriculture, which use hot works process, shall comply with this program or use an equal hot work permit system.

TRAINING:

All Facilities Management Department employees who engage in welding, cutting, brazing or open flame soldering activities, shall attend a one-time training session in which this policy will be presented by the Facilities Training Coordinator. A review of safe oxyacetylene procedures will be included in this training session. As new employees who are required to engage in these activities are hired, they will be required to attend a training session covering this policy and safe oxyacetylene procedures. Also at any time a supervisor want his/her shop employees to review this policy and/or safe oxyacetylene procedures, the training coordinator will present an appropriate training session.

REVIEW AND REVISION OF HOT WORKS POLICY:

This Facilities Policy and Procedure Statement (FPPS) will be reviewed and revised if necessary during June of each even numbered year. Major responsibilities associated with this FPPS include the following individuals in their official capacities and represents University of Arkansas policy, and procedure from the date of this document until suspended.

Approved: _____

Approved: _____

HOT WORK PERMIT

**BEFORE INITIATING HOT WORK, CAN THIS JOB BE AVOIDED?
IS THERE A SAFER WAY?**

This Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Torch Applied Roofing and Welding.

| INSTRUCTIONS | PART 1 | REQUIRED PRECAUTIONS CHECKLIST | | | | |
|--|-----------------------|---|------------|----------|--|--|
| <p>1. Firesafety supervisor:</p> <p>A. Verify precautions listed at right (or do not proceed with the work).</p> <p>B. Complete and retain Part 1. (Part 1A is a copy for expanded hot work awareness).</p> <p>C. Issue Part 2 to person doing job.</p> | | <div style="border: 1px solid black; padding: 5px; text-align: center; font-weight: bold; font-size: 1.2em;">5844324</div> <ul style="list-style-type: none"> <input type="checkbox"/> Available sprinklers, hose streams and extinguishers are in service/operable. <input type="checkbox"/> Hot Work equipment in good repair. <p>Requirements within 35 ft (11 m) of work</p> <ul style="list-style-type: none"> <input type="checkbox"/> Flammable liquids, dust, lint and oily deposits removed. <input type="checkbox"/> Explosive atmosphere in area eliminated. <input type="checkbox"/> Floors swept clean. <input type="checkbox"/> Combustible floors wet down, covered with damp sand or fire-resistive sheets. <input type="checkbox"/> Remove other combustibles where possible. Otherwise protect with FM approved welding pads, blankets, and curtains, fire-resistive tarpaulins or metal shields. <input type="checkbox"/> All wall and floor openings covered. <input type="checkbox"/> FM Approved welding pads, blankets, and curtains installed under and around work. <input type="checkbox"/> Protect or shut down ducts and conveyors that might carry sparks to distant combustibles. <p>Work on walls, ceilings or roofs</p> <ul style="list-style-type: none"> <input type="checkbox"/> Construction is noncombustible and without combustible covering or insulation. <input type="checkbox"/> Combustibles on other side of walls, ceilings or roofs are moved away. <p>Work on enclosed equipment</p> <ul style="list-style-type: none"> <input type="checkbox"/> Enclosed equipment cleaned of all combustibles. <input type="checkbox"/> Containers purged of flammable liquids/vapors. <input type="checkbox"/> Pressurized vessels, piping and equipment removed from service, isolated and vented. <p>Fire watch/Hot Work area monitoring</p> <ul style="list-style-type: none"> <input type="checkbox"/> Fire watch will be provided during and for 60 minutes after work, including any coffee or lunch breaks. <input type="checkbox"/> Fire watch is supplied with suitable extinguishers, and where practical, a charged small hose. <input type="checkbox"/> Fire watch is trained in use of equipment and in sounding alarm. <input type="checkbox"/> Fire watch may be required in adjoining areas, above and below. <input type="checkbox"/> Monitor Hot Work area for 3 hours after job is completed. <p>Other Precautions Taken:</p> <ul style="list-style-type: none"> <input type="checkbox"/> _____ | | | | |
| <p>HOT WORK BEING DONE BY</p> <p><input type="checkbox"/> EMPLOYEE</p> <p><input type="checkbox"/> CONTRACTOR</p> | | | | | | |
| <p>DATE _____</p> <p>JOB NUMBER _____</p> | | | | | | |
| <p>LOCATION/BUILDING AND FLOOR _____</p> | | | | | | |
| <p>NATURE OF JOB _____</p> | | | | | | |
| <p>NAME OF PERSON DOING HOT WORK _____</p> | | | | | | |
| <p>I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.</p> | | | | | | |
| <p>SIGNED (Firesafety Supervisor/Operations Supervisor) _____</p> | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">PERMIT EXPIRES</td> <td style="width: 25%;">DATE _____</td> <td style="width: 25%;">TIME _____</td> <td style="width: 25%; text-align: center;">AM PM</td> </tr> </table> | PERMIT EXPIRES | DATE _____ | TIME _____ | AM PM | | |
| PERMIT EXPIRES | DATE _____ | TIME _____ | AM PM | | | |
| <p>NOTE: EMERGENCY NOTIFICATION ON BACK OF FORM. USE AS APPROPRIATE FOR YOUR FACILITY.</p> | | | | | | |
|  <p>F2630 (REV. 4/05) PRINTED IN USA (4/05) © 2003 Factory Mutual Insurance Company All rights reserved.</p> | | | | | | |

WARNING!

HOT WORK IN PROGRESS WATCH FOR FIRE!

INSTRUCTIONS

1. **Person doing Hot Work:** Indicate time started and post permit at Hot Work location. After Hot Work, indicate time completed and leave permit posted for Fire Watch.
2. **Fire Watch:** Prior to leaving area, do final inspection, sign, leave permit posted and notify Firesafety Supervisor.
3. **Monitor:** After 3 hours, do final inspection, sign and return to Firesafety Supervisor.

PART 2

REQUIRED PRECAUTIONS CHECKLIST

- Available sprinklers, hose streams and extinguishers are in service/operable.
- Hot Work equipment in good repair.
- Requirements within 35 ft (11 m) of work**
- Flammable liquids, dust, lint and oily deposits removed.
- Explosive atmosphere in area eliminated.
- Floors swept clean.
- Combustible floors wet down, covered with damp sand or fire-resistive sheets.
- Remove other combustibles where possible. Otherwise protect with FM approved welding pads, blankets, and curtains, fire-resistive tarpaulins or metal shields.
- All wall and floor openings covered.
- FM Approved welding pads, blankets, and curtains installed under and around work.
- Protect or shut down ducts and conveyors that might carry sparks to distant combustibles.

