SOCCER FIELD PRESS BOX

PROJECT MANUAL

PROJECT NO. 77034

January 29, 2018
ROWAN UNIVERSITY
SECTION I
INSTRUCTIONS TO BIDDERS

1B1. BID PROPOSALS

1B1.1. Sealed proposals for the work described herein must be received and time-stamped at the University. The closing date and time for bids will be stated in the Advertisement and Invitation to Bid. Bidders are cautioned that reliance of the U. S. Mail for timely delivery of proposals is at the bidder's risk. Failure by the contractor to have sealed proposals reach the University by the prescribed time will result in a return of the submission unopened and unread.

1B1.2. This contract will be bid as a single prime contract only. Bids for less than all of the project as described herein will be deemed nonconforming.

1B1.3. The Instructions to Bidders, Bid forms, Contract forms, plans and specifications, forms of Bid Bond, Agreement of Surety, Performance Bonds, Payment Bonds and other contract documents may be examined at the University. Contractors may obtain contract documents at the University's Purchasing Website. The University reserves the right to deny award to any bidder who is not clearly responsible based upon experience, past performance and financial capability to perform the work required hereunder or other material factors.

1B1.4. Set(s) of contract documents will be available for inspection by interested parties free of charge in Rowan University’s Purchasing Department.

1B1.5. Bid proposals based upon the plans, specifications, general, special and supplementary conditions, clarifications and/or addenda shall be deemed as having been made by the contractor will full knowledge of all project conditions. Bidders are required to visit the site prior to submitting proposals for the work herein described and to have thoroughly examined the conditions under which the contract is to be executed including those reasonably observable conditions of the premises which would hinder, delay or otherwise affect the performance of the contractor required under the terms of the contract. The University will not allow claims for additional costs as a result of the contractor’s failure to become aware of the reasonably observable conditions affecting his/her required performance. The bidder is required to make appropriate allowances in the preparation of his/her bid for the accommodation of such conditions. Bidders must warrant in the bid documents that the bidder is familiar with conditions existing at the site at the time the bid is submitted.

1B1.6. Bid proposals shall be submitted on the standard form provided by the University, enclosed in a sealed envelope issued by Rowan University. The name and address of the bidder must be indicated on the envelope as well as indication of the project, project location and other appropriate identification.

1B1.7. All amounts in the bid documents shall be stated in numerical figures only.

1B1.8. The bidder must include the following items in the bid envelope. Other documents may be required by the University Purchasing Department. Check the University’s website for further information on required documents.
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a. The proposal signed by the bidder;
b. The executed Affidavit of Non-collusion;
c. Bid security as further described in Paragraph 1B6;
d. The completed set of bid forms found after the Table of Contents;
e. The names and license numbers of and evidence of performance security form of all sub-contractors to who the bidder will sub-contract any of the work on the project for the following:
   1) The plumbing and gas fitting work;
   2) The heating and ventilating systems and equipment;
   3) The electrical work including any electrical power plants;
   4) The structural and ornamental iron work.

1B1.9. Proposals shall remain open for acceptance and may not be withdrawn for a period of sixty (60) days after the bid opening date.

1B1.10. Proposals not submitted and filed in accordance with instructions contained herein and in the Advertisement will be considered informal and rejected as non-responsive.

1B2. BID MODIFICATION

1B2.1. A bidder may modify his/her bid proposal by telegram or letter at any time prior to the scheduled closing time for receipt of bids provided such communication is received by the University prior to such closing time. A written confirmation of any telegraphic modification signed by the bidder must have been mailed and time-stamped by the post office prior to specified closing time. Such confirmation shall be accompanied by a newly executed Affidavit of Non-Collusion.

1B2.2. Telegraphic communications shall not reveal the basic bid price but only shall provide the amount to be added, subtracted or modified so that the final price(s) or term(s) will not be revealed until the sealed proposal is opened. If written confirmation of the telegraphic modification is not received within two (2) working days after the scheduled closing time, no consideration will be given to the telegraphic modification.

1B2.3. Bids may be withdrawn upon written request received from the bidder prior to the time fixed for the bid opening. Right for withdrawal of a bid is lost after a bid has been opened. If any error has been made in the bid amount, request for relief from the bid may be made in writing to the University. The written request shall be signed by an authorized corporate officer. A determination of whether the bidder will be released shall be at the sole discretion of the University who shall issue his/her finding(s) within five (5) days of his/her receipt of all pertinent information relating to such request for relief.

1B3. CONSIDERATION OF BIDS

1B3.1. Award of Projects (s) or Rejection of Bid(s):

   a. The project will be awarded to the lowest responsible bidder whose bid, conforming to the Bidding Documents, will be most advantageous to the University. The award will be made or the bid(s) rejected within sixty (60) days from the date of the opening of the bids.
b. All bid deposits of unsuccessful bidders, except the lowest three (3) bidders, will be returned or refunded within five (5) days of the bid opening.

c. The bid security deposits of the successful bidder and the next two (2) lowest bidders will be retained by the University until the execution and delivery of a formal contract and delivery of performance and payment bonds by the bidder awarded the project. At such time, bid deposits of the other two (2) low bidders will be returned.

d. The University reserves the right to award the project on the basis of the single bid for the entire work on or the basis of a separate bid and alternate, or any combination of separate bids and alternates, which the University deems best serves the interest of the University.

e. The University reserves the right to waive, in his/her sole discretion, any bid requirements when such waiver is in the best interests of the University and where such waiver is permitted by law.

f. The University reserves the right to reject any and all bids when such rejection is in the best interests of the University. The University may also reject the bid of any bidder who, in its judgement, is not responsible or capable of performing the project based on financial capability, past performance or experience. A bidder whose bid is so rejected may request a hearing before the University by filing a written notice within seven (7) days of the transmittal of the rejection.

1B3.2. The bidder to whom the project is awarded shall execute and deliver the requisite contract documents including payment and performance bonds within the time specified. Upon his/her failure or refusal to comply in the manner and within the time specified, the University may either award the contract to the next low, responsible bidder or re-advertise for new proposals. In either case, the University may hold the defaulting bidder and his/her surety liable for the difference between the applicable sums quoted by the defaulting bidder and that sum which the University may be obligated to pay to the contractor who undertakes to perform and complete the work of the defaulting bidder.

1B4. AWARDS

1B4.1. In executing a contract, the successful bidder agrees to perform his/her work in a good and workmanlike manner and to complete portions of the work by established milestone dates and all work within the number of calendar days specified in his/her contract.

1B4.2. The successful bidder will be notified of the time and place for the signing of the contract. Key requirements in the conduct of the contract including, but not limited to, project milestones, the number of days for performance of the contract, manner and schedule of payments, site logistics and other administrative details will be reviewed at the award meeting. The time and place of the first job meeting will also be announced.

1B4.3. The project shall be awarded to the lowest responsible bidder whose bid, conforming to the Bidding Documents, will be the most advantageous to the University. Alternatives will be accepted or rejected as selected by the University. Add alternates and deduct alternates will be specified separately. The University may choose from the add and deduct alternates without priority between the two groups. The University
may accept alternates out of sequence provided it states its reasons for so doing.

1B4.4. Should submission of unit prices be required for specific items of work in bid proposals, they will be considered in the evaluation of bids.

1B4.5. LIQUIDATED DAMAGES ARE PART OF THIS PROJECT. Please refer to Section 017700 Contract Closeout in the Project Manual.

1B5. QUALIFICATIONS OF BIDDERS

1B5.1. If the successful bidder is a corporation not organized under the laws of the State of New Jersey, or is not authorized to do business in this state, the award of the project shall be conditioned upon the prompt filing by the said corporation of a certificate to do business in this state and shall comply with the laws of this state in that regard. This filing must be made within the Department of State. No award of project will be made until the Department of State confirms this authorization.

1B5.2. The University requires that each contractor shall perform a minimum of thirty-five percent (35%) of the contract work by his/her own forces. The University, however, may, in its sole discretion, reduce this percentage depending upon the nature and circumstances in any particular case if he/she determines that to do so would be in the best interests of the University provided that a written request is submitted to him/her with the original bid proposal.

1B5.3. The University reserves the right to reject a bidder at any time prior to the signing of a contract if information or data is obtained which, in the opinion of the University, adversely affects the responsibility and/or the capability of the bidder to undertake and to complete the work regardless of the bidder's previous qualification or classification. The University may conduct any investigation as it deems necessary to determine the bidder's responsibility and capacity and the bidder shall furnish all information and data for this purpose as the University may request.

1B5.4. The bidder shall include a list of the sub-contractors to whom the bidder will sub-contract work with his/her bid for:

a. the plumbing and gas fitting work;
b. the heating and ventilating systems and equipment;
c. the electrical work including any electrical power plants;
d. the structural and ornamental iron work; and

e. special categories as may be required.

1B6. DEPOSIT AND BID BOND

1B6.1. Each proposal shall be accompanied by a bid bond or by a certified or cashier's check made payable to the University equal to ten percent (10%) of the amount of the proposal as evidence of good faith which guarantees that, if the proposal submitted by the bidder is accepted, the bidder will enter into the contract and furnish the required contract documents and surety bonds. If a bid bond is submitted, it shall also provide that the surety issuing the bid bond be bound to issue the required payment and performance bonds if the bidder is awarded the project. If the bidder
whose proposal is accepted is unable to provide the performance and payment bonds or fails to execute a contract, then such bidder and the bid bond surety shall be obligated to pay to the University the difference between the amount of the bid and the amount which the University contracts to pay another party to perform the work. The University reserves the right to retain any certified or cashier's check deposited hereunder as reimbursement for the difference as aforesaid and shall return any non-required balance to the bidder. Should there be a deficiency in the excess of the bid deposit, the bidder and the surety shall pay the entire amount of the University's difference in cost upon demand. Nothing contained herein shall be construed as reason of a default or breach by the contractor. Certified or cashier's checks or bonds submitted by the unsuccessful bidders will be returned after the contract has been executed. Contractors electing to furnish a bid bond must include consent of surety, both in form acceptable to the University.

1B6.2. Attorneys-in-fact who sign bid bonds or contract bonds must file a certified power of attorney with the University indicating the effective date of that power.

1B7. PERFORMANCE AND PAYMENT BONDS

1B7.1. Within five (5) calendar days, the successful bidder shall furnish a performance bond in statutory form in an amount equal to one hundred percent (100%) of the total contract price as security for the faithful performance of this contract and also a payment bond in statutory form in an amount equal to one hundred percent (100%) of the contract price as security for the payment of all persons and firms performing labor and furnishing materials in connection with this contract. The performance and payment bond may be in one or in separate instruments in accordance with the law. No contract shall be executed unless and until each bond is submitted to and approved by the University and the surety must be presently authorized to do business in the State of New Jersey. The surety's obligation shall continue beyond final acceptance to the extent that the contractor would have such an obligation.

1B7.2. The cost of bonds shall be paid for by the contractor.

1B7.3. At any time, if the University is dissatisfied with any surety or sureties, who have issued or proposed to issue, the performance or payment bonds for justifiable cause, the contractor shall substitute an acceptable bond or bonds in such form and sum and executed by such other surety or sureties as may be satisfactory to the University within ten (10) days after notice from the University to do so. The premiums of such bonds shall be paid by the contractor. No contract shall be executed and/or no payment made under a contract until the new surety or sureties shall have furnished such an acceptance bond to the University.

1B7.4. Bonds must be legally effective as of the date the contract is signed. Bonds must indicate contractor's names exactly as they appear on the contract. Current attorney-in-fact instruments and financial statement of the surety must be included with the bond. Bonds must be executed by an authorized officer of the surety. Bonds furnished under this article shall conform in all respects to the requirements and language of N.J.S.A. 2A:44-143 to 147.

1B8. BULLETINS AND INTERPRETATIONS
1B8.1. No interpretation of the meaning of the plans, specifications or other pre-bid documents will be provided to any bidder unless such interpretation is made in writing to all prospective bidders prior to the bid opening. Any such interpretations must be identified in bid proposals submitted. Any interpretations which are not entered in accordance with this provision shall be unauthorized and not binding upon the University.

1B8.2. Every request for an interpretation relating to, clarification or correction of the plans, specifications or other bid documents shall be made in writing addressed to the University and must be received at least five (5) working days prior to the date fixed for the bid opening. Any and all interpretations, clarifications or corrections and any supplemental instructions must be issued by the University in writing in the form of bulletins and mailed by certified mail, return receipt requested or by telegraphic notice to all prospective bidders no later than three (3) working days prior to the date of the bid opening. All bulletins issued shall become part of the contract documents and shall be acknowledged in all the bid proposals. Failure of a contractor to acknowledge receipt of all such bulletins and interpretations by the time of the bid opening shall result in his/her proposal being considered non-responsive at the option of the University.

1B8.3. Each bidder shall be responsible for thoroughly reviewing the contract documents prior to submission of bids. Bidders are advised that no claim for expenses incurred or damage sustained on account of any error, discrepancy, omission or conflict in their bid submission will be entertained. Documents shall be recognized by the University unless, and only to the extent that, a written request for interpretation, clarification or correction has been submitted in compliance with section 1B8.2 and the matter has not been addressed by the University through the issuance of a bulletin interpreting, clarifying and/or correcting such error, discrepancy, omission or conflict.

1B9. ASSIGNMENTS

1B9.1. The contractor shall not assign the whole or any part of this contractor without prior written consent of the University. Money due or to become due to the contractor hereunder shall not be assigned for any purposes whatsoever.

1B10. FEDERAL EXCISE TAXES AND STATE SALES TAX

1B10.1. In general, bidders must take into consideration applicable Federal and state tax laws when preparing their bids.