Work on walls, ceilings or roofs

- Construction is noncombustible and without combustible covering or insulation.
- Combustibles on other side of walls, ceilings or roofs are moved away.

Work on enclosed equipment

- Enclosed equipment cleaned of all combustibles.
- Containers purged of flammable liquids/vapors.
- Pressurized vessels, piping and equipment removed from service, isolated and vented.

Fire watch/Hot Work area monitoring

- Fire watch will be provided during and for 60 minutes after work, including any coffee or lunch breaks.
- Fire watch is supplied with suitable extinguishers, and where practical, a charged small hose.
- Fire watch is trained in use of equipment and in sounding alarm.
- Fire watch may be required in adjoining areas, above and below.
- Monitor Hot Work area for 3 hours after job is completed.

Other Precautions Taken:

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| | |
|--|---|
| HOT WORK BEING DONE BY | |
| <input type="checkbox"/> EMPLOYEE | |
| <input type="checkbox"/> CONTRACTOR | |
| DATE | JOB NUMBER |
| LOCATION/BUILDING AND FLOOR | |
| NATURE OF JOB | |
| NAME OF PERSON DOING HOT WORK | |
| <p>I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.</p> | |
| SIGNED (Firesafety Supervisor/Operations Supervisor) | |
| TIME STARTED | TIME FINISHED |
| <input type="checkbox"/> AM <input type="checkbox"/> PM | <input type="checkbox"/> AM <input type="checkbox"/> PM |
| PERMIT EXPIRES | DATE |
| | TIME |
| | AM PM |
| <p>FIRE WATCH SIGNOFF: Work area and all adjacent areas to which sparks and heat might have spread were inspected during the watch period and were found fire safe.</p> | |
| Signed: _____ | |
| <p>FINAL CHECKUP: Work area was monitored for 3 hours following Hot Work and found fire safe.</p> | |
| Signed: _____ | |

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.
- B. Related Requirements:
 - 1. Division 01 Section "Multiple Contract Summary" for coordination of responsibilities for waste management.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:

1. Demolition Waste:
 - a. Asphalt paving.
 - b. Concrete.
 - c. Concrete reinforcing steel.
 - d. Brick.
 - e. Concrete masonry units.
 - f. Wood studs.
 - g. Wood joists.
 - h. Plywood and oriented strand board.
 - i. Wood paneling.
 - j. Wood trim.
 - k. Structural and miscellaneous steel.
 - l. Rough hardware.
 - m. Roofing.
 - n. Insulation.
 - o. Doors and frames.
 - p. Door hardware.
 - q. Windows.
 - r. Glazing.
 - s. Metal studs.
 - t. Gypsum board.
 - u. Acoustical tile and panels.
 - v. Carpet.
 - w. Carpet pad.
 - x. Demountable partitions.
 - y. Equipment.
 - z. Cabinets.
 - aa. Plumbing fixtures.
 - bb. Piping.
 - cc. Supports and hangers.
 - dd. Valves.
 - ee. Sprinklers.
 - ff. Mechanical equipment.
 - gg. Refrigerants.
 - hh. Electrical conduit.
 - ii. Copper wiring.
 - jj. Lighting fixtures.
 - kk. Lamps.
 - ll. Ballasts.
 - mm. Electrical devices.
 - nn. Switchgear and panelboards.
 - oo. Transformers.

2. Construction Waste:

- a. Masonry and CMU.
- b. Lumber.
- c. Wood sheet materials.
- d. Wood trim.
- e. Metals.
- f. Roofing.
- g. Insulation.
- h. Carpet and pad.
- i. Gypsum board.
- j. Piping.
- k. Electrical conduit.
- l. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1) Paper.
 - 2) Cardboard.
 - 3) Boxes.
 - 4) Plastic sheet and film.
 - 5) Polystyrene packaging.
 - 6) Wood crates.
 - 7) Plastic pails.

1.5 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 7 days of date established for commencement of the Work.

1.6 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use Form CWM-7 for construction waste and Form CWM-8 for demolition waste. Include the following information:
1. Material category.
 2. Generation point of waste.
 3. Total quantity of waste in tons.
 4. Quantity of waste salvaged, both estimated and actual in tons.
 5. Quantity of waste recycled, both estimated and actual in tons.
 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

- C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. LEED Submittal: LEED letter template for Credit MR 2, signed by Contractor, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met.
- H. Qualification Data: For waste management coordinator and refrigerant recovery technician.
- I. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.7 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of projects with similar requirements, that employs a LEED-Accredited Professional, certified by the USGBC, as waste management coordinator. Waste management coordinator may also serve as LEED coordinator.
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- C. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 1. Review and discuss waste management plan including responsibilities of waste management coordinator.
 2. Review requirements for documenting quantities of each type of waste and its disposition.
 3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.

5. Review waste management requirements for each trade.

1.8 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing and construction waste generated by the Work. Use Form CWM-1 for construction waste and Form CWM-2 for demolition waste. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Use Form CWM-3 for construction waste and Form CWM-4 for demolition waste. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.
- D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Use Form CWM-5 for construction waste and Form CWM-6 for demolition waste. Include the following:
 1. Total quantity of waste.
 2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
 3. Total cost of disposal (with no waste management).
 4. Revenue from salvaged materials.
 5. Revenue from recycled materials.
 6. Savings in hauling and tipping fees by donating materials.
 7. Savings in hauling and tipping fees that are avoided.
 8. Handling and transportation costs. Include cost of collection containers for each type of waste.

9. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 1. Comply with operation, termination, and removal requirements in Division 01 Section "Temporary Facilities and Controls."
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
 1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 2. Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.
- E. Waste Management in Historic Zones or Areas: Hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, by 12 inches or more.

3.2 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
 1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 3. Store items in a secure area until installation.
 4. Protect items from damage during transport and storage.