1B10.2. Under Chapter 32 of the Internal Revenue Code, an exemption certificate must be on file with the University of the Division of purchase and Property. (example, Number 22-75-005)

1B10.3. Materials, supplies or services for exclusive use in erecting structures or buildings or otherwise improving, altering or requiring all University-owned property are exempt from the State sales tax.

1B10.4. Bidders must make their own determinations as to the current status and applicability.
of any tax laws and the contractor may make no claim based upon any error or misunderstanding as to the applicability of any tax laws.

1B10.5. Purchases or rentals of equipment are not exempt from any tax under the State Sales Tax Act.

1B11. RESTRICTIVE SPECIFICATIONS

1B11.1. Should any bidder determine before the bid due date that any portion of the specifications or drawings specify a particular product which can be provided by one (1) supplier or manufacturer with the result that competitive prices are not available, he/she shall immediately notify the University and Construction Manager of the fact in writing.

1B11.2. If such notice is not given in a timely manner, it shall be assumed that the bidder has included the estimate of such sole source in his/her bid. In the alternative, if the University or Construction Manager are notified in a timely manner of the requirement in the specification of a sole source of supply or manufacture, the University may order the project rebid or may take any other lawful action.

1B12. OFFER OF GRATUITIES

1B12.1. Chapter 48 of the laws of 1954 make it a misdemeanor to offer, pay or give any fee, commission, compensation, gift or gratuity to any person employed by the State. It is the policy of the University to treat the offer of any gift or gratuity by any company, its officers or employees to any person employed by Rowan University as grounds for debarment or suspension of such company from bidding on and providing work or materials on University contracts.

END OF SECTION I
ARTICLE 1 - CONTRACT DOCUMENTS

1.1 DEFINITIONS

1.1.1 "Architect" or "Engineer" means the Architect, Engineer or other design professional engaged by the University to work under the direction of the University's project manager or contracting officer.

1.1.2 Where "as shown", "as indicated", "as detailed" or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless otherwise stated. The word "provided", as used herein, shall be understood to mean "provided complete in place", that is, "furnished and installed".

1.1.3 Bulletin or Addendum: The bulletin or addendum is a document issued by the University prior to opening of bids which supplements, revises or modifies the solicitation documents furnished for bidding purposes.

1.1.4 Change Order Request Form: A request for equitable adjustment made by the Contractor in response to written direction by the contracting officer pursuant to Article 14 entitled "Changes to Contract". Unless otherwise specified by the University, the Contractor shall use Form AIG701

1.1.5 Claims: Differences between the University and a contractor concerning extra work, alleged errors or omissions in the specifications or drawings, unreasonable delays, damages to work, informal suspensions or interferences by University personnel and like matters.

1.1.6 University: The word “University” or “owner” as used herein refers to Rowan University.

1.1.7 University’s project manager: An employee of the University (the University's project manager) to provide general administration and project management services as required by the contract documents.

1.1.8 Contract Documents: This contract, together with any plans, drawings, specifications or other documents which are attached hereto or incorporated herein by reference, together with any such plans, drawings, specifications, schedules or other documents which may be produced pursuant to this contract or derived there from and which are intended to bind the contractor hereunder.

1.1.9 Contract Limit Lines: Those lines shown on the drawings which limit the boundaries of the project and beyond which no construction work or activities shall be performed by the contractor unless otherwise noted on the drawings or specifications.

1.1.10 Contract Line Item Number (CLIN): A specifically described unit of work for which a price is provided in the contract.
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1.1.11 Contractor means the person or persons, partnership or corporation named as contractor in this contract operating as an independent contractor and not as an agent of the State in the performance of its functions. Whether referred to as “contractor”, “prime contractor”, “prime”, “separate contractor” or “single contractor”, it shall be understood to mean contractor. It does not include suppliers or material men.

1.1.12 Contracting Officer means the individual authorized, as an officer of the University, to administer the design, engineering and construction of all University buildings and facilities. He/she is the procuring contracting officer representing the University personally or through University’s project managers in all relationships with contractors, consultants and architects/engineers. This includes a duly appointed successor or an authorized administrative contracting officer (ACO) acting within the limits of his/her authority.

The contracting officer is the interpreter of the conditions of the contract and the judge of its performance. He/she shall not take arbitrary positions benefiting either the University or the contractor but shall use his/her powers under the contract to enforce its faithful performance by both.

1.1.13 Wherever in the specifications or upon the drawings the words “directed”, “required”, “ordered”, “designated”, “prescribed” “shall” or words of like import are used, it shall be understood that the “direction”, “requirement”, “order”, “designation” or “prescription” of the contracting officer is intended and similarly the words “approved”, “acceptable”, “satisfactory” or words of like import shall mean “approved by”, “acceptable to” or “satisfactory to” the contracting officer unless otherwise expressly stated.

1.1.14 “Final Acceptance” shall mean the acceptance of the Project upon Final Completion.

1.1.15 "Final Completion" shall mean the date the project, including all punch list items properly performed by the contractor, all warranties have been transferred to the University and the Contractor has demobilized from the site.

1.1.16 General Construction Contractor: The general construction contractor means either the contractor for general construction whenever separate prime contractors are involved in a project or the sole contractor if there are no other prime contractors involved.

1.1.17 Notice is a written directive or communication served on the contractor to act or perform work or carry out some other contractual obligation. It shall be deemed to have been duly served if delivered to an individual or member of the firm or entity or to an officer of the corporation for whom it was intended. This includes delivery by courier, registered or certified mail, telegram, facsimile, E-mail or other electronic means to the business address cited in the contract documents.

1.1.18 Plans means any drawings or reproductions thereof pertaining to the details of the work contemplated by this contract.
1.19 **Project** is the general term for identification of the total contract. It includes the work and all administrative aspects required to fully satisfy the contract requirements.

1.20 **Public Contract:** Any contract or agreement entered into by the State of New Jersey or any instrumentality of the State, including Rowan University, to purchase goods, services or both.

1.21 The term **site, construction site or project site** refers to the geographical area of the entire University campus at which the work under the contract is to be performed bounded by the Contract Limits and other areas designated by the University.

1.22 **Specifications** means all written agreements, instructions or other documents in or pursuant to this contract pertaining to the method of performing the work and the results to be obtained.

1.23 The words **State** or **Agency of the State**, as are used herein, mean the State of New Jersey or any department or agency of the State.

1.24 **Sub-contractor** means the person or persons, partnerships or corporations who enter into a contract with the contractor for the performance of work under this contract or the sub-contractors of any tier of such individual or corporation.

1.25 **Substantial Completion:** The date the building or facility is operational or capable of serving its intended use even though all permanent installations are not in place. The determination as to the date of substantial completion shall be made pursuant to Article 8.3 of the General Conditions and other applicable Sections in the Project Manual.

1.26 **Schedule of Values** shall mean a detailed list of the work activities required for project construction; including costs allocated thereto to be utilized by the Architect/Engineer in progress payments. The schedule of values shall include all elements associated with fulfilling the requirements of the contract; bonds, insurance, etc.; major items of material or equipment.

1.27 The term **work**, as used herein, comprises all construction efforts required by the contract documents and all supervision, labor, material, management and equipment necessary to complete such construction.

1.2 **INTENT OF THE CONTRACT**

1.2.1 The drawings and specifications of the contract are intended to require the contractor to provide for everything necessary to accomplish the proper and complete finishing of the work. All work and materials included in the specifications and not shown on the drawings or shown on the drawings and not in the specifications shall be performed or furnished by the contractor as if described in both. Any incidental material and/or work not specified in the drawings and/or specifications which is, nevertheless, necessary for the true development thereof and reasonably inferable there from, the contractor shall understand the same to be implied and required and
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he/she shall perform all such work and furnish all such materials as if particularly delineated or described therein. Should there be an obvious error or omission in the drawings or specifications, it shall be the contractor's responsibility to complete the work as reasonably required consistent with the intent of such drawings and specifications.

1.2.2 The contractor shall abide by and comply with the true intent and meaning of the drawings, the specifications and other contract documents taken as a whole and shall not avail himself/herself of any unintentional error or omission should any exist. Should any error, omission or discrepancy appear or should any doubt exist or any dispute arise as to the true intent and meaning of the drawings, the specifications or other contract documents, or should any portion thereof be obscure or capable of more than one interpretation, the contractor shall immediately notify the contracting officer or the University's project manager and seek correction or interpretation thereof prior to commencement of affected work. The contracting officer shall issue his/her interpretation with reasonable promptness. However, the contractor shall make no claim against the University for expenses incurred or damages sustained on account of any error, discrepancy, omission or conflict in the contract documents unless, and only to the extent that, the contractor has submitted a written request for interpretation, clarification or correction to the Architect/Engineer and the contracting officer through the University's project manager and such written request has been received by the Architect/Engineer and the contracting officer at least five (5) working days prior to the date fixed for the opening of bids provided further that such claim shall only be recognized by the University if the matter raised by the written request has not been addressed by the University through the issuance of an addendum interpreting, clarifying and/or correcting such error, discrepancy, omission or conflict. In case of dispute, the matter shall be referred to the contracting officer for decision.

1.2.3 Each and every provision required by law to be inserted in the contract documents shall be deemed to have been inserted therein. If any such provision has been omitted or has not been correctly inserted, then, upon application of either party, the contract shall be physically amended to provide for such insertion or correction.

1.2.4 The organization of the specifications into divisions, sections and articles and the arrangement of drawings shall not be construed by the contractor as being intended to divide or allocate the work among sub-contractors in any manner or to establish the extent of the work to be performed by any trade.

1.2.5 N/A

1.2.6 The contractor shall do no work without proper drawings and instructions unless authorization to proceed from the contracting officer or someone designate by the contracting officer is received in writing by the contractor. In giving such additional instructions, the contracting officer may make minor changes in the work not involving extra cost.

1.2.7 All drawings referred to, together with such supplementary details as may be furnished and approved from time to time as the work progresses, are understood
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as being included as part of the contract to which they relate.

1.2.8 In the event of a conflict between provisions of the contract documents, the documents shall take precedence in the following order:

(a) Executed Contract
(b) Addenda
(c) Supplemental General Conditions
(d) General Conditions
(e) Specifications
(f) Drawings in the following order of precedence:
   (1) notes on drawings
   (2) large scale details
   (3) figured dimensions
   (4) scaled dimensions

Where there may be a conflict not resolvable by application of the provisions of this paragraph, then the contractor shall accept the condition more favorable to the University. In the event the conflicting condition is one of physical materials, equipment and/or labor then the more expensive labor, materials or equipment shall be assumed to be required and shall be provided by the contractor.

1.2.9 On all work involving alterations, remodeling, repairs or installation within existing buildings, it shall be the responsibility of the contractor by personal inspection of the existing building, facility, plant or utility system to satisfy himself/herself as to the accuracy of any information given which may affect the quantity, size and/or quality of materials required for a satisfactorily completed contract whether or not such information is indicated on the drawings or is included in the specifications. All contracts shall include the cost of all material and labor required to complete the work.

1.2.10 Dimensions of the work shall not be determined by scale or rule and figured dimensions shall be followed at all times unless obvious discrepancies exist. The contractor shall verify all dimensions at the job site and shall take any and all measurements necessary to verify the drawings and to properly lay-out the work. Any discrepancies affecting the lay-out of the work shall be called to the Architect's/Engineer's attention. No work so affected shall proceed until such discrepancy is corrected and the Architect/Engineer provides written confirmation of the resolution to the University's project manager.

1.2.11 Where on any drawing a portion of the work is fully drawn and the remainder is indicated in outline form, the portions fully drawn shall apply to all other like portions of the work unless specifically indicated or specified otherwise.

1.2.12 All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes whether they appear in the work except where a contrary result is clearly indicated by the contract documents.
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1.2.13 Where codes, standards, requirements and publications of public and private bodies are referred to in the specifications, references shall be understood to be to the latest revision prior to the date of receiving bids except where otherwise indicated.

1.2.14 Where no explicit quality or standards for materials or workmanship are established for work, such work is to be of good quality for the intended use.

1.2.15 All manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the manufacturer’s written or printed directions and instructions unless otherwise indicated in the contract documents.

1.2.16 The mechanical, electrical and fire protection drawings are diagrammatic only and are not intended to show the alignment, physical locations or configurations of such work. Such work shall be coordinated by the Contractor and shall be installed to clear all obstructions, permit proper clearances for the work of other trades, satisfy all code requirements and present an orderly appearance where exposed at no additional cost to the Owner.

ARTICLE 2 - CONTRACTING OFFICER

2.1 CONTRACTING OFFICER’S RIGHT TO STOP THE WORK

2.1.1 If the contractor fails to correct defective work or fails to carry out the work in accordance with the contract documents, the contracting officer may order the contractor to stop the work, or any portion thereof, until the cause for such order has been eliminated. Stoppage of the work, however, shall not render the University liable for claims of any kind, including delays sustained by the contractor as the result of the stoppage of the work and there shall be no extension of time to the schedule allowed.

2.2 CONTRACTING OFFICER’S RIGHT TO TERMINATE FOR CAUSE

2.2.1 If the contractor makes a general assignment for the benefit of his/her creditors, if a receiver is appointed on account of his/her insolvency or if he/she persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials so as to avoid or eliminate delays in the orderly progress of the work in accordance with the approved schedule, or if he/she fails to make prompt payment to sub-contractors or for materials or labor, or persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or if he/she or any of his/her sub-contractors is guilty of a substantial violation of a provision of the contract documents or otherwise defaults or neglects to carry out the work in accordance with the contract documents, then the contracting officer may, without prejudice to any right or remedy and, after giving the contractor and his/her surety three (3) working days written notice to forthwith commence and continue correction of such default or neglect with diligence and promptness, terminate the employment of the contractor by the issuance of a written notice to that effect to the contractor and his/her surety at any
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time subsequent to three (3) working days thereafter should they, or either of them, fail to comply with the demands of the original three (3) day notice as mentioned above.

2.2.2 Upon such termination, the contracting officer may take possession of the site and of all the materials, equipment and tools on the site and may finish the work by whatever method he/she may deem expedient. In such case, the contractor shall not be entitled to receive any further payment until the work is finished. The person or firm designated to carry out such work will be paid as authorized by the contracting officer without entailing any personal liability upon the officers of the University issuing certificates or making such payment(s).

2.2.3 If the unpaid balance of the contract sum exceeds the cost of finishing the work, including liquidated damages for delays and all consequential damages sustained by the University flowing from such breach of contract, such excess shall be paid to the contractor. If such costs exceed the unpaid balance, the contractor and/or his/her surety shall pay the difference to the University promptly upon demand and this obligation shall survive the termination of the contract.

2.2.4 If, within three (3) working days following receipt of notice of termination by the contractor's surety, the issuer of the performance and payment bonds, the said surety exercises its right to take over the work and expeditiously commences to prosecute the same to completion, the contracting officer shall permit him/her to do so under the following terms and conditions:

(a) evidence of the surety's intention to take over and complete the contract shall be in writing over the signature of a University project manager and served upon the contracting officer within three (3) days after receipt by the surety of notice of termination

(b) the execution of a written agreement between the University, by the contracting officer, and the surety whereby the latter undertakes and assumes the obligation to complete the balance of the work of its defaulting contractor in accordance with the terms and conditions of the University contractor agreement, to be performed by a substituted contractor satisfactory to the contracting officer, at the surety's sole cost and expense, and providing for payments to the surety or to the substituted contractor of unpaid contract balances, if any, then in the hands of the University

(c) the said agreement shall also expressly provide that the surety shall not be relieved thereby from any of its obligations under the performance and payment bonds and that it furnishes the University with an additional performance and payment bond to secure the faithful performance of the substituted contractor

(d) that all current obligations for labor and materials incurred and outstanding by the defaulting contractor on this project be paid without delay, subject to allowance of a reasonable time within which to verify such claims by the surety

(e) that the parties expressly understand and agree that this agreement is without prejudice and is subject to such rights and remedies as either party, including the contractor, may elect to assert after final completion and acceptance of the
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work

2.2.5 Right to Terminate for Convenience: The contracting officer reserves the right to terminate for the convenience of the University in which case the contractor shall be entitled to a proportion of the fee for which the services actually and satisfactorily performed by the contractor shall bear to the total services contemplated under this agreement, less payments previously made, together with appropriate reimbursable costs and a reasonable termination fee to be negotiated between the contractor and the contracting officer.

2.3 REVIEW OF CONTRACTOR CLAIMS AND DISPUTES

2.3.1 In the event of a dispute other than a Change Order dispute between the Contractor and the University, the Contractor may request, in writing, a hearing of any claim, dispute or matter in question relating to this contract. The University shall then designate a Hearing Officer, who may be the University’s designee under this contract. The Hearing Officer shall not side with the University or the Contractor but shall use his/her powers to enforce faithful performance by all.

2.3.1.1 The Hearing Officer shall permit both the Contractor and the University to provide such relevant information to the Hearing Officer and each other, as the Hearing Officer needs to render a decision. Upon rendering a decision, the Hearing Officer will memorialize that decision in writing.

2.3.1.2 In the event that both the Contractor and the University agree with the Hearing Officer's decision, each will acknowledge its acceptance in writing.

2.3.1.3 In the event that the dispute is not resolved as set forth in Paragraph 2.3.1.2 hereof, then the University shall review all information provided to the Hearing Officer pursuant to Paragraph 2.3.1.1 hereof and the finding of the Hearing Officer and shall issue a final decision which shall be reduced to writing and a copy provided to the University's designee and the Contractor.

2.3.1.4 Pending such final decision, the Contractor shall have no recourse to court actions, assuming that the aforesaid administrative procedures take place within a reasonable amount of time. Upon receipt of the final decision, either party may then commence appropriate legal proceedings.

2.3.1.5 Unless and until it is determined as a result of any legal proceedings that the University is in material breach of this contract the Contractor shall proceed diligently with the performance of its contract responsibilities.

2.4 UNIVERSITY REPRESENTATION

2.4.1 The University shall be represented on the site by a University’s project manager. The University’s project manager will conduct or contract out on-site inspections, maintenance of logs for construction progress and problems encountered, approval of contractor's requisition for payments subject to final approval by the Architect and contracting officer, attendance at job meetings, the act of liaison with the Architect/Engineer and contractor, preparation and submission of reports on special problems associated with the job, evaluation and processing change orders and generally remain fully cognizant and be kept informed by the contractor of every
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aspect of ongoing construction. The University's project manager will have only those duties, which are required of an owner. Responsibility for completion of this project, pursuant to the contract documents, remains with the contractor. No right of the University exercised hereunder shall be considered a waiver of the contractor's obligation or any obligations created by this agreement, which may be modified or excused only in accordance with the terms of the contract.

ARTICLE 3 - ARCHITECT/ENGINEER AND CONSTRUCTION MANAGER

3.1 ARCHITECT/ENGINEER

3.1.1 The Architect's/Engineer's has no power or authority to approve changes to the work under this contract and its role is that of consultant to the University.

3.2 ADMINISTRATION OF THE CONTRACT

3.2.1 The Architect/Engineer and the University's project manager will provide a certain portion of the administration of the contract as hereinafter described.

3.2.2 The Architect/Engineer and the University's project manager will monitor the execution and progress of the work and will immediately notify the University of any related problems. The Architect/Engineer and the University's project manager will provide access to the work at all times. The general contractor shall provide facilities for such access so as to enable the Architect/Engineer and the University's project manager to perform their functions under the contract documents.

3.2.3 The Architect/Engineer and/or the University's project manager will not be responsible for, nor will they have control or charge of, construction means, methods, techniques, sequences of procedures or safety precautions and programs in connection with the work. The Architect/Engineer and/or the University's project manager will not be responsible for, nor have control or charge over, the acts or omissions of the contractor, sub-contractors or any of their agents or employees or any other person performing any of the work but shall have the obligation to immediately inform the contractor, and the contracting officer of any inadequate performance on the project.

In the event that the University's project manager notices any safety violations, the University's project manager shall have the right, but not the obligation, to inform the Contractor and to immediately stop work for any imminent or life threatening danger.

3.2.4 The University's project manager, after consultation with the Architect/Engineer, will recommend the rejection of work, which he/she believes does not conform to the contract documents. In his/her opinion, whenever he/she considers it necessary or advisable, he/she may request the contracting officer to provide special inspection or testing of the work whether or not such work has been fabricated, installed or completed. The Contractor shall pay for all such testing whether the work is deemed to conform to the contract document or not.
3.2.5 Both the Architect/Engineer and the University's project manager will periodically review the contractor's as-built drawings to determine whether these are up-to-date.

3.3 INSPECTIONS - SUBSTANTIAL AND FINAL COMPLETION

3.3.1 The Architect/Engineer and the University's project manager will conduct inspections, accompanied by the contractor to determine the dates of substantial and final completion. The Architect/Engineer and the University's project manager will receive and forward written warranties and related documents required by the contract documents and assembled by the contractor to the contracting officer for his/her review. The Architect/Engineer and the University's project manager will approve the issuance of a certificate of final completion.

3.4 OWNERSHIP AND USE OF DOCUMENTS

3.4.1 All drawings, specifications and copies thereof furnished to the Contractor by the Architect/Engineer are and shall remain the property of the University. They are reserved to this project only and are not be to be used on any other project. Submission or distribution of documents to meet official regulatory requirements or for any other purposes in connection with the project shall not be construed as derogation of the Architect's/Engineer's copyright or other reserved rights.

3.5 UNIVERSITY'S PROJECT MANAGER

3.5.1 In addition to the duties specified elsewhere in the contract documents, the University's project manager and the contractor shall perform as follows in relation to one another:

a) the contractor will permit the University's project manager to inspect delivery of any off-site materials that are being requisitioned by the contractor;
b) upon request by the University's project manager, the contractor will schedule visits to fabrication plants to inspect the status of various fabricated materials with regard to quality and scheduled delivery; the contractor will allow the University's project manager access to such facilities;
c) the contractor will attend a Preconstruction conference and bi-weekly project meetings, or more often if necessary, at times and locations specified by the University's project manager;
d) the contractor shall submit to the contracting officer, through the University's project manager, all information or requests concerning scheduling, contract or change order/claims;
e) the University's project manager will receive, log, transmit and evaluate any requests from the contractor for interpretations of the meaning and intent of the contract documents to the contracting officer and Architect/Engineer;
f) the University's project manager will monitor all training by the contractor of owner's representatives for equipment and maintenance procedures.

ARTICLE 4 - THE CONTRACTOR
4.1 REVIEW OF CONTRACT

4.1.1 The contractor has the duty and warrants and represents that he/she has thoroughly examined and is familiar with all the contract documents including, but not limited, the complete set of drawings and specifications of the entire project; all other documents referred to in the advertisement for bids, the specifications, or otherwise; that he/she has noted cases where it is specified that certain work or materials, or both, are to be omitted from the contract and to be furnished or installed by another; that he/she has carefully examined the site and the contract; that from his/her own investigations, he/she has satisfied himself/herself as to the nature and location of the work, the current local equipment labor and material conditions and all matters which may, in any way, affect the work or its performance. The contractor is responsible to check and verify all conditions inside and outside the contract limit lines to determine whether any conflict exists with the work he/she is required to perform under the contract. The submission of a bid is conclusive evidence that the bidder has made such examination and is fully aware of the conditions to be encountered in performing the work including any subsurface condition which could be ascertained by due diligence and as to the requirements of the contract documents. This includes a verification of all elevations, utility locations and other site data. Within the site of the project, there may be public utility structures and, notwithstanding any other clause or clauses of this contract, the contractor shall not proceed with the work until he/she has made diligent inquiry at the utility companies and municipal authorities or other owners to determine their exact location. The contractor shall notify the utility companies and municipalities or other owners involved in writing of the nature and scope of the project and of his/her operation that may affect their facilities or property. The contractor is directed to the fact that the approximate locations of known utility structures and facilities that may be encountered within and adjacent to the limits of the work may be shown on the plans. The accuracy and completeness of this information is not guaranteed by the State and the contractor is advised to ascertain for himself/herself all the facts concerning the location of these utilities. The contractor shall carry out his/her work carefully and skillfully and shall support and secure utility structures so as to avoid damage to them. It is understood and agreed that the contractor has considered all of the permanent and temporary utility facilities in their present and/or relocated positions as shown on the plans and as revealed by his/her site investigation in his/her bid, is cognizant of the limited ability of the State to control the actions of the utilities and has made allowance for the fact that additional compensation will not be allowed for any delays, inconvenience or damage sustained by him/her due to any interference from the said utility facilities or the operation of moving them in his/her bid. As a result of such examination and investigation, the contractor warrants and represents that he/she fully understands the intent and purposes of the contract documents and his/her obligations there under and that he/she accepts responsibility for and is prepared to execute and fulfill completely by his/her construction work the intent of the contract without exception and without reservation at the price specified in the contract.

4.1.2 The contractor shall carefully study and compare the contract documents during the progress of the work and shall immediately report any error, inconsistency or omission to the University’s project manager upon discovery. The contractor shall
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immediately report any error, inconsistency or ambiguity detected during the course of the project to the University’s project manager and shall do no work thereafter which may be affected by such error until the contracting officer, through the University’s project manager, has had the opportunity to respond and clarify the work it wants performed in view of this information. Wherever any error, inconsistency or omission appears, it shall be disposed of pursuant to appropriate procedures set forth elsewhere herein.

4.1.3 Unless otherwise ordered in writing by the contracting officer through the University’s project manager, the contractor shall perform no portion of the work without approved change orders, approved shop drawings or samples for such portions of the work or other approvals as may be applicable and required by the contract documents.

4.1.4 Unless otherwise provided in the contract documents, the contractor shall provide and pay for all labor, equipment, materials, tools, construction equipment and machinery, water, heat, utilities, transportation and other facilities and services necessary for the proper execution and completion of the work whether or not incorporated or to be incorporated in the work.

4.1.5 At all times, the contractor shall enforce strict discipline and good order among his/her employees and shall not employ any individual who violates these provisions or is unfit or anyone not skilled in the task assigned to him/her on the work.

4.1.6 The contractor shall be obligated to pay the prevailing wage rates set forth in the specifications. He/she shall abide by the requirements of the State's Affirmative Action Program. He/she shall also be responsible to insure that all principles of safety are carried out as further described in Article 12 herein. The contractor shall prepare certified payrolls and shall submit such records to the University as required by New Jersey statute and corresponding regulations.

4.2 NEW JERSEY PREVAILING WAGE ACT

4.2.1 Each contractor or any sub-contractor shall comply with the New Jersey Prevailing Wage Act Laws of 1963, Chapter 150, and all amendments thereto as this Act is hereby made a part of every contract entered into on behalf of the University except those contracts which are not within the contemplation of the Act. Provisions of the Act include:

a) All workmen employed in the performances of every contract in which the contract sum is in excess of $2,000 and work to which the University is a party shall be paid not less than the prevailing wage rate as designed by the Commissioner of Labor and Industry or his/her duly University’s project manager.

1. The contractor and all sub-contractor(s) performing public work for the University who are subject to the provisions of the Prevailing Wage Act shall post the prevailing wage rates for each craft and classification involved as determined by the Commissioner, including the effective date of any changes thereof, in prominent and easily accessible places at the site of the

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work or at such place or places as are used by them to pay workmen/workwomen their wages.