5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- B. Salvaged Items for Sale and Donation: Not permitted on Project site.
 - C. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
 1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner.
 5. Protect items from damage during transport and storage.
 - D. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.
 - E. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
 - F. Plumbing Fixtures: Separate by type and size.
 - G. Lighting Fixtures: Separate lamps by type and protect from breakage.
 - H. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Receivers and Processors: List will be provided with each Job Order:
- C. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall be shared equally by Owner and Contractor.
- D. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- E. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
 1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

- A. Asphalt Paving: Grind asphalt to maximum 4-inch size.
 1. Crush asphaltic concrete paving and screen to comply with requirements for use as general fill.
- B. Asphalt Paving: As alternative to grinding/crushing, break up and transport paving to asphalt-recycling facility.
- C. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
 1. Pulverize concrete to maximum 4-inch size for use as satisfactory fill or subbase.
- D. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
 1. Pulverize masonry to maximum 4-inch size for use as general fill.
 2. Clean and stack undamaged, whole masonry units on wood pallets.
- E. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- F. Metals: Separate metals by type.
 1. Structural Steel: Stack members according to size, type of member, and length.
 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- G. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.
- H. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- I. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
- J. Metal Suspension System: Separate metal members including trim, and other metals from acoustical panels and tile and sort with other metals.
- K. Carpet: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.

1. Store clean, dry carpet in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- L. Carpet Tile: Remove debris, trash, and adhesive.
 1. Stack tile on pallet and store clean, dry carpet in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- M. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- N. Conduit: Reduce conduit to straight lengths and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 2. Polystyrene Packaging: Separate and bag materials.
 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Wood Materials:
 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces or salvage for fireplace starter wood.
 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.
 1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.6 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.

- C. Burning: Not Used.
- D. Disposal: Not Used.
- E. Disposal: Remove waste materials from Owner's property and legally dispose of them.

3.7 ATTACHMENTS

- A. Form CWM-1 for construction waste identification.
- B. Form CWM-2 for demolition waste identification.
- C. Form CWM-3 for construction waste reduction work plan.
- D. Form CWM-4 for demolition waste reduction work plan.
- E. Form CWM-5 cost/revenue analysis of construction waste reduction work plan.
- F. Form CWM-6 cost/revenue analysis of demolition waste reduction work plan.
- G. Form CWM-7 for construction waste
- H. Form CWM-8 for demolition waste.

END OF SECTION 017419

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| FORM CWM-1: CONSTRUCTION WASTE IDENTIFICATION | | | | | | | |
|---|------------------|--|--------------------|---|---------------------|---------------------------|-------------------------|
| MATERIAL CATEGORY | GENERATION POINT | EST. QUANTITY OF MATERIALS RECEIVED* (A) | EST. WASTE - % (B) | TOTAL EST. QUANTITY OF WASTE* (C = A x B) | EST. VOLUME CY (CM) | EST. WEIGHT TONS (TONNES) | REMARKS AND ASSUMPTIONS |
| Packaging: Cardboard | | | | | | | |
| Packaging: Boxes | | | | | | | |
| Packaging: Plastic Sheet or Film | | | | | | | |
| Packaging: Polystyrene | | | | | | | |
| Packaging: Pallets or Skids | | | | | | | |
| Packaging: Crates | | | | | | | |
| Packaging: Paint Cans | | | | | | | |
| Packaging: Plastic Pails | | | | | | | |
| Site-Clearing Waste | | | | | | | |
| Masonry or CMU | | | | | | | |
| Lumber: Cut-Offs | | | | | | | |
| Lumber: Warped Pieces | | | | | | | |
| Plywood or OSB (scraps) | | | | | | | |
| Wood Forms | | | | | | | |
| Wood Waste Chutes | | | | | | | |
| Wood Trim (cut-offs) | | | | | | | |
| Metals | | | | | | | |
| Insulation | | | | | | | |
| Roofing | | | | | | | |
| Joint Sealant Tubes | | | | | | | |
| Gypsum Board (scraps) | | | | | | | |
| Carpet and Pad (scraps) | | | | | | | |
| Piping | | | | | | | |
| Electrical Conduit | | | | | | | |
| Other: | | | | | | | |

* Insert units of measure.

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| FORM CWM-2: DEMOLITION WASTE IDENTIFICATION | | | | |
|---|---------------|------------------------|------------------------------|-------------------------|
| MATERIAL DESCRIPTION | EST. QUANTITY | EST. VOLUME CY (CM) | EST. WEIGHT TONS (TONNES) | REMARKS AND ASSUMPTIONS |
| Asphaltic Concrete Paving | | | | |
| Concrete | | | | |
| Brick | | | | |
| CMU | | | | |
| Lumber | | | | |
| Plywood and OSB | | | | |
| Wood Paneling | | | | |
| Wood Trim | | | | |
| Miscellaneous Metals | | | | |
| Structural Steel | | | | |
| Rough Hardware | | | | |
| Insulation | | | | |
| Roofing | | | | |
| Doors and Frames | | | | |
| Door Hardware | | | | |
| Windows | | | | |
| Glazing | | | | |
| Acoustical Tile | | | | |
| Carpet | | | | |
| Carpet Pad | | | | |
| Demountable Partitions | | | | |
| Equipment | | | | |
| Cabinets | | | | |
| Plumbing Fixtures | | | | |
| Piping | | | | |
| Piping Supports and Hangers | | | | |
| Valves | | | | |
| Sprinklers | | | | |
| Mechanical Equipment | | | | |
| Electrical Conduit | | | | |
| Copper Wiring | | | | |
| Light Fixtures | | | | |
| Lamps | | | | |
| Lighting Ballasts | | | | |
| Electrical Devices | | | | |
| Switchgear and Panelboards | | | | |
| Transformers | | | | |
| Other: | | | | |

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| FORM CWM-3: CONSTRUCTION WASTE REDUCTION WORK PLAN | | | | | | |
|--|------------------|--|------------------------------------|------------------------------------|--|--------------------------------------|
| MATERIAL CATEGORY | GENERATION POINT | TOTAL EST. QUANTITY OF WASTE TONS (TONNES) | DISPOSAL METHOD AND QUANTITY | | | HANDLING AND TRANSPORTION PROCEDURES |
| | | | EST. AMOUNT SALVAGED TONS (TONNES) | EST. AMOUNT RECYCLED TONS (TONNES) | EST. AMOUNT DISPOSED TO LANDFILL TONS (TONNES) | |
| Packaging: Cardboard | | | | | | |
| Packaging: Boxes | | | | | | |
| Packaging: Plastic Sheet or Film | | | | | | |
| Packaging: Polystyrene | | | | | | |
| Packaging: Pallets or Skids | | | | | | |
| Packaging: Crates | | | | | | |
| Packaging: Paint Cans | | | | | | |
| Packaging: Plastic Pails | | | | | | |
| Site-Clearing Waste | | | | | | |
| Masonry or CMU | | | | | | |
| Lumber: Cut-Offs | | | | | | |
| Lumber: Warped Pieces | | | | | | |
| Plywood or OSB (scraps) | | | | | | |
| Wood Forms | | | | | | |
| Wood Waste Chutes | | | | | | |
| Wood Trim (cut-offs) | | | | | | |
| Metals | | | | | | |
| Insulation | | | | | | |
| Roofing | | | | | | |
| Joint Sealant Tubes | | | | | | |
| Gypsum Board (scraps) | | | | | | |
| Carpet and Pad (scraps) | | | | | | |
| Piping | | | | | | |
| Electrical Conduit | | | | | | |
| Other: | | | | | | |

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| FORM CWM-4: DEMOLITION WASTE REDUCTION WORK PLAN | | | | | | |
|--|------------------|--|------------------------------------|------------------------------------|--|--------------------------------------|
| MATERIAL CATEGORY | GENERATION POINT | TOTAL EST. QUANTITY OF WASTE TONS (TONNES) | DISPOSAL METHOD AND QUANTITY | | | HANDLING AND TRANSPORTION PROCEDURES |
| | | | EST. AMOUNT SALVAGED TONS (TONNES) | EST. AMOUNT RECYCLED TONS (TONNES) | EST. AMOUNT DISPOSED TO LANDFILL TONS (TONNES) | |
| Asphaltic Concrete Paving | | | | | | |
| Concrete | | | | | | |
| Brick | | | | | | |
| CMU | | | | | | |
| Lumber | | | | | | |
| Plywood and OSB | | | | | | |
| Wood Paneling | | | | | | |
| Wood Trim | | | | | | |
| Miscellaneous Metals | | | | | | |
| Structural Steel | | | | | | |
| Rough Hardware | | | | | | |
| Insulation | | | | | | |
| Roofing | | | | | | |
| Doors and Frames | | | | | | |
| Door Hardware | | | | | | |
| Windows | | | | | | |
| Glazing | | | | | | |
| Acoustical Tile | | | | | | |
| Carpet | | | | | | |
| Carpet Pad | | | | | | |
| Demountable Partitions | | | | | | |
| Equipment | | | | | | |
| Cabinets | | | | | | |
| Plumbing Fixtures | | | | | | |
| Piping | | | | | | |
| Supports and Hangers | | | | | | |
| Valves | | | | | | |
| Sprinklers | | | | | | |
| Mechanical Equipment | | | | | | |
| Electrical Conduit | | | | | | |
| Copper Wiring | | | | | | |
| Light Fixtures | | | | | | |
| Lamps | | | | | | |
| Lighting Ballasts | | | | | | |
| Electrical Devices | | | | | | |
| Switchgear and Panelboards | | | | | | |
| Transformers | | | | | | |
| Other: | | | | | | |

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| FORM CWM-5: COST/REVENUE ANALYSIS OF CONSTRUCTION WASTE REDUCTION WORK PLAN | | | | | | | | |
|---|--|---------------------------|---|-------------------------------------|-------------------------------------|-----------------------------------|---|---|
| MATERIALS | TOTAL QUANTITY OF MATERIALS (VOL. OR WEIGHT) (A) | EST. COST OF DISPOSAL (B) | TOTAL EST. COST OF DISPOSAL (C = A x B) | REVENUE FROM SALVAGED MATERIALS (D) | REVENUE FROM RECYCLED MATERIALS (E) | LANDFILL TIPPING FEES AVOIDED (F) | HANDLING AND TRANSPORTATION COSTS AVOIDED (G) | NET COST SAVINGS OF WORK PLAN (H = D+E+F+G) |
| Packaging: Cardboard | | | | | | | | |
| Packaging: Boxes | | | | | | | | |
| Packaging: Plastic Sheet or Film | | | | | | | | |
| Packaging: Polystyrene | | | | | | | | |
| Packaging: Pallets or Skids | | | | | | | | |
| Packaging: Crates | | | | | | | | |
| Packaging: Paint Cans | | | | | | | | |
| Packaging: Plastic Pails | | | | | | | | |
| Site-Clearing Waste | | | | | | | | |
| Masonry or CMU | | | | | | | | |
| Lumber: Cut-Offs | | | | | | | | |
| Lumber: Warped Pieces | | | | | | | | |
| Plywood or OSB (scraps) | | | | | | | | |
| Wood Forms | | | | | | | | |
| Wood Waste Chutes | | | | | | | | |
| Wood Trim (cut-offs) | | | | | | | | |
| Metals | | | | | | | | |
| Insulation | | | | | | | | |
| Roofing | | | | | | | | |
| Joint Sealant Tubes | | | | | | | | |
| Gypsum Board (scraps) | | | | | | | | |
| Carpet and Pad (scraps) | | | | | | | | |
| Piping | | | | | | | | |
| Electrical Conduit | | | | | | | | |
| Other: | | | | | | | | |

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| FORM CWM-6: COST/REVENUE ANALYSIS OF DEMOLITION WASTE REDUCTION WORK PLAN | | | | | | | | |
|---|--|---------------------------|---|-------------------------------------|-------------------------------------|-----------------------------------|---|---|
| MATERIALS | TOTAL QUANTITY OF MATERIALS (VOL. OR WEIGHT) (A) | EST. COST OF DISPOSAL (B) | TOTAL EST. COST OF DISPOSAL (C = A x B) | REVENUE FROM SALVAGED MATERIALS (D) | REVENUE FROM RECYCLED MATERIALS (E) | LANDFILL TIPPING FEES AVOIDED (F) | HANDLING AND TRANSPORTATION COSTS AVOIDED (G) | NET COST SAVINGS OF WORK PLAN (H = D+E+F+G) |
| Asphaltic Concrete | | | | | | | | |
| Paving | | | | | | | | |
| Concrete | | | | | | | | |
| Brick | | | | | | | | |
| CMU | | | | | | | | |
| Lumber | | | | | | | | |
| Plywood and OSB | | | | | | | | |
| Wood Paneling | | | | | | | | |
| Wood Trim | | | | | | | | |
| Miscellaneous Metals | | | | | | | | |
| Structural Steel | | | | | | | | |
| Rough Hardware | | | | | | | | |
| Insulation | | | | | | | | |
| Roofing | | | | | | | | |
| Doors and Frames | | | | | | | | |
| Door Hardware | | | | | | | | |
| Windows | | | | | | | | |
| Glazing | | | | | | | | |
| Acoustical Tile | | | | | | | | |
| Carpet | | | | | | | | |
| Carpet Pad | | | | | | | | |
| Demountable Partitions | | | | | | | | |
| Equipment | | | | | | | | |
| Cabinets | | | | | | | | |
| Plumbing Fixtures | | | | | | | | |
| Piping | | | | | | | | |
| Supports and Hangers | | | | | | | | |
| Valves | | | | | | | | |
| Sprinklers | | | | | | | | |
| Mech. Equipment | | | | | | | | |
| Electrical Conduit | | | | | | | | |
| Copper Wiring | | | | | | | | |
| Light Fixtures | | | | | | | | |
| Lamps | | | | | | | | |
| Lighting Ballasts | | | | | | | | |
| Electrical Devices | | | | | | | | |
| Switchgear and Panelboards | | | | | | | | |