2. The contractor's signature on the proposal is his/her guarantee that neither he/she nor any sub-contractor is currently listed or is on record by the Commissioner as one who has failed to pay the prevailing wages according to the Prevailing Wage Act.

b) In the event it is found any workman/workwoman employed by the contractor or any sub-contractor covered by the contract in excess of $2,000 for any public work to which the University is a party has been paid a rate of wages less than the prevailing wage required to be paid by such contract, the contracting officer may terminate the contractor's or sub-contractor's right to proceed with the work or such part of the work as to which there has been a failure to pay required wages and may otherwise prosecute the work to completion.

c) Nothing contained in the Prevailing Wage Act shall prohibit the payment of more than the prevailing wage rate to any workman/workwoman employed on a public work.

4.3 SUPERVISION AND CONSTRUCTION PROCEDURES

4.3.1 The contractor shall supervise and direct the work using his/her best skill and attention and coordinate his/her work with his/her sub-contractors. He/she shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions or the work under the contract.

4.3.2 The contractor shall employ a full-time, competent superintendent and necessary foreperson and assistants who shall be in attendance on the project site at all times during the progress of the work. The superintendent shall represent the contractor and all communications given to the superintendent shall be as binding as if given to the contractor. Important communications shall be confirmed in writing. The University reserves the right to require a change in a superintendent if his/her performance, as judged by the contracting officer, is deemed to be inadequate. Upon application in writing to the contracting officer, this requirement for a full-time superintendent may be waived by the contracting officer should he/she determine that such staffing is not required by the University.

4.3.3 The contractor shall hire qualified, able crafts persons in their respective lines of work.

4.3.4 The various sub-contractors shall have competent superintendents and/or forepersons in charge of their respective portions of the work at all times. They shall not employ a person unfit or unskilled in the work assigned to him/her. If it should become apparent to the University or its consultant that a sub-contractor does not have his/her portion of the work under control of a competent foreperson, the contractor shall take appropriate steps to immediately provide proper supervision.

4.3.5 If due to a trade agreement or otherwise stand-by personnel are required to supervise equipment installation or for any other purpose during normal working hours of other trades, the contractor shall valuate and include the costs thereof in his/her bid price and shall provide said services without additional charge.
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4.3.6 The contractor shall give the Architect/Engineer timely notice of any additional drawings, specifications or instructions required to define the work in greater detail or to permit the proper progress of the work.

4.3.7 The contractor shall correct all work incorrectly done at the contractor’s own expense.

4.4. RESPONSIBILITY FOR THE WORK

4.4.1 The contractor shall be responsible to the University, the contracting officer, the University’s project manager, the Architect/Engineer and to separate contractors having a contract with the University on this project for the acts and omissions of his/her employees, sub-contractors and their agents and employees which injure, damage or delay such other contractors in the performance of their work. This responsibility is not limited by the applicable provisions stated elsewhere herein but is in conjunction with and related thereto.

4.4.2 The contractor shall be responsible for all damage or destruction caused directly or indirectly by his/her operations to all parts of the work, both temporary and permanent, to all affected property including adjoining property.

4.4.3 At his/her own expense, the contractor shall protect all finished work and any stored materials whether on site or off and keep the same protected until the project is completed and accepted. In the case of substantial completion accompanied by beneficial occupancy by the University, the contractor's obligation to protect his/her finished work shall cease simultaneously with the occupancy of the portion or portions of the structure.

4.4.4 The contractor shall defend, protect, indemnify and save harmless the State and the University from all claims, suits, actions, damages and costs of every name and description arising out of, or resulting from, the performance of or failure to perform work under this contract. This responsibility is not limited by the provisions of other indemnification provisions included elsewhere herein or compliance with any other insurance provision.

4.4.5 In order to protect the lives and health of his/her employees, the contractor shall comply with all applicable statutes, laws, rules, and regulations and shall maintain an accurate record of all cases of death, occupational disease and injury requiring medical attention or causing loss of time from work arising out of and in the course of employment on work under this contract. The contractor alone shall be responsible for the safety, efficiency and adequacy of his/her plant, appliances and methods and, for any damage or injury, which may result from his/her failure or his/her improper construction, maintenance or operation.

4.5 PERMITS - LAW - REGULATIONS

4.5.1 Unless otherwise provided in the contract documents, the contractor shall secure but the University shall pay for all permits and governmental fees and inspections necessary for the proper execution and completion of the work.
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4.5.2 All construction work shall be done in accordance with the New Jersey Uniform Construction Code. No work requiring inspections and approvals of construction code officials is to be covered or enclosed prior to inspection and approval by appropriate code enforcement officials.

4.5.3 The work under this contract is exempt from local ordinances, codes and regulations as related to the building and the site on which it is located, except where construction could adversely affect adjacent property, public sidewalks and/or streets. The contractor shall coordinate his/her activities with municipal and/or highway authorities having appropriate jurisdiction.

4.5.4 Soil conservation measures are to be in accordance with the County Soil Conservation District requirements and all pertinent codes and regulations.

4.5.6 The contractor shall comply with all applicable Federal, State and local laws and regulations and all conditions of permits controlling pollution of the environment. Necessary precautions shall be taken to prevent pollution of streams, lakes, ponds, wetlands, ground water and reservoirs with fuels, oils, bitumens, chemicals or harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter. All sewage disposal work shall conform with the regulations of the State Department of Environmental Protection.

4.5.7 The University will pay for all code inspections; however, it is the contractor's responsibility to request and set up inspections with the appropriate agency for all work requiring inspection, in a timely manner.

4.5.8 Consistent with sub-paragraph 4.4.4, the contractor shall be responsible for and save harmless the University from all fines, penalties or loss incurred for, or by reason of, the violation of any Federal, State or municipal law, rule, regulation or ordinance while the said work is in the process of construction.

4.5.9 Without limiting the foregoing, the contractor shall comply with the Federal Occupational Safety and Health Act of 1970 and all of the rules and regulations promulgated there under and the New Jersey Worker and Community Right-to-Know Act, PL1983 c. 315 N.J.S.A. 34:5A-1, et.seq.

4.5.10 As a result of a finding, by an appropriate finder of fact, that the contractor caused a substantial violation of a Federal, State or local statute or regulation on said project, the University may declare the contractor to be in default.

4.5.11 Prior to the start of any crane equipment operations, the contractor shall make all necessary applications and obtain all required permits from the Federal Aviation Administration (FAA). The sequence of operations, timing and methods of conducting the work shall be approved by the FAA to the extent it relates to their jurisdiction.

4.6 STORAGE, CLEANING AND FINAL CLEAN-UP

4.6.1 The contractor shall confine his/her apparatus, the storage of his/her equipment, tools
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and materials and his/her operations and workmen/workwomen to areas permitted by law, ordinances, permits, contract limit lines as established in the contract documents, the rules and regulations of the University or as ordered by the contracting officer and/or University’s project manager and shall not unreasonably encumber the site or the premises with his/her materials, tools and equipment.

4.6.2 At all times during the progress of the work, the contractor shall keep the premises and the job site free from the accumulation of all refuse, rubbish, scrap materials and debris caused by his/her operations to the end that the premises and site shall present a neat, orderly and workmanlike appearance at all times. This is to be accomplished as frequently as is necessary by the removal of such material, debris, etc. from the site and the owner's premises.

4.6.3 Upon completion of the construction, the contractor will remove all his/her tools, construction equipment, machinery, temporary staging, false work, formwork, shoring, bracing, protective enclosures, scaffolding, stairs, chutes, ramps, runways, hoisting equipment, elevators, derricks, cranes, etc. from the project site.

4.6.4 Should the contractor not promptly and properly discharge his/her obligation relating to cleaning and final clean-up, the University shall have the right to employ others and to charge the cost thereof to the contractor after first having given the contractor a three (3) working day written notice of such intent.

4.6.5 In each instance, the clean-up work shall be performed by the contractor.

4.6.6 All construction equipment, materials or supplies of any kind, character or description of value belonging to the contractor which remains on the job site for more than thirty (30) days from the date of the certificate of final acceptance and completion issued by the University to the contractor shall become the absolute property of the University. It shall be disposed of in any manner the University deems reasonable and proper. Disposal costs will be the responsibility of the contractor.

4.7 CUT-OVERS, TIE-INS, INTERRUPTIONS TO EXISTING BUILDINGS

4.7.1 All cut-overs of inter and tie-ins to existing building shall be scheduled and coordinated in advance with the contracting officer’s representative and shall be done at a time convenient to the University so as not to unreasonably interfere with its operations.

4.8 WORKDAYS

4.8.1 Regular working hours shall be 8:00 a.m. to 4:30 p.m. Monday through Friday or as agreed to by the Contractor and University after consultation with the University's project manager. Changes thereto may be granted with written approval of the contracting officer. Any work required to be performed after regular working hours or on Saturdays, Sundays or legal holidays as may be reasonably required consistent with contractual obligations shall be performed without additional expense to the University. The contractor shall obtain approval of the contracting officer through the
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University's project manager for performance of work after regular working hours or on non-regular workdays at least forty-eight (48) hours prior to the commencement of overtime, unless such overtime work is caused by an emergency.

4.9 DRAWINGS, SPECIFICATIONS, SHOP DRAWINGS, AS-BUILT DRAWINGS

4.9.1 The contracting officer, through the Architect/Engineer or University's project manager, will furnish additional instructions for the proper execution of the work after he/she becomes aware of its need. All drawings and instructions issued by the contracting officer shall be consistent with the contract documents and reasonably inferable therefrom. The work shall be executed in conformity therewith. The contractor shall do no work without proper drawings and instructions. In giving such additional instructions, the contracting officer will have the authority to make minor changes in the work not involving extra cost. Drawings and instructions with such supplementary details as may be furnished or approved are understood to be included and a part of the contract.

4.9.2 Where certain of the work is shown in complete detail but not repeated in similar detail in other areas of the drawings or there is an indication of continuation, the remainder being only shown in outline, the work shown in detail shall be understood to be required in other like portions of the project.

4.9.3 At any time after the execution of his/her contract, the contractor shall not make any claims whatsoever based upon insufficient data or his/her incorrectly assumed conditions nor shall he/she claim any misunderstandings with regard to the nature, conditions or character of the work to be done under the contract and he/she shall assume all risks resulting from any changes in conditions not caused by the University, the contracting officer or the University's project manager which may occur during the progress of the work. In the event that the Contractor alleges that there was insufficient data or that he/she incorrectly assumed any condition or that he/she claims any misunderstanding with regard to the nature, conditions or character of the work, the Contractor shall disclose to the University the method by which he/she intended to perform the work in question as set forth in his/her bid. This information must be provided with the initial notice from the Contractor to the University. The Contractor shall not be entitled to any additional compensation based upon clarifications issued pursuant to this section.

4.9.4 If the contractor desires to make any deviations or changes from the requirements of the contract documents, he/she shall obtain the consent of the contracting officer through the University's project manager or Architect/Engineer to such changes in writing before submitting drawings showing such proposed changes. All drawings submitted by the contractor shall have been checked and approved by him/her before submission. The drawings and specification references shall be noted on all submissions. Failure to comply with these instructions will be sufficient reason to return such drawings to the contractor without any action being taken.

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4.9.9 Wherever any material is specified in accordance with federal specifications, ASTM specifications, American National Standards Institute, Inc. specifications, manufacturer's association's specification standards or other standards, the contractor shall present an affidavit to the Architect/Engineer upon request from the manufacturer certifying that the material complies with the particular standard specification. Where necessary and requested or specified, supporting test data shall be submitted to substantiate compliance. All tests required in support of the affidavit shall be at the cost of the contractor.

4.10 SAMPLES

4.10.1 The contractor shall furnish all samples as directed to the University's project manager who shall forward them to the Architect/Engineer and University for approval. The work shall be in accordance with approved samples. Such samples shall be representative of the actual and the University's project manager shall submit conditions promptly to the contracting officer after approval by the Architect/Engineer at the beginning of the work as so as give the contracting officer time to examine them. Contractor shall provide all disclaimers, limitations and conditions to contracting officer in order to fully inform contracting officer of potential deviations from the sample, including but not limited to color, texture, type, finish, etc. Any list of samples prepared by the Architect/Engineer is for the contracting officer's convenience only and shall not be construed as limiting the number of samples, which the contractor shall furnish upon request of the Architect/Engineer or University's project manager.

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4.12 OPENINGS, CHANNELS, CUTTING AND PATCHING

4.12.1 The contractor shall be responsible for furnishing and setting of sleeves, built-in items, anchors, inserts, etc. for his/her work and for all cutting, fitting, closing-in, patching, finishing or adjusting of his/her work in a new and/or existing construction as required for the completed installation. Where applicable, the contractor shall build these items into the construction.

4.12.2 The contractor shall built recesses, channels, chases, opening and flues and shall leave or create holes where on drawings or where directed for steam, water or other piping, electrical conduits, switch boxes, panel boards, hues and ducts or any other feature of the heating and ventilating work.

4.12.3 The contractor shall close, build-in and finish around or over all openings, chases, channels, pockets, etc. after installation has been completed.
4.13 TESTS

4.13.1 The contractor shall notify the contracting office in writing through the University’s project manager of all work required to be inspected, tested or approved. The notice shall be provided no later than five (5) working days prior to the scheduled inspection, test or request for approval. The contractor shall bear all costs of such inspections, tests or approvals except for code inspections as stated in 4.5.6. All tests must be recorded by the contractor and records made available to the University and/or University’s project manager upon request.

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4.13.5 The contractor shall acquire inspection or testing services using only those firms/entities preapproved by the University. Failure to use a firm/entity preapproved by the University shall be grounds for rejection of the inspection or test as non-conformance.

4.13.6 In addition to the above, the contractor agrees to insert in all contracts/purchase orders for inspection and testing the requirement for the inspection or testing firm/entity to submit, in conjunction with the report to the contractor, a copy of the report directly to the University's project manager or contracting officer. The copy shall be held pending receipt of the contractor's certification of the report. Further, the contractor agrees to require all reports be submitted within fourteen (14) calendar days of the test or inspection. Failure to provide reports within the required time shall be addressed pursuant to Article 10.3.9 of the general conditions.