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| FORM CWM-7: CONSTRUCTION WASTE REDUCTION PROGRESS REPORT | | | | | | | | |
|--|------------------|---|----------------------------|--------------------------|-------------------------|--|---|---|
| MATERIAL CATEGORY | GENERATION POINT | TOTAL QUANTITY OF WASTE TONS (TONNES) (A) | QUANTITY OF WASTE SALVAGED | | | TOTAL QUANTITY OF WASTE RECYCLED TONS (TONNES) (C) | TOTAL QUANTITY OF WASTE RECOVERED TONS (TONNES) (D = B + C) | TOTAL QUANTITY OF WASTE RECOVERED % (D / A x 100) |
| | | | ESTIMATED TONS (TONNES) | ACTUAL TONS (TONNES) (B) | ESTIMATED TONS (TONNES) | | | |
| Packaging: Cardboard | | | | | | | | |
| Packaging: Boxes | | | | | | | | |
| Packaging: Plastic Sheet or Film | | | | | | | | |
| Packaging: Polystyrene | | | | | | | | |
| Packaging: Pallets or Skids | | | | | | | | |
| Packaging: Crates | | | | | | | | |
| Packaging: Paint Cans | | | | | | | | |
| Packaging: Plastic Pails | | | | | | | | |
| Site-Clearing Waste | | | | | | | | |
| Masonry or CMU | | | | | | | | |
| Lumber: Cut-Offs | | | | | | | | |
| Lumber: Warped Pieces | | | | | | | | |
| Plywood or OSB (scraps) | | | | | | | | |
| Wood Forms | | | | | | | | |
| Wood Waste Chutes | | | | | | | | |
| Wood Trim (cut-offs) | | | | | | | | |
| Metals | | | | | | | | |
| Insulation | | | | | | | | |
| Roofing | | | | | | | | |
| Joint Sealant Tubes | | | | | | | | |
| Gypsum Board (scraps) | | | | | | | | |
| Carpet and Pad (scraps) | | | | | | | | |
| Piping | | | | | | | | |
| Electrical Conduit | | | | | | | | |
| Other: | | | | | | | | |

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

- B. Related Requirements:

1. Division 01 Section "Execution" for progress cleaning of Project site.
2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
3. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete. See Punch List form at end of this section.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 7 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 - 3. Submit maintenance material submittals including tools, spare parts, extra materials, and similar items, and deliver to location designated by Design Professional. Label with manufacturer's name and model number where applicable.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and its intended use. Obtain Design Professional's signature for receipt of submittals.
 - 4. Submit test/adjust/balance records.
 - 5. Submit sustainable design submittals required in Division 01 sustainable design requirements Section.
 - 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 7 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Advise Owner of pending insurance changeover requirements.
 - 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 3. Complete startup and testing of systems and equipment.
 - 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
 - 6. Advise Owner of changeover in heat and other utilities.

7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements, including touchup painting.
 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 7 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Design Professional and Construction Coordinator will either proceed with inspection or notify Contractor of unfulfilled requirements. Design Professional will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Design Professional, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to General Conditions.
 2. Certified List of Incomplete Items: Submit certified copy of Design Professional's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Design Professional. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Design Professional and Construction Coordinator will either proceed with inspection or notify Contractor of unfulfilled requirements. Design Professional will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Design Professional and Construction Coordinator.
 - d. Name of Contractor.
 - e. Page number.
4. Submit list of incomplete items in the following format:
 - a. Three paper copies. Design Professional, through Construction Coordinator, will return two copies.

1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Design Professional for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence.
 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark 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 Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.

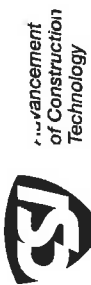
- j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
 - p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - q. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Division 01 Section "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls." and Division 01 Section "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700



PUNCH LIST

Project: _____ From (A/E): _____

Site Visit Date: _____

To (Contractor): _____ A/E Project Number: _____

Contract For: _____

The following items require the attention of the Contractor for completion or correction. This list may not be all-inclusive, and the failure to include any items on this list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

| Item Number | Room Location | Description | Correction/Completion Date | Verification A/E Check |
|-------------|---------------|-------------|----------------------------|------------------------|
|-------------|---------------|-------------|----------------------------|------------------------|

Attachments

Signed by: _____ Date: _____

Copies: Owner Consultants _____ _____ _____ File

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Operation manuals for systems, subsystems, and equipment.
4. Product maintenance manuals.
5. Systems and equipment maintenance manuals.

- B. Related Requirements:

1. Division 01 Section "Multiple Contract Summary" for coordinating operation and maintenance manuals covering the Work of multiple contracts.
2. Division 01 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
3. Division 01 Section "General Commissioning Requirements" for verification and compilation of data into operation and maintenance manuals.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 1. Design Professional and Commissioning Authority will comment on whether content of operations and maintenance submittals are acceptable.
 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

- B. Format: Submit operations and maintenance manuals in the following format:
1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Design Professional.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
 2. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Design Professional, through Construction Coordinator, will return one copy.
- C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Design Professional and Commissioning Authority will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Commissioning Authority will return copy with comments.
1. Correct or revise each manual to comply with Commissioning Authority's comments. Submit copies of each corrected manual within 15 days of receipt of Commissioning Authority's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
1. List of documents.
 2. List of systems.
 3. List of equipment.
 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Construction Coordinator.
 - 7. Name and contact information for Design Professional.
 - 8. Name and contact information for Commissioning Authority.
 - 9. Names and contact information for major consultants to the Design Professional that designed the systems contained in the manuals.
 - 10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 - 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names

used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.

3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 2. Performance and design criteria if Contractor has delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 1. Standard maintenance instructions and bulletins.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original project record documents as part of operation and maintenance manuals.
 - 2. Comply with requirements of newly prepared record Drawings in Division 01 Section "Project Record Documents."

- G. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 018113.13 - SUSTAINABLE DESIGN REQUIREMENTS - LEED FOR NEW CONSTRUCTION AND MAJOR RENOVATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general requirements and procedures for compliance with certain USGBC LEED prerequisites and credits needed for Project to obtain LEED certification based on USGBC's "LEED 2009 for New Construction & Major Renovations."
 - 1. Other LEED prerequisites and credits needed to obtain LEED certification depend on product selections and may not be specifically identified as LEED requirements. Compliance with requirements needed to obtain LEED prerequisites and credits may be used as one criterion to evaluate substitution requests and comparable product requests.
 - 2. Additional LEED prerequisites and credits needed to obtain the indicated LEED certification depend on Design Professional's design and other aspects of Project that are not part of the Work of the Contract.
 - 3. A copy of the LEED Project checklist is attached at the end of this Section for information only.
- B. Related Requirements:
 - 1. Divisions 01 through 33 Sections of any specifications provided with a specific Job Order for LEED requirements specific to the work of each Section. Requirements may or may not include reference to LEED.

1.3 DEFINITIONS

- A. Chain-of-Custody Certificates: Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship." Certificates shall include evidence that manufacturer is certified for chain of custody by an FSC-accredited certification body.
- B. Regional Materials: Materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site. If only a fraction of a product or material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value.

- C. Recycled Content: The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.
 - 1. "Post-consumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
 - 2. "Pre-consumer" material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Respond to questions and requests from Design Professional and the USGBC regarding LEED credits that are the responsibility of the Contractor, that depend on product selection or product qualities, or that depend on Contractor's procedures until the USGBC has made its determination on the project's LEED certification application. Document responses as informational submittals.

1.5 ACTION SUBMITTALS

- A. General: Submit additional LEED submittals required by other Specification Sections.
- B. LEED submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated LEED requirements.
- C. LEED Documentation Submittals:
 - 1. Credit EA 5: Product data and wiring diagrams for sensors and data collection system used to provide continuous metering of building energy-consumption performance over a period of time of not less than one year of postconstruction occupancy.
 - 2. Credit MR 2: Comply with Division 01 Section "Construction Waste Management and Disposal."
 - 3. Credit MR 3: Receipts for salvaged and refurbished materials used for Project, indicating sources and costs for salvaged and refurbished materials.
 - 4. Credit MR 4: Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating cost for each product having recycled content.
 - 5. Credit MR 5: Product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.
 - 6. Credit MR 7: Product data and chain-of-custody certificates for products containing certified wood. Include statement indicating cost for each certified wood product.
 - 7. Credit EQ 3.1:
 - a. Construction indoor-air-quality management plan.

- b. Product data for temporary filtration media.
 - c. Product data for filtration media used during occupancy.
 - d. Construction Documentation: Six photographs at three different times during the construction period, along with a brief description of the SMACNA approach employed, documenting implementation of the indoor-air-quality management measures, such as protection of ducts and on-site stored or installed absorptive materials.
8. Credit IEQ 3.2:
- a. Signed statement describing the building air flush-out procedures including the dates when flush-out was begun and completed and statement that filtration media was replaced after flush-out.
 - b. Product data for filtration media used during flush-out and during occupancy.
 - c. Report from testing and inspecting agency indicating results of indoor-air-quality testing and documentation showing compliance with indoor-air-quality testing procedures and requirements.
9. Credit IEQ 4.1: Product data for adhesives and sealants used inside the weatherproofing system indicating VOC content of each product used.
10. Credit IEQ 4.2: Product data for paints and coatings used inside the weatherproofing system indicating VOC content of each product used.
11. Credit IEQ 4.4: Product data for products containing composite wood or agrifiber products or wood glues indicating that they do not contain urea-formaldehyde resin.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For LEED coordinator.
- B. Project Materials Cost Data: Provide statement indicating total cost for materials used for Project. Costs exclude labor, overhead, and profit. Include breakout of costs for the following categories of items:
- 1. Furniture.
 - 2. Plumbing.
 - 3. Mechanical.
 - 4. Electrical.
 - 5. Specialty items such as elevators and equipment.
 - 6. Wood-based construction materials.
- C. LEED Action Plans: Provide preliminary submittals within 30 days of date established for commencement of the Work indicating how the following requirements will be met:
- 1. Credit MR 2: Waste management plan complying with Division 01 Section "Construction Waste Management and Disposal."
 - 2. Credit MR 3: List of proposed salvaged, refurbished, and reused materials. Identify each material that will be salvaged, refurbished, or reused, including its source, cost, and replacement cost if the item was to be purchased new.

3. Credit MR 4: List of proposed materials with recycled content. Indicate cost, post-consumer recycled content, and pre-consumer recycled content for each product having recycled content.
 4. Credit MR 5: List of proposed regional materials. Identify each regional material, including its source, cost, and the fraction by weight that is considered regional.
 5. Credit MR 7: List of proposed certified wood products. Indicate each product containing certified wood, including its source and cost of certified wood products.
 6. Credit IEQ 3.1: Construction indoor-air-quality management plan.
- D. LEED Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with LEED action plans for the following:
1. Credit MR 2: Waste reduction progress reports complying with Division 01 Section "Construction Waste Management and Disposal."
 2. Credit MR 3: Salvaged, refurbished, and reused materials.
 3. Credit MR 4: Recycled content.
 4. Credit MR 5: Regional materials.
 5. Credit MR 7: Certified wood products.

1.7 QUALITY ASSURANCE

- A. LEED Coordinator: Engage an experienced LEED-Accredited Professional to coordinate LEED requirements. LEED coordinator may also serve as waste management coordinator.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Provide products and procedures necessary to obtain LEED credits required in this Section. Although other Sections may specify some requirements that contribute to LEED credits, the Contractor shall determine additional materials and procedures necessary to obtain LEED credits indicated.

2.2 SALVAGED, REFURBISHED, OR REUSED MATERIALS

- A. Credit MR 3: Not less than 5 percent of building materials (by cost) shall be salvaged, refurbished, or reused materials. Materials that may possibly be salvaged, refurbished, or reused will be listed in each individual Job Order:

2.3 RECYCLED CONTENT OF MATERIALS

- A. Credit MR 4: Building materials shall have recycled content such that post-consumer recycled content plus one-half of pre-consumer recycled content for Project constitutes a minimum of 10 percent of cost of materials used for Project.