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4.14 EQUIPMENT - MATERIAL

4.14.1 The contractor warrants to the University, the contracting officer, University’s project manager and Architect/Engineer that all materials and equipment furnished under the contract will be new, unless otherwise specified, and that all work will be of good quality, free from defects, faults and in conformance with the contract documents. All work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective and rejected by the contracting officer, the University’s project manager or the Architect/Engineer. If required by the University’s project manager, Architect/Engineer or the contracting officer, the contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. This warranty is not limited by the provisions of the other paragraphs contained herein.

4.14.2 The contractor shall furnish and deliver the necessary equipment and materials in ample quantities and as frequently as required to avoid delay in progress of the work.
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and shall store same so as not to cause interference with the orderly progress of the project.

4.14.3 The contractor shall furnish and pay for all necessary transportation, storage, scaffolding, centering, forms, water, labor, tools, light and power mechanical appliances and all other means, materials and supplies for properly prosecuting the work under this contract unless expressly specified otherwise. The contractor shall make arrangements to have representatives of his/her firm at the site to accept delivered materials. The University will not be held responsible for damage, theft or disappearance of the contractor’s property. In receiving and storing equipment and material, the contractor shall be responsible for OSHA requirements for the entire project including OSHA requirements for temporary access to all floors.

4.14.4 Whenever available, manufactured products of the United States shall be used in this work. Wherever practicable, preference shall be given at all times to material and equipment manufactured or produced in the State of New Jersey where such preference is reasonable and will best serve the interest of the University.

4.14.5 No materials, equipment or supplies for the work shall be purchased by the contractor or any sub-contractor subject to any lien or encumbrance or other agreement by which an interest is retained by the seller. By signing his/her requisition for payment, the contractor warrants that he/she has good and sufficient title to all such material, equipment and supplies used by him/her in the work, free from all liens, claims and encumbrances.

4.15 SUBSTITUTIONS

4.15.1 The contract documents are intended to produce a building of consistent character and quality of design. All components of the building, including visible items of mechanical and electrical equipment, have been selected to have a coordinated design in relation to the overall appearance of the building. The Architect/Engineer shall judge the design and appearance of proposed substitutes on the basis of their suitability in relation to the overall design of the project as well as for their intrinsic merits. The Architect/Engineer will not approve as equal to materials specified proposed substitutes which, in the Architect's/Engineer's sole opinion, would be out of character, obtrusive or otherwise inconsistent with the character or quality of design of the project. In order to permit coordinated design of color and finishes, the contractor shall, if required by the Architect/Engineer, furnish the substituted material in any color, finish, texture or pattern which would have been available from the manufacturer originally specified at no additional cost to the owner.

4.15.2 In the event the contractor should propose a substitution for the specified equipment or materials, it shall be his/her responsibility to submit proof of equality and to provide and pay for any tests which may be required by the contracting officer, the University's project manager or Architect/Engineer in order to evaluate such proposed substitution.

4.15.3 Where any particular brand or manufactured article is specified, it shall be regarded
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as a standard. Similar products of other manufacturers, capable of equal performance and quality in the opinion of the contracting officer, will be accepted, if approved.

4.15.4 There shall be no extension of time to the project schedule granted to accommodate the requirements of this Article 4.15. Substitutions and/or any testing, etc. required to be done by the contractor to have the substitution approved will be done within the approved project schedule timeframe.

4.15.5 The application for approval of a substitution by the contractor shall include the following information:

a) identifying information shall be fully and completely furnished
b) note whether the item is included in the specifications in which case, identify the specification paragraph and section
c) attach data indicating, in detail, whether and how the substitution differs, if at all, from the article specified
d) if a credit is to be offered for the substitution, a detailed itemization of the amount of credit must be shown
e) if the proposed substitution involves a change in the scope of the work of this or any other contractor or trade under the contract documents, then and, in that event, the contractor undertakes and agrees to be responsible for any and all added costs and thereby involved by reason of the change in the work, including redesign if any
f) when requesting approval of an out-of-state sub-contractor or material manufacturer or supplier, a statement indicating that reasonable effort was first made to find and employ New Jersey firms and/or materials at comparable costs, term and performance capabilities
g) an agreement by the contractor to submit proof of equality and to have such tests performed at his/her own expense as may be required by the contracting officer or the Architect/Engineer
h) the contractor shall not base his/her bid on substitutions, which may have been approved on previous projects; bids shall be based solely on plans and specifications of the subject project

Since substitutions are primarily for the financial benefit of the contractor, a credit change order shall accompany each request for substitution.

4.16 SUB-CONTRACTOR APPROVALS

4.16.1 Approval by the contracting officer, University’s project manager or Architect/Engineer of a sub-contractor or material supplier shall not relieve the contractor of the responsibility for complying with all provisions of the contract documents. The approval of a sub-contractor does not imply approval of any material, equipment or supplies.

4.16.2 The contractor shall coordinate and supervise the work performed by sub-contractors
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to the end that the work is carried out without conflict between trades and so that no delay to the general progress of the work occurs. The contractor and all subcontractors shall afford each trade, any separate contractor or the owner every reasonable opportunity for the installation of work and the storage of materials at all times.

4.17 PAY LIMITS FOR ADDITIONS OR DEDUCTIONS FOR EXCAVATION

4.17.1 The method of measurement and establishment of pay limits for additions or deductions for excavation shall be as follows:

a) Basement Excavations: Pay limit for excavation shall be determined by horizontal and sloped lines as defined on the foundation plan and "typical subsoils preparation details": In the case where the contract limit line is in close proximity to the building and sheeting/shoring are required, the vertical line of sheeting will be the pay limit line

b) All Pipelines and Encased Utilities: pay limit for trench excavations shall be limited to width of thirty-six inches (36") or the largest diameter of pipe barrel plus twenty-four inches (24"), whichever is greatest, and depth at bottom of pipe barrel; when rock is encountered, the contractor shall excavate to six inches (6") below bottom of pipe barrel; a compacted granular fill for the pipe shall be provided by the contractor; no additional payment will be made for this additional six inches (6") of granular fill

c) Encased Electrical Conduit, Steam Transmission Lines and Unformed Foundation Footing: width and depth of trench shall be limited to same width and elevations of the structure shown on the contract drawings

d) Unsuitable Foundation Material: where unsuitable foundation material is encountered, the contractor shall excavate to elevations as directed by the contracting officer through the University's project manager; unit prices for additional excavation and replacement with approved compacted granular fill, stated in the proposal form, shall be used as a basis for additional payment by the University; in the event that no unit price is included in the proposal form, the unit prices shall be negotiated with the contracting officer through the University's project manager prior to performance of the work or, at the option of the contracting officer, shall be done on a time and material basis plus ten percent (10%) profit; the decision setting unit prices shall be made by the contracting officer

4.18 SOIL BORINGS (IF APPLICABLE)

4.18.1 The University may possess geotechnical reports. Any geotechnical report/reports is/are included in the project manual for informational purposes only. The University is in no way responsible for, nor does it warrant, the data contained in the report(s) or the methods utilized in their preparation. Bidders will be granted access to the site to conduct their own tests upon request. The contractor assumes full responsibility for interpretation of any borings and the University shall have no responsibility or liability should the data provided prove to be incorrect or unrepresentative. All the provisions of paragraph 4.1.1 shall also apply hereto.
4.19 COORDINATION OF WORK

4.19.1 The contractor shall be responsible for coordinating all work performed upon the project as follows:

a) the contractor shall be responsible for all arrangements for the storage of materials
b) the contractor shall keep informed of the progress and the details of work of his/her sub-contractors and shall notify the University's project manager immediately of lack of progress or defective workmanship on the part of sub-contractors; the contractor shall provide scheduling updates at the bi-weekly project meetings

c) failure of the contractor to keep informed of the work progressing at the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by him/her of the status of the work as being satisfactory for proper coordination and completion of the project

d) the contractor shall be responsible to supervise, direct and manage the conduct of the construction and the efforts of all sub-contractors so as to deliver the project as required under the contract

4.19.2 The contractor shall refer to all of the drawings including those showing primarily the work of the mechanical, electrical or other specialized trades and to all of the sections of the specifications and shall perform all work reasonably inferable therefrom as being necessary to produce the indicated results. The contractor shall insure that all of his/her sub-contractors are fully familiar with their obligations to the contractor in his/her performance of the contract.

4.19.3 This project as described by these specifications and accompanying drawings is bid under a single prime contract as mandated by 1B1.2 of the instructions to bidders. However, this section will apply to work relating to this project and not described herein as part of this project.

4.20 PROTECTION OF CONTRACTOR'S PROPERTY

4.20.1 The contractor shall adequately secure and protect his/her own tools, equipment, materials and supplies. The University assumes no liability for any damage, theft or negligent injury to the contractor's property or to the property of his/her employees, agents or sub-contractors.

4.21 PATENTS

4.21.1 The contractor shall hold and save the University and its officers, agents, servants and employees harmless from liability of any nature or kind, including costs and expenses for or on account of any patented or unpatented invention, process, article or appliance manufactured or used in the performance of the contract, including its use by the University, unless otherwise specifically stipulated in the contract documents.
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4.21.2 License and/or royalty fees for the use of a process, which is authorized by the University, must be reasonable and paid to the holder of the patent or his/her authorized licensee directly by the University and not by or through the contractor. If the contractor uses any design, device or materials covered by letters, patent or copyright, he/she shall provide for such use by suitable agreement with the University of such patented or copyrighted design, device or material. It is mutually agreed and understood that, without exception, the contract prices shall include all royalties or costs arising from the use of such design, device or materials in any way involved in the work. The contractor and/or his/her sureties shall indemnify and save harmless the University from any and all claims for infringement by reason of the use of such patented or copyrighted design, device or materials or any trademark or copyright in connection with work agreed to be performed under this contract and shall indemnify the University for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.

4.22 RIGHT TO AUDIT

4.22.1 The University reserves the right to audit the records of the contractor in connection with all matters related to this contract. The contractor agrees to maintain his/her records in accordance with generally accepted accounting principles for a period of not less than three (3) years after receipt of final payment.

Accounting records must identify all labor and material, costs and expenses whether they be direct or indirect. The identification must include at least the project number for direct expenses and/or account number for indirect expenses. All charges must be supported by appropriate documentation including, but not limited to, canceled checks.

4.22.2 The contractor shall develop, maintain and make available to the contracting officer upon request such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, change orders, all original estimates, take-offs and other bidding documents, all sub-contractors and supplier contracts and changes, all records showing all costs and liabilities incurred or to be incurred in connection with the project including all sub-contractor and supplier costs, all payment records and all records incurred in labor and personnel of any kind, records and other data as the University may request concerning work to be performed under this contract.

4.22.3 The contractor acknowledges and agrees that no claim for payment, which is premised, to any degree upon actual costs of the contractor shall be recognized by the University except to the extent that such actual costs are substantiated by records required to be maintained under these provisions.

4.22.4 The contractor acknowledges and agrees that the contractor's obligation to establish, maintain and make available records and the University's right to audit as delineated herein shall extend to actual costs incurred by sub-contractors in performing work required under the contract or any supplemental agreement thereto.
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4.23 CONTROL WIRING

4.23.1 The contractor shall include in his/her proposal the cost of all control wiring and its installation for all mechanical equipment including, but not limited to, heating, ventilating and air conditioning systems, ATC systems, boilers, remote monitoring systems, etc. which systems require electrical control wiring. The contractor shall employ a sub-contractor approved by the University for all such control wiring. The sub-contractor shall provide a final certificate of electrical inspection of the control wiring.

Installed or control wiring must connect to a point of electrical power supply as shown on the contract documents.

4.24 STAND-BY PERSONNEL

4.24.1 The contractor, when obligated to employ stand-by personnel by trade agreement to which he/she is a party, shall determine and include all such costs thereof in his/her bid proposal. The contractor shall not, at any time, make a claim to the University for costs relating to stand-by maintenance or stand-by supervision for electric motor driven or other equipment. The University, under no condition, will entertain or consider a claim in this regard unless such claim is made as a result of the University’s unreasonable refusal to accept beneficial occupancy of the completed project.

ARTICLE 5 - CONTRACTOR FOR GENERAL CONSTRUCTION; SPECIAL RESPONSIBILITIES

Whenever the term "general construction contractor" is used herein, it is intended to mean either the contractor for general construction whenever separate prime contracts are involved or the sole contractor if there are no other prime contracts engaged on the project.

5.1 UNIQUE ROLE OF RESPONSIBILITY-STAFFING

5.1.1 Wherever separate contracts are awarded to separate prime contractors for different branches of the work or where there is a single prime contractor, the contractor for general construction, hereinafter referred to as the general construction contractor, has the responsibility for being the supervisor, manager, overseer, coordinator and expeditor of all the contractors and/or sub-contractors and/or of the total construction process and of its parts in accordance with the contract documents.

5.2 CONTRACTING OFFICER’S RELIANCE UPON CONTRACTOR FOR GENERAL CONSTRUCTION

5.2.1 The contracting officer relies upon the organization, management, skills, cooperation and efficiency of the general construction contractor to supervise, direct, control and manage the work so as to deliver the completed project in conformance with the contract documents and within the scheduled time.

5.2.2 The contractor for general construction shall include in his/her bid an amount
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sufficient to cover his/her cost of furnishing necessary administrative and supervisory forces to coordinate his/her own work and that of his/her sub-contractors and other primary contractors.