1. Cost of post-consumer recycled content plus one-half of pre-consumer recycled content of an item shall be determined by dividing weight of post-consumer recycled content plus one-half of pre-consumer recycled content in the item by total weight of the item and multiplying by cost of the item.
2. Do not include plumbing, mechanical and electrical components, and specialty items such as elevators and equipment in the calculation.

2.4 REGIONAL MATERIALS

- A. Credit MR 5: Not less than 10 percent of building materials (by cost) shall be regional materials.

2.5 CERTIFIED WOOD

- A. Credit MR 7: Not less than 50 percent (by cost) of wood-based materials shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."
 1. Wood-based materials include, but are not limited to, the following materials when made from wood, engineered wood products, or wood-based panel products:
 - a. Rough carpentry.
 - b. Miscellaneous carpentry.
 - c. Heavy timber construction.
 - d. Wood decking.
 - e. Metal-plate-connected wood trusses.
 - f. Structural glued-laminated timber.
 - g. Finish carpentry.
 - h. Architectural woodwork.
 - i. Wood paneling.
 - j. Wood veneer wall covering.
 - k. Wood flooring.
 - l. Wood lockers.
 - m. Wood cabinets.
 - n. Furniture.

2.6 LOW-EMITTING MATERIALS

- A. Credit IEQ 4.1: For field applications that are inside the weatherproofing system, adhesives and sealants shall comply with the following VOC content limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 1. Wood Glues: 30 g/L.
 2. Metal-to-Metal Adhesives: 30 g/L.
 3. Adhesives for Porous Materials (Except Wood): 50 g/L.
 4. Subfloor Adhesives: 50 g/L.
 5. Plastic Foam Adhesives: 50 g/L.
 6. Carpet Adhesives: 50 g/L.

7. Carpet Pad Adhesives: 50 g/L.
8. VCT and Asphalt Tile Adhesives: 50 g/L.
9. Cove Base Adhesives: 50 g/L.
10. Gypsum Board and Panel Adhesives: 50 g/L.
11. Rubber Floor Adhesives: 60 g/L.
12. Ceramic Tile Adhesives: 65 g/L.
13. Multipurpose Construction Adhesives: 70 g/L.
14. Fiberglass Adhesives: 80 g/L.
15. Contact Adhesive: 80 g/L.
16. Structural Glazing Adhesives: 100 g/L.
17. Wood Flooring Adhesive: 100 g/L.
18. Structural Wood Member Adhesive: 140 g/L.
19. Single-Ply Roof Membrane Adhesive: 250 g/L.
20. Special-Purpose Contact Adhesive (contact adhesive that is used to bond melamine-covered board, metal, unsupported vinyl, rubber, or wood veneer 1/16 inch or less in thickness to any surface): 250 g/L.
21. Top and Trim Adhesive: 250 g/L.
22. Plastic Cement Welding Compounds: 250 g/L.
23. ABS Welding Compounds: 325 g/L.
24. CPVC Welding Compounds: 490 g/L.
25. PVC Welding Compounds: 510 g/L.
26. Adhesive Primer for Plastic: 550 g/L.
27. Sheet-Applied Rubber Lining Adhesive: 850 g/L.
28. Aerosol Adhesive, General-Purpose Mist Spray: 65 percent by weight.
29. Aerosol Adhesive, General-Purpose Web Spray: 55 percent by weight.
30. Special-Purpose Aerosol Adhesive (All Types): 70 percent by weight.
31. Other Adhesives: 250 g/L.
32. Architectural Sealants: 250 g/L.
33. Nonmembrane Roof Sealants: 300 g/L.
34. Single-Ply Roof Membrane Sealants: 450 g/L.
35. Other Sealants: 420 g/L.
36. Sealant Primers for Nonporous Substrates: 250 g/L.
37. Sealant Primers for Porous Substrates: 775 g/L.
38. Modified Bituminous Sealant Primers: 500 g/L.
39. Other Sealant Primers: 750 g/L.

B. Credit IEQ 4.2: For field applications that are inside the weatherproofing system, paints and coatings shall comply with the following VOC content limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Flat Paints and Coatings: VOC not more than 50 g/L.
2. Nonflat Paints and Coatings: VOC not more than 150 g/L.
3. Dry-Fog Coatings: VOC not more than 400 g/L.
4. Primers, Sealers, and Undercoaters: VOC not more than 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: VOC not more than 340 g/L.
7. Pretreatment Wash Primers: VOC not more than 420 g/L.
8. Clear Wood Finishes, Varnishes: VOC not more than 350 g/L.
9. Clear Wood Finishes, Lacquers: VOC not more than 550 g/L.
10. Floor Coatings: VOC not more than 100 g/L.

11. Shellacs, Clear: VOC not more than 730 g/L.
 12. Shellacs, Pigmented: VOC not more than 550 g/L.
 13. Stains: VOC not more than 250 g/L.
- C. Credit IEQ 4.4: Composite wood, agrifiber products, and adhesives shall not contain urea-formaldehyde resin.

PART 3 - EXECUTION

3.1 REFRIGERANT AND CLEAN-AGENT FIRE-EXTINGUISHING-AGENT REMOVAL

- A. Prerequisite EA 3: Remove CFC-based refrigerants from existing HVAC&R equipment indicated to remain and replace with refrigerants that are not CFC based. Replace or adjust existing equipment to accommodate new refrigerant.
- B. Credit EA 4: Remove clean-agent fire-extinguishing agents that contain HCFCs or halons and replace with agent that does not contain HCFCs or halons.

3.2 MEASUREMENT AND VERIFICATION

- A. Credit EA 5: Implement measurement and verification plan consistent with either Option B: Energy Conservation Measure Isolation or Option D: Calibrated Simulation, Savings Estimation Method 2] in the EVO's "International Performance Measurement and Verification Protocol (IPMVP), Volume III: Concepts and Options for Determining Energy Savings in New Construction."
- B. If not already in place, install metering equipment to measure energy usage. Monitor, record, and trend log measurements.
- C. Evaluate energy performance and efficiency by comparing actual to predicted performance.
- D. Measurement and verification period shall cover at least one year of postconstruction occupancy.

3.3 CONSTRUCTION WASTE MANAGEMENT

- A. Credit MR 2: Comply with Division 01 Section "Construction Waste Management and Disposal."