5.3 LAYOUT, DIMENSIONAL CONTROL AND VERIFICATION, SURVEYOR'S CERTIFICATION

5.3.1 The general construction contractor shall be responsible for locating and laying out the building of all of its parts of the site in strict accordance with the drawings and shall accurately establish and maintain dimensional control. He/she shall employ and pay for the services of a competent and licensed New Jersey engineer or land surveyor hereinafter Contractor's Engineer or Surveyor who shall be approved by the University to perform all layout work and to test the levels of excavations, footing base plates, columns, walls and floors and roof lines and furnish to the University's project manager as the work progresses certificates that each of such levels as is required by the drawings is met. The plumb lines of walls, etc. shall be tested and certified by the surveyor as the work progresses.

5.3.2 The Contractor's engineer or surveyor, in his/her layout work both on the site and within the building shall establish all points, lines, elevations, grades and bench marks for proper control and execution of the work. He/she shall establish a single permanent benchmark as directed to which all three (3) coordinates of dimensional control shall be referred. He/she shall verify all University furnished topographical and utility survey data and all points, lines, elevations, grades and benchmarks. Should any discrepancies be found between information given on the drawings and the actual site or field conditions, the general contractor shall notify the University's project manager of such discrepancy and shall not proceed with any work affected until receipt of written instructions from the University's project manager.

5.3.3 Maintenance of Construction Access Routes: The general construction contractor shall be responsible for providing and maintaining unobstructed traffic lanes on the designed construction access routes either shown on the contract drawings or reasonably required so as to perform the work and shall provide and maintain all reasonably required safety devices. He/she shall provide the addition of materials, their grading and compaction, the removal of snow and debris so as to provide and maintain the general, serviceable condition of the access roadbed as well as pedestrian walk ways.

5.3.4 Project Sign: The general construction contractor shall erect and maintain one (1) sign at the project site as shown on the drawings and located as directed by the University's project manager. Painting shall be done by a professional sign painter with two (2) coats of exterior paint, colors, letter face and layout as shown. No other signs will be permitted at the site. Upon completion of the project and when directed by the University's project manager or the University, the general construction contractor shall remove the sign. Should there be a change in the listed officials, the contractor shall make appropriate changes to the sign at his/her expense. Sign is to be six feet by ten feet (6' x 10') to include, at a minimum, the information shown on the drawing title sheet. Additional information will be as directed by the owner.
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5.3.5 The general construction contractor, at his/her expenses, shall provide and maintain necessary temporary dustproof partitions or other necessary protection around areas of work in any existing building or in new building areas as directed by the University's project manager or the contracting officer.

5.3.6 The contractor shall supply dumpster for trash, trash chutes, all debris, clean-up and all temporary fire protection per OSHA requirements.

5.3.7 Repair of Cracks: The general contractor accepts sole responsibility for repair of uncontrolled dislodgement, cracking, delaminating and peeling of finished surfaces, such as, concrete, precast concrete, case and natural stone; until masonry, millwork, plaster, glass and applied finishes; such as, paint and special coatings; within the contract scope and the limits of specified guarantee periods regardless of the cause.

5.3.8 The general construction contractor shall be responsible for replacement of all broken glass installed by him/her or his/her sub-contractors after same has been installed no matter by whom or what caused same and shall replace all broken, scratched or otherwise damaged glass before the completion and acceptance of the work or as required pursuant to any applicable warranty. He/she shall wash all glass on both sides when directed by University’s project manager and at completion of the Project, removing all paint spots, stains, plaster, etc.

5.3.9 Nothing herein is intended to limit the right of the contractor to seek payment from the party who is responsible for the damages.

5.4 PHOTOGRAPHS

5.4.1 With each monthly application for payment the general contractor shall submit progress photographs of the building in duplicate to the University’s project manager, giving four (4) views of each area photographed as selected by the University’s project manager, taken from the same points each month.

5.4.2 The photographs shall be eight inches by ten inches (8" x 10"). Two (2) copies and color photos shall bear a caption stating the date of the exposure and the name of the project, the contractor, the Architect/Engineer and the University's project manager.

5.5 GUARANTEE

5.5.1 Neither the final certification of payment nor any provision in the contract documents nor partial or entire occupancy of the premises by the University shall constitute an acceptance of work not done in accordance with the contract documents nor shall it relieve the contractor of liability with respect to any expressed or implied warranties or responsibility for faulty materials or workmanship. The University will give notice of observed defects with reasonable promptness. The surety’s obligation shall continue beyond final acceptance to the extent that the contractor would have had such obligation.
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5.5.2 In addition to guarantees otherwise specified in other sections of the specifications, the contractor and each individual sub-contractor shall guarantee and warrant, in writing, the work to be performed and all materials to be furnished under this contract against the defects in materials or workmanship and to pay for the value of repair of any damage to other work resulting there from for a period of one (1) year from the date of Final Acceptance. All guarantees, bonds, etc. required by the specifications shall be in writing in requisite legal form and delivered to the contracting officer at the time of submission of the requisition for final payment. All sub-contractor's guarantees, bonds, etc. shall be underwritten by the contractor who shall obtain and deliver same to the contracting officer before the work shall be deemed finished and accepted.

5.5.3 The contractor shall, at his/her own expense and without cost to the University within a reasonable time after receipt of written notice thereof, make good any defects in material or workmanship which may develop during stipulated guarantee periods as well as any damage to other work caused by such defects or by their repairs. Any other defects in material or workmanship not reasonably observable or discovered during the guarantee period shall be repaired and/or replaced at the contractor's expense and such shall be completed within a reasonable time after written notice is given to the contractor.

5.5.4 It is anticipated that certain permanent equipment will have to be activated during construction of the project to support construction operations. This would particularly be the case with respect to service elevators and those portions of the permanent heating system, which might be required to provide temporary heat for interior, finish operations. Regardless of when equipment is activated for use during construction, all equipment warranties must extend for the time periods required in these specifications starting as of the date of Final Acceptance, of the project by the University. The contractor shall include in his/her base bid all costs necessary to provide extended warranties as necessary for any equipment, which may be activated prior to final building acceptance by the University.

5.6 INSPECTION OF ROADWAY SUB-GRADES

5.6.1 Where applicable, the general construction contractor shall notify the University's project manager forty-eight (48) hours prior to anticipated completion of all roadway sub-grade work. The University's project manager may request an inspection by an appropriate agency to insure that the sub-grade meets the compaction standards. All sub-grades shall be proof-rolled for such inspection. If compaction soil tests are required, these tests will be done by soils testing laboratories through the contractor unless contrary provisions are made elsewhere in the specifications. The contractor shall not proceed with base course until the results of the compaction tests are determined and upgrade approved by the University's project manager.

5.7 WATCHMAN SERVICES

5.7.1 The general construction contractor shall provide watchman services to adequately protect the work, stored materials and temporary structures located on the premises
and to prevent unauthorized persons from entering upon the construction site. The University or the University’s project manager may require the general construction contractor to increase the watchman services in terms of hours or number of watchman, at no cost to the University, in the event that the University and/or University’s project manager determine that the watchman services are not sufficient.

ARTICLE 6 - TEMPORARY FACILITIES, UTILITIES AND SERVICES

Whenever the term "general construction contractor" is used herein, it is intended to mean either the contractor for general construction whenever separate prime contracts are involved or the sole contractor if there are no other prime contracts engaged on the project.

6.1 FIELD OFFICES

6.1.1 The contractor will provide on-site and maintain during the project construction a suitable weather-tight insulated field office conveniently located for reception and continuous use and shall maintain therein a complete set of contract documents including plans, specifications, CPM schedules, change orders, logs and other details and correspondence. The field office shall contain approved and safe heating facilities and lighting, convenience outlets, fire extinguisher, a minimum of two (2) operating windows CIF 15 S.F. each, outside door, handle, hasp and padlock.

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6.1.4 The contractor shall provide his/her own telephones. The general construction contractor shall provide a coin operated pay telephone for use by all workers on the construction site.

6.2 STORAGE SHEDS, TOOL SHEDS, SHOPS AND EMPLOYEESHEDS

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6.3 STORAGE AREAS, EMPLOYEE VEHICULAR PARKING, EQUIPMENT MARSHALLING AREAS, EXCAVATION BORROW/SPOILS DESIGNATED AREAS, COMMERCIAL CANTEEN AREA, ETC.

6.3.1 The contractor shall be responsible for providing his/her own requirements. He/she shall locate these areas to suit project requirements as indicated in the contract documents with the University’s project manager’s concurrence.

6.4 TEMPORARY TOILET FACILITIES

6.4.1 The contractor shall provide and pay for suitable temporary toilets at an approved location approved by the University’s project manager on the site prior to the start of any fieldwork. They shall comply with all Federal, State and local laws. The contractor will be responsible for maintenance, removal and relocation as described hereinafter.
6.4.10 Workmen are not to use the finish bathroom and toilet facilities in the project buildings. Reasonable steps must be taken by the general construction contractor to enforce this rule.

6.5 TEMPORARY DRIVES AND WALKS

6.5.1 The general construction contractor shall be responsible for keeping all roadways, drives and parking areas within or proximate to the site free and clear of debris, gravel, mud or any other site materials by insuring that all measures reasonably necessary are taken to prevent such materials from being deposited on such surfaces including, as may be appropriate, the cleaning of vehicle wheels, etc. prior to their leaving the construction site. Should such surface require cleaning, the general construction contractor will clean these surfaces without additional cost to the University. The general construction contractor will be held accountable for any citations, fines or penalties imposed on the University for failing to comply with local rules and regulations.

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6.5.3 The general construction contractor shall obtain permission, in writing, from the University's project manager before using any existing driveways or parking areas not specifically designated for such use in the contract documents for construction purposes. He/she shall maintain such driveways and areas in good condition during the construction period and, at completion of the project, shall repair or replace said driveway or areas in a manner acceptable to the University. Conditions before use should be carefully photographed or documented by the contractor and a copy provided to the University prior to the commencement of work.

6.6 TEMPORARY WATER

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6.6.2 It is the obligation of the contractor requiring temporary facilities to investigate and make specific arrangements with the University through the University's project manager for such facilities and to include in his/her proposal the cost of any facilities he/she may require for proper conduct of his/her work.

6.6.3 The contractor shall install his/her temporary and/or permanent water lines to the boiler room and heating equipment in sufficient time to be available for supplying water for testing and operation on the heating system when needed to supply heat on the project.

6.6.4 The contractor is responsible to protect all water lines from damage or freezing be they permanent or temporary. Should water connections be made to an existing line, the contractor shall provide a positive shut-off valve at his/her cost and expense.

6.6.5 If the contractor fails to carry out his/her responsibility in supplying the water as set forth herein, he/she shall be held responsible for such failure and the University's project manager shall have the right to take such action as he/she deems proper for the protection and conduct of the work and may deduct the cost involved in so doing from any sums due to the contractor.

6.7 TEMPORARY LIGHT AND POWER

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6.7.4 If applicable and necessary, the contractor shall provide all electrical service for operation of elevator equipment during construction as well as for permanent installation.

6.7.5 The contractor shall pay for the cost of all electric energy used on distribution lines installed until the project is accepted by the University.

6.7.6 The contractor shall provide and pay for all maintenance, servicing, operating and supervision of the service and distribution facilities. He/she shall also connect, maintain and service any electrical equipment which may be necessary for maintaining heat whenever heat is required in the building whether from the temporary or permanent system.

6.7.7 The contractor failing to carry out his/her responsibility in supplying uninterrupted light and power or other utility as set forth in the construction documents shall be held responsible for such failure and the University's project manager shall have the right to take such action as he/she deems proper for the protection and conduct of the work and shall deduct the costs involved from the amount due the contractor at fault.

6.7.8 There shall be no additional cost to the University because of stand-by requirements

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due to conflict in the normal working hours of trades. Where overtime work by the contractor necessitates stand-by electricians or other trades, the contractor shall be responsible for making appropriate arrangements, financial and otherwise, for such service at no cost to the University.

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6.9 TEMPORARY HEAT

6.9.1 Maintenance and safe operation of the temporary heating system and equipment shall be the responsibility of the Contractor. Any liability arising out of damage or injury resulting from the use or operation of heating equipment by the Contractor, subcontractors, equipment and material suppliers, consultants, agents of any of them and anyone employed either directly or indirectly by any of them or anyone for whose acts they may be liable shall be the sole responsibility of the Contractor.

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6.9.9 On the (60th) calendar day after the building, buildings or major unit thereof is/are permanently enclosed & the contracting officer has determined that heat is required for the proper execution of the construction work, the contractor shall continue to provide heat. A building or major unit thereof shall be considered "permanently enclosed" when (a) the exterior & enclosure work including walls, windows, glazing, louvers and doors have been permanently installed; (b) a permanent building roof has been completed & satisfactorily tested; (c) the permanent building roof drain system has been completed and made operational; (d) all building openings have been closed such that the building is weather tight. Regardless of whether the boiler room is within the confines of the major unit or not, it must be enclosed & the floor installed at least sixty (60) calendar days prior to the time when the contractor becomes responsible to supply heat.

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6.9.11 Deleted

6.9.12 The University reserves the right to permit the substitution of limited, temporary enclosures in lieu of permanent construction for the attainment of a permanently tight building if such action is deemed to be in the best interest of the project by the University's project manager. This action will not be such as to create a future jeopardy to the environmental integrity of the building as construction proceeds.

6.9.13 When the permanent heating system is the source of the heat, the contractor shall be responsible for paying all water, electricity and fuel required for the operation of the permanent heating system until beneficial occupancy acceptance of the project by the University except for the cost of fuel during the test period as previously provided. The contractor shall install adequate controls and shall arrange, at his/her own cost, for making such temporary connection as required for the operation of the heating system. Should the heating system be designed for the tie-in to existing steam lines for source of heat, the University will provide steam for temporary heat through the project permanent heating system at no cost to the contractor after tie-in is completed.

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6.9.15 Valves, traps and other parts of the heating system, except air filters, which are permanently installed by the contractor and used for supplying heat during the construction period, need not be replaced, provided that the system was in acceptable condition prior to its use and was properly maintained. The system shall be properly cleaned and adjusted to operate after the permanent system is in use. Seven (7) days prior to acceptance by the University of the heating system as substantially complete, the contractor shall replace disposable filters with clean filters of the type specified or turn over spare sets of filters to the University as directed by the Construction Manager.

6.9.16 If plastering, parging or finishing of any surface is necessary to enable the contractor to install the heating system in a manner as to permit its use for supplying heat during the construction period, the plastering, parging and finishing of such surfaces shall be done by the contractor so as not to delay the installation of the permanent system. In the event this plastering, parging or other finishing work is not completed in ample time to make possible the installation of permanent piping and heating units, the contractor shall install temporary/primary heating units. The cost of such temporary installation and its removal shall be paid by the contractor.

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6.9.18 If additional heat is required beyond that specified in the contract documents, the contractor should arrange and pay the additional costs thereof at no expense to the University.

6.9.19 The Contractor shall provide a cost to supply heat in accordance with all requirements of this Section and Division 1; General Requirements, Section 01500.
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of the Specifications.

6.10 TEMPORARY ENCLOSURES

6.10.1 Whenever necessary in order to maintain proper temperatures for the prosecution of the work or for the protection thereof, the contractor shall furnish and maintain temporary enclosures for all openings in exterior walls which are not enclosed with finishing materials. Temporary wood doors shall be provided at door openings.

6.11 TEMPORARY CONSTRUCTION FENCE AND SIGNAGE

6.11.1 As required by the University's project manager, the contractor shall provide and maintain an eight foot (8') high temporary chain link fence with necessary posts and top rails to enclose the area at the job site and to guard and close effectively the designated area. The contractor shall be responsible for posting appropriate signage restricting access and shall further be responsible for controlling access to the job site. The contractor shall provide gates at locations where required for access to the enclosed area. Gates shall be of chain link material, cross-braced, hung on heavy strap hinges and shall have suitable hasps and padlocks.

6.11.2 The contractor shall remove the fence upon completion of the work or at such time before final completion as directed by the University.

6.12 EDGE PROTECTION

6.12.1 The contractor shall be responsible for proper protection for all floor, roof and stair penetrations.

ARTICLE 7 - SUB-CONTRACTORS

7.1 CONTRACTOR/SUB-CONTRACTOR RELATIONSHIP

7.1.1 As provided in other sections of the Contract Documents after award of the contract, the contractor shall notify the contracting officer through the University's project manager in writing of the names of sub-contractors, other than those required to be listed in the bid, proposed to perform the principal parts of the work and of such others as the contracting officer may direct and shall not employ any sub-contractor without prior, written approval of the contracting officer or any that the contracting officer may, within a reasonable time, reject. Failure of the contracting officer to reply within fifteen (15) days upon receipt of such names shall constitute notice of approval.

7.1.2 If the contracting officer has a reasonable objection to any such proposed person or firm, the contractor shall substitute another sub-contractor to which the contracting officer has no reasonable objection. Under no circumstances shall the University be obligated for additional cost due to such substitution.

7.1.3 The contractor shall make no substitution for any sub-contractor, person or firm previously selected and approved without written notification to the contracting officer.
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and receipt of his/her written approval for such substitution.

7.1.4 The contractor acknowledges his/her full responsibility to the University for all acts and omissions of his/her sub-contractors and of persons and firms either directly or indirectly employed by them equally to the extent that he/she is responsible for the acts and omissions of persons and firms directly or indirectly employed by him/her and the contractor acknowledges he/she remains fully responsible for the proper performance of his/her contract irrespective of whether work is performed by his/her own forces or sub-contractors engaged by him/her.

7.1.5 Nothing contained in the contract documents shall create any contractual relationship between any sub-contractor and the University.

7.1.6 By an appropriate written agreement the contractor shall require each sub-contractor, to the extent of the work performed by the sub-contractor, be bound to the contractor by the terms of the contract documents and to assume toward the contractor all the obligations and responsibilities which the contractor, by these documents, assumes toward the University, the contracting officer, the University's project manager and the Architect/Engineer. The contractor shall require each sub-contractor to enter into similar agreement with his/her sub-sub-contractors.

7.1.7 The contractor and all sub-contractors agree that, in the employment of both skilled and unskilled labor, preference shall be given to residents of the State of New Jersey if such labor force is available.

7.1.8 Approval by the contracting officer, the University's project manager or Architect/Engineer of a sub-contractor or material supplier shall not relieve the contractor, the sub-contractor or material supplier of the responsibility of complying with all provisions of the contract documents. The approval of a sub-contractor does not imply approval of any material, equipment or supplies.

7.1.9 The contractor shall coordinate and supervise the work performed by sub-contractors to the end that the work is carried out without conflict between trades and so that no delay to the general progress of the work occurs. The contractor and all sub-contractors shall afford each trade, any separate contractor or the owner every reasonable opportunity for the installation of work and the storage of materials at all times.

7.1.10 The contractor shall require each sub-contractor to the extent of the work to be performed by the sub-contractor to be bound to the contractor to the terms of the University contract documents and to assume toward the contractor all the obligations and responsibilities which the contractor assumes by the documents to the University and its contractual parties.

7.1.11 The contractor shall not grant to any sub-contractor terms more favorable than those extended to the contractor by the University.

7.1.12 The contractor shall not permit his/her sub-contractor to perform sub-contract work
without the express written approval of the contracting officer through the University's project manager.

7.1.13 The contractor shall be required in all sub-contracts that the sub-contractor establish, maintain and make available to the University all records as defined and delineated herein related to all work performed under the subcontracts including work performed by a sub-contractor.

ARTICLE 8 - RELATIONSHIP BETWEEN UNIVERSITY/CONTRACTOR

8.1 UNIVERSITY'S RIGHT TO PERFORM WORK

8.1.1 The University may and reserves the right to enter upon the premises at any and all times during the progress of the work or cause others to do so for the purpose of installing any apparatus or carrying on any construction not included in these specifications or for any other reasonable purpose.

8.1.2 The contractor shall examine all work or materials installed by other contractors and/or sub-contractors, the installation of which may affect the work in his/her contract, and should the same be imperfect, incorrect or insecure, he/she shall notify the contracting officer immediately in order that same be rectified. The contracting officer shall be responsible for instructing the contractor as to what corrective action is required of the contractor.

8.2 MUTUAL RESPONSIBILITY

8.2.1 The contractor shall afford the University, the University's project manager and all sub-contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work. The contractor shall coordinate all work with adjacent work with all trades so that no portion of the work is delayed or not properly undertaken due to lack or failure of cooperation.

8.2.2 The contractor shall lay out and install his/her work at such time or times and in such manner as to be in compliance with the project schedule and so as to facilitate the general progress of the project.

8.2.3 Before completion of the work contemplated herein, should it be deemed necessary by the University to do any work whatsoever in or about the building or structure other than as provided for in the contract documents, the contractor shall fully cooperate with such other individual or firm as the University may employ to do such work so that such additional work may be performed without unreasonable interference. The contractor shall afford said other individual or firm all reasonable facilities for doing such work. The Contractor may not seek an extension of the Contract time as a result of such work. However, Contractor is not entitled to any additional compensation nor shall be entitled to maintain a claim for additional costs or damages as a result of such work.
8.2.4 The contracting officer or his/her University's project manager, and Architect/Engineer shall have access to the work at all times whether it is in preparation or in progress and the contractor shall provide proper facilities for such access and for inspection. The contracting officer reserves the right at his/her option to employ the services of a professional consultant to evaluate any phase of the work he/she may deem to be in the best interest of the University but no evaluation performed shall in any way relieve the contractor of his/her responsibilities under the contract. The consultant's work product shall be confidential and shall not be disclosed to the contractor. The contractor shall cooperate with the consultant(s) and provide access to the work and facilities for inspection. Should any portion of the work or material be found deficient or defective, the contractor will pay the applicable fees of such consultant and be responsible for replacing the deficient or defective work as required by the provisions stated elsewhere herein. In the event that contractor is required to pay the applicable consultant fees, the contractor shall be entitled to a copy of the result of the consultant's investigation.

8.2.5 Any costs caused by defective or ill-timed work shall be borne by the party responsible therefore.

8.2.6 If the contractor should destroy, damage or disturb the work of any other contractor in or about the building or premises, the contractor shall immediately either replace the destroyed work and make good the damaged or disturbed work to the satisfaction of the University's project manager and the contracting officer or shall reimburse the contractor whose work he/she has destroyed, damaged or disturbed for the expense of replacing such work.

8.2.7 Should a contractor sustain any damage through any act or omission of any other contractor having a contract with the University or through any act or omission of the Architect/Engineer, the contractor shall have no claims against the University for such damage but shall have a right of action to recover such damages from the causing party or parties in accordance with 8.4.2 which is included in the contract with all other such contractors and the Architect/Engineer.

8.3 SUBSTANTIAL COMPLETION/FINAL COMPLETION

8.3.1 At the request of the University, the University's project manager and/or the Architect/Engineer, the contractor and the University representative shall make a joint inspection of the work and, if all determine that the work is substantially completed, the University shall give notice of Substantial Completion for beneficial use. Such certification shall in no way relieve the contractor of any contractual obligation or in any way relieve the contractor from responsibility to promptly complete punch list work.

8.3.2 Use and Possession Prior to Completion: The University shall have the right to take possession of or use any complete or partially completed part of the work. Prior to such possession or use, the contracting officer shall furnish the contractor with an itemized list of work remaining to be performed or corrected on such portions of the project as are to be possessed or used by the University provided that failure to list
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any item of work shall not be deemed an acceptance of any work under the contract. While the University has such possession or use, the contractor, not withstanding the provisions of the article of this contract entitled “Permits - Laws Regulations” shall be relieved of the responsibility for the loss or damage to the work resulting from University possession or use. If such prior possession or use by the University delays the progress of the work or causes additional expense to the contractor, an equitable adjustment in the contract amount will be made and the contract shall be modified in writing accordingly. Such an equitable adjustment of cost shall be the sole relief available to the contractor.

8.4 CONTRACTOR’S CLAIMS FOR DAMAGES

8.4.1 Any claims made by the contractor against the University for damages or extra costs are governed by and subject to the New Jersey Contractual Liability Act, N.J.S.A. 59:13-1 et.seq. as well as all the provisions in this contract.

8.4.2 Should any contractor, or Architect/Engineer having or who shall hereafter have a contract with the University, by his/her own acts, errors or omissions, damage or unnecessarily delay the work of the owner or other contractors by not properly cooperating with them or by not affording them reasonably sufficient opportunity or facility to perform work as may be specified by reason of which act, error or omission of said contractor, the University’s project manager, the Architect/Engineer or any other contractor shall sustain damages including delay damages during the progress of work hereunder, then and in that event, the culpable party agrees to pay all costs and expenses incurred by the damaged contractor(s), the Architect/Engineer due to any such delays and/or damages whether by settlement, compromise mediation or arbitration and the injured contractor, Architect/Engineer shall have a right to redress enforcement in court directly against the culpable party. In addition, the culpable party further agrees to defend, indemnify and save harmless the University from all such claims and damages. Nothing contained in this paragraph shall be construed to relieve the culpable contractor, Architect/Engineer from any liability or damage sustained on account of such acts, errors or omissions.

8.4.3 The University shall not be liable to any contractor for any damages or extra costs caused by any acts or omissions of any person or entity except the University (as specified in this paragraph) and the contractor’s exclusive remedy shall be against the culpable party and not the University.

8.5 CONTRACTING OFFICER’S RIGHT TO ACCELERATE

8.5.1 The contracting officer may order and direct the contractor responsible for delay as described in 8.2.2 or, as may be apparent as a result of his/her observation of the work, to accelerate that contractor’s work at any particular place or places by increasing his/her forces, working overtime and/or on Saturdays, Sundays and holidays as may be required to enable others to carry on with their work in accordance with the project progress schedule. The cost of such acceleration efforts shall be borne entirely by the contractor and shall not be billed to the University.
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8.6 TIME OF COMPLETION - DELAY - LIQUIDATED DAMAGES  

8.6.1 In the event of the failure of the contractor to complete the said work within the time stated in the Bid Documents the contractor shall be liable to the University in the sum amount specified in Advertisement for Bids AND/OR the project manual front end per day for each and every calendar day that the said work shall be and remains uncompleted which sum shall be treated as liquidated damages, and not a penalty, for the loss to the University of the use of premises in a completed state of construction, alteration or repair, as the case may be, and for added administrative and inspection costs to the University on account of the delay provided, however, that the liquidated damages provided for herein shall be in addition to other consequential losses or damages that the University may incur by reason of such delay such as, but not limited to, added costs of the project and the cost of furnishing temporary services, if any. The University, from any monies due or to become due to the contractor, may deduct any such items for which the contractor is liable.  

8.6.2 The contractor agrees that said work should be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed by and between the contractor and the University that the time for the completion of the work herein is a reasonable time for the completion of work of same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality. If the contractor shall neglect, fail or refuse to complete the work within the time herein specified then the contractor does hereby agree, as a part consideration for the awarding this contract, to pay the University the amount referred to in paragraph 8.6.1. Liquidated damages but not as a penalty.  

8.6.3 The said amount is fixed and agreed upon by and between the contractor and the University because of the impracticality and the extreme difficulty of fixing and ascertaining of the actual damages the University would sustain in such event and said amount is agreed to be the amount of damages which the University would sustain.  

8.6.4 It is further agreed that time is of the essence of each and every portion of this contract and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever.  