3.4 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

- A. Credit IEQ 3.1: Comply with SMACNA's "SMACNA IAQ Guideline for Occupied Buildings under Construction."
 1. If Owner authorizes use of permanent heating, cooling, and ventilating systems during construction period as specified in Division 01 Section "Temporary Facilities and

- Controls," install filter media having a MERV 8 according to ASHRAE 52.2 at each return-air inlet for the air-handling system used during construction.
2. Replace all air filters immediately prior to occupancy.
- B. Credit IEQ 3.2: Comply with one of the following requirements:
1. After construction ends, prior to occupancy and with all interior finishes installed, perform a building flush-out by supplying a total volume of 14000 cu. ft. of outdoor air per sq. ft. of floor area while maintaining an internal temperature of at least 60 deg F and a relative humidity no higher than 60 percent.
 2. If occupancy is desired prior to flush-out completion, the space may be occupied following delivery of a minimum of 3500 cu. ft. of outdoor air per sq. ft. of floor area to the space. Once a space is occupied, it shall be ventilated at a minimum rate of 0.30 cfm per sq. ft. of outside air or the design minimum outside air rate determined in Prerequisite EQ 1, whichever is greater. During each day of the flush-out period, ventilation shall begin a minimum of three hours prior to occupancy and continue during occupancy. These conditions shall be maintained until a total of 14000 cu. ft./sq. ft. of outside air has been delivered to the space.
 3. Air-Quality Testing:
 - a. Conduct baseline indoor-air-quality testing, after construction ends and prior to occupancy, using testing protocols consistent with the EPA's "Compendium of Methods for the Determination of Air Pollutants in Indoor Air," and as additionally detailed in the USGBC's "Green Building Design and Construction Reference Guide."
 - b. Demonstrate that the contaminant maximum concentrations listed below are not exceeded:
 - 1) Formaldehyde: 27 ppb.
 - 2) Particulates (PM10): 50 micrograms/cu. m.
 - 3) Total Volatile Organic Compounds (TVOC): 500 micrograms/cu. m.
 - 4) 4-Phenylcyclohexene (4-PH): 6.5 micrograms/cu. m.
 - 5) Carbon Monoxide: 9 ppm and no greater than 2 ppm above outdoor levels.
 - c. For each sampling point where the maximum concentration limits are exceeded, conduct additional flush-out with outside air and retest the specific parameter(s) exceeded to indicate the requirements are achieved. Repeat procedure until all requirements have been met. When retesting noncomplying building areas, take samples from same locations as in the first test.
 - d. Air-sample testing shall be conducted as follows:
 - 1) All measurements shall be conducted prior to occupancy but during normal occupied hours, and with building ventilation system starting at the normal daily start time and operated at the minimum outside air flow rate for the occupied mode throughout the duration of the air testing.
 - 2) Building shall have all interior finishes installed including, but not limited to, millwork, doors, paint, carpet, and acoustic tiles. Nonfixed furnishings such as workstations and partitions are encouraged, but not required, to be in place for the testing.

- 3) Number of sampling locations varies depending on the size of building and number of ventilation systems. For each portion of building served by a separate ventilation system, the number of sampling points shall not be less than one per 25,000 sq. ft. or for each contiguous floor area, whichever is larger, and shall include areas with the least ventilation and greatest presumed source strength.
- 4) Air samples shall be collected between 3 and 6 feet from the floor to represent the breathing zone of occupants, and over a minimum four-hour period.

END OF SECTION 018113.13

SECTION 019113 - GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. OPR and BoD documentation are included by reference for information only.

1.2 SUMMARY

- A. Section includes general requirements that apply to implementation of commissioning without regard to specific systems, assemblies, or components.
- B. Related Sections: Not Used.

1.3 DEFINITIONS

- A. BoD: Basis of Design. A document that records concepts, calculations, decisions, and product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.
- B. Commissioning Plan: A document that outlines the organization, schedule, allocation of resources, and documentation requirements of the commissioning process.
- C. CxA: Commissioning Authority.
- D. OPR: Owner's Project Requirements. A document that details the functional requirements of a project and the expectations of how it will be used and operated. These include Project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.
- E. Systems, Subsystems, Equipment, and Components: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, equipment, and components.

1.4 COMMISSIONING TEAM

- A. Members Appointed by Contractor: Individuals, each having the authority to act on behalf of the entity he or she represents, explicitly organized to implement the commissioning process through coordinated action. The commissioning team shall consist of, but not be limited to, representatives of Contractor, including Project superintendent and subcontractors, installers, suppliers, and specialists deemed appropriate by the CxA.

B. Members Appointed by Owner:

1. CxA: The designated person, company, or entity that plans, schedules, and coordinates the commissioning team to implement the commissioning process. Owner will engage the CxA under separate arrangements.
2. Representatives of the facility user and operation and maintenance personnel.
3. Design Professionals.

1.5 OWNER'S RESPONSIBILITIES

- A. Provide the OPR documentation to the CxA and Contractor for information and use.
- B. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities.
- C. Provide the BoD documentation, prepared by Design Professional and approved by Owner, to the CxA and Contractor for use in developing the commissioning plan, systems manual, and operation and maintenance training plan.

1.6 CONTRACTOR'S RESPONSIBILITIES

- A. Contractor shall assign representatives with expertise and authority to act on its behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:
 1. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
 2. Cooperate with the CxA for resolution of issues recorded in the Issues Log.
 3. Attend commissioning team meetings held on a variable basis.
 4. Integrate and coordinate commissioning process activities with construction schedule.
 5. Review and accept construction checklists provided by the CxA.
 6. Complete paper construction checklists as Work is completed and provide to the Commissioning Authority on a weekly basis.
 7. Review and accept commissioning process test procedures provided by the Commissioning Authority.
 8. Complete commissioning process test procedures.

1.7 CxA'S RESPONSIBILITIES

- A. Organize and lead the commissioning team.
- B. Provide commissioning plan.
- C. Convene commissioning team meetings.
- D. Provide Project-specific construction checklists and commissioning process test procedures.
- E. Verify the execution of commissioning process activities using random sampling. The sampling rate may vary from 1 to 100 percent. Verification will include, but is not limited to,

equipment submittals, construction checklists, training, operating and maintenance data, tests, and test reports to verify compliance with the OPR. When a random sample does not meet the requirement, the CxA will report the failure in the Issues Log.

- F. Prepare and maintain the Issues Log.
- G. Prepare and maintain completed construction checklist log.
- H. Witness systems, assemblies, equipment, and component startup.
- I. Compile test data, inspection reports, and certificates; include them in the systems manual and commissioning process report.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 019113