8.6.5 The contractor's reasons for the time extension are listed below. Also the contractor shall not be charged with liquidated damages when the delay in the completion of the work is due to the following:  

a) to any preference, priority or allocation order duly issued by the government  
b) to unforeseeable cause beyond the control and without the fault or negligence of the contractor restricted to, acts of God except inclement weather or of the public enemy, fires, floods, epidemics, quarantine restrictions, freight embargoes; and  
c) to any delays of sub-contractors or suppliers occasioned by any of the causes specified in sub-sections (a) and (b) of this paragraph.
8.6.6 Delete

8.6.7 Payment of liquidated damages will not release Contractor from liability for damages sustained by other contractors as set forth in Section 8.4 hereto.

8.6.8 The University shall have the right to defer the beginning or to suspend the whole or any part of the work herein contracted to be done whenever, in the opinion of the contracting officer, it may be necessary or expedient for the University to do so.

8.6.9 The contractor shall not be entitled to any damages or extra compensation from the University on account of any work performed by the University, any other contractor, the Architect/Engineer, any other party or by reason of any delays whatsoever whether caused by the University or any other party including, but not limited to, the delays mentioned in this contract.

8.7 TIME OF COMPLETION – DELAY – OTHER COSTS

8.7.1 In the event of the failure of the contractor to complete the said work within the time stated in the Bid Documents the contractor shall be liable to the University for all professional fees (i.e. Architect and any other consultants) and associated costs incurred by Rowan during the delay/extended construction duration. All additional professional fees will be deducted from the contractor’s contract value via a credit change order. Professional fees and associated expenses are non-negotiable.

8.7.2 Other costs incurred by Rowan as a result of the contractor’s failure to complete the said work within the time stated in the Bid Documents are not independent of any liquidated damages outlined within section 8.6 herein.

8.8 INDEMNIFICATION

8.8.1 The contractor shall assume all risk of and responsibility for and agrees to indemnify, defend and save harmless the University, the University’s project manager and the Architect/Engineer, their employees, servants and agents, from and against any and all claims, demands, suits, actions, recoveries, judgments and costs and expenses in connection therewith on account of the loss of life, property, injury or damage to the person, body or property of any person or persons whatsoever resulting from the performance of the project or through the negligence of the contractor or any of his/her sub- contractors or through any improper or defective machinery, implements or appliances used by the contractor or his/her sub-contractors in the project or through any act or omission on the part of the contractor of his/her sub-contracts or his/her agents, employees or servants which shall arise from or result directly or indirectly from the work and/or materials supplied under this contract. This indemnification obligation is not limited by but is in addition to the insurance obligations contained in this agreement.

8.8.2 In any and all claims against the University, the Architect/Engineer or any of their agents or employees by any employees of the contractor, any sub-contractor, anyone
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directly or indirectly employed by any of them or anyone for whose acts any of them 
may be liable, the indemnification obligation under this Article shall not be limited in 
any way as to the amount or type of damages, compensation or benefits payable by 
or for the contractor or any sub-contractor under worker's or workman's 
compensation acts, disability benefit acts or other employee benefit acts.

8.9 COMMENCEMENT OF WORK

8.9.1 The contract time shall commence on the date of receipt by the contractor of a written 
notice to proceed and/or University purchase order and/or fully executed University 
contract issued by the contracting officer. The above document(s) shall be promptly 
issued by the University. The contractor agrees that contract work shall commence 
no later than ten (10) calendar days after receipt of at least one of the documents 
listed above in this Section 8.9.1.

8.9.2 Provided the contract is not terminated pursuant to the paragraph contained within 
the Instructions to Bidders entitled "Contracts and Bonds", if, in the opinion of the 
contracting officer, the contractor's delay in furnishing financial responsibility and 
performance or payment bonds causes a delay in the issuance of any of the documents listed in Section 8.9.1 above, the time to complete the work as specified 
in the contract may be reduced to reflect such delay.

8.9.3 The contractor shall perform no work under this contract until the required evidence 
of financial responsibility, insurance and bonds has been furnished. Thereafter, work 
at other than the contract site may be undertaken. The contractor shall perform no 
work at the contract site except pursuant to a fully executed contract and/or purchase 
order.

8.9.4 The notice to proceed, contract and/or purchase order may be issued by the 
University at its convenience. The Contractor shall not be entitled to any additional 
compensation caused by any delay in issuing the issuance of the above mentioned 
documents. The Contractor's sole remedy shall be an extension of the scheduled 
final completion date in an amount equal to the length of the delay in issuing the 
contract, purchase order and/or Notice to Proceed.

ARTICLE 9 - CONSTRUCTION PROGRESS

9.1 Deleted

9.1.1 Deleted

9.2 CONSTRUCTION PROGRESS SCHEDULE

9.2.1 This Project shall be completed within the specified number of calendar days from 
the earlier of the date of the Notice to Proceed, the Purchase Order and/or the 
Contract.

9.2.2 The project shall be monitored by detailed scheduling system. This system shall be
the basis for the evaluation of all contractors’ performance.

a) The contractor, upon its completion of a project schedule as defined in this section, agrees that the project network schedule is the designated plan for completion of all work in the allotted time and the contractor will assume full responsibility for the prosecution of the work shown. The University shall indicate formal acceptance of the contractors schedule by signing the finalized schedule.

b) The contractor shall furnish sufficient labor, materials and equipment to insure the prosecution of the work in accordance with the approved schedule. If, in the opinion of the contracting officer and/or the University project manager, the contractor falls behind the approved schedule, the contractor shall take such steps as may be necessary to improve his/her progress and the contracting officer may require him/her to increase the number of shifts, days of work and/or the amount of materials and equipment, all without additional cost to the University and as provided in section 8.5.1.

9.2.3 Initial Submittal: The initial schedule, which is submitted to the University by the contractor, shall show a coordinated plan for work for the contractor thereby providing a common basis of acceptance, understanding and communication.

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9.2.5 The schedule shall accurately reflect the manner in which the contractor intends to proceed with the project and shall incorporate the impact of all delays and change orders as soon as these factors can be defined. All changes made to the schedule shall be subject to approval by the University. If the contractor desires to revise the logic of the approved schedule so as to reflect a sequence of construction, which differed from that, originally agreed to, he/she must first obtain the approval of the University. If this change extends the completion date of the project or delays the work of other trades, the contractor agrees that these impacts and all associated costs will be considered a claim to be assessed against the contractor and will not be the basis for a project time extension.

9.2.6 Payments to the Contractor:

a) The submission of the computer produced calendar dated schedule shall be an integral part and basic element of the estimate upon which progress payments shall be made pursuant to the provisions of Article 10. The contractor shall be entitled to progress payments only upon receipt by the University of an updated computer produced calendar dated scheduled as outlined in the contract documents.

b) Wherever required by the University's project manager, the contractor shall provide sufficient documentation to confirm reported progress for any costed items appearing in the scheduling and requisition system; i.e., bills of lading for delivered materials and equipment, etc.

c) Payment to the contractor shall be dependent upon the contractor furnishing all of the information and data which, in the judgment of the University, is necessary to ascertain actual progress and all the information and data necessary to
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prepare any necessary revision to the computer produced calendar dated schedule and the network arrow diagram. The University's determination that the contractor has failed or refused to furnish the required information and data shall constitute a basis for withholding payment until the required information and data is furnished and the schedule and/or diagram is prepared or revised on the basis of such information and data.

9.2.7 Deleted

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9.2.9 The contractor acknowledges and agrees that the evaluation of project delay will be based upon the project schedule and the following criteria:

a) float time shown on the schedule is not for the exclusive use of either the contractor or the University. It is agreed that float time is available for use by all parties to facilitate the effective use of available resources and to minimize the impact of problems or change orders which may arise during construction. The contractor specifically agrees that the University or its representatives or consultants in conjunction with their review activities or to resolve project problems may use float time. The contractor agrees that there will be no basis for a project time extension as a result of any project problem, change order or delay which only results in the loss of available positive float on the project schedule. The contractor further agrees that there will be no basis for a claim for cost escalation for any activity which is completed on or before its initially required late end date as shown on the initially approved schedule regardless of the justification or any delaying factors which might have results in elimination of float which was originally available for the activity. If the contractor refuses to perform work which is available to them, the University's project manager or contracting officer may, regardless of the float shown to be available for the work, consider the contractor to be in violation of the contract documents. In such instances, the contracting officer may, without prejudice to any right or remedy and after giving the contractor and his/her surety three (3) working days written notice to forthwith commence and continue with the work with diligence and promptness, terminate the employment of the contractor by the issuance of a written notice to that effect to the contractor and his/her surety at any time subsequent to three (3) working days thereafter should they or either of them fail to comply with the directive of the original three (3) day notice mentioned above.

9.2.10 The final coordinated schedule shall be signed and dated by all Contractors and shall become part of the Contract Documents.

9.3 Each Contractor agrees that they will make no claim for, and have no right to, additional payment or extension of time for completion of the Work, or any other concession because of any misinterpretation or misunderstanding on its part of the Project Schedule, its failure to attend the pre- bid conference, or because of any failure on its part to fully acquaint itself with all conditions relating to the Project Schedule and the manner in which it will be used on the project or because of any other Contractor's failure to participate
ARTICLE 10 - PAYMENTS

10.1 THE UNIVERSITY SHALL PAY THE CONTRACTOR THE CONTRACT PRICE AS HEREINAFTER PROVIDED

10.1.1 The University will make progress payments monthly as the work proceeds or at more frequent intervals as determined by the contracting officer on estimates approved by the contracting officer. Unless otherwise directed, the contractor shall furnish to the University's project manager within two (2) weeks after a notice to proceed is issued to the contractor, a schedule of values for contract payments regarding labor and material breakdown of the total contract price showing the amount included therein for each principal category of the work in such detail as requested by the University. This schedule of values shall provide the basis for determining progress payments. The schedule, as approved, shall be used only as a basis for the contractor's estimates for progress payments and approval by the contracting officer does not constitute acceptance of the allocability of costs to a specific element of work. The contractor is cautioned that no payment requests shall be approved until the contracting officer or his/her University's project manager has approved the schedule of values in writing. The contractor shall use the attachment to the G702 application for payment form.

10.1.2 LEFT BLANK

10.1.3 All material and work covered by progress payments made shall thereupon become the sole property of the University but this provision shall not be construed as relieving the contractor from the sole responsibility for the care and protection of all materials and work upon which payments have been made or the restoration of any damaged work or as waiving the right of the University to require the fulfillment of all of the terms and conditions of the contract.

10.1.4 If performance or payment bonds are required under this contract, the University shall pay the total premiums paid by the contractor to obtain the bonds to the contractor. This payment shall be paid at one time to the contractor together with the first progress payment unless otherwise due after the contractor has (1) furnish the bonds, including co-insurance and reinsurance agreements when applicable, (2) furnished evidence satisfactory to the University (such evidence being in the form of a receipt from the bonding company) of full payment to the surety company and (3) submitted a request for such payment. The payment by the University of the bond premiums to the contractor shall not be made as increments of the individual progress payments and shall be in addition to the contract price.

10.1.5 In addition to other warranties required by provisions of the contract and specifications, the contractor warrants that title to all work, materials and equipment covered by an application for payment will pass to the University, either upon incorporation into the construction or upon receipt of payment by the contractor, whichever occurs first, free and clear of all liens, claims, security interests and
encumbrances. This provision shall not be construed as relieving the contractor from sole responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damaged work or as a waiver by the University of its rights to require fulfillment of all terms of the contract.

10.1.6 Recommendation for approval of a requisition for payment will constitute a representation by the University's project manager and/or the Architect/Engineer to the contracting officer based on his/her inspections at the site and data contained in the requisition for payment that the work has progressed to the point indicated, that, to the best of his/her knowledge, information and belief, the quality of the work is in accordance with the contract documents and that the contractor is entitled to payment in the amount certified. By recommending approval of a requisition for payment, however, the University's project manager and/or Architect/Engineer shall not thereby be deemed to represent that he/she has made exhaustive or continuous on-site inspections to check the quality or quantity of the work or that he/she has reviewed the construction means, methods, techniques, sequences or procedures or that he/she has made any examination to ascertain how and for what purpose the contractor has used the monies previously paid on account of the contract sum.

10.1.7 If any corporation licensed to do business in New Jersey shall be or become delinquent in the payment of taxes due the State, unless under an active appeal process, the contracting officer may withhold monies due to the said corporation for the purpose of assuring the payment to the State of such taxes.

10.2 INVOICES

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10.2.2 LEFT BLANK

10.2.3 LEFT BLANK

10.2.4 For the purpose of determining if interest begins to accrues under the State's Prompt Payment Act:

a) a proper invoice will be deemed to have been received when it is received in the proper form and with all required attachments by the office designated for receipt of invoices and acceptance of the supplies delivered or services rendered has occurred

b) payment shall be considered made on the date on which a check for such payment is dated

c) payment terms; i.e., "net 20"; offered by the contractor will not be deemed a "required payment date"

d) the following period of time will not be included:

1) after receipt of an improper invoice and prior to notice of any defect or impropriety but not to exceed sixty (60) calendar days

2) between the date of a notice of any defect or impropriety and the date a proper invoice is received; when the notice is in writing, it shall be considered
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made on the date shown on the notice

10.3 INTEREST

10.3.1 Interest shall be paid on the amount due to the contractor pursuant to a properly executed State invoice in reference to general condition 10.2 if the required payment is not made on or before the required payment date.

10.3.2 The required payment date shall be sixty (60) calendar days from the receipt of a properly completed and executed invoice.

10.3.3 Interest on amounts due shall be paid to the contractor for the period beginning on the day after the required payment date and ending on the date on which the check for payment is drawn. The interest shall be paid at a rate, which is specified by State Treasurer pursuant to "New Jersey Prompt Payment Act".

10.3.4 No interest charge as required by this provision shall become a debt of the State until it exceeds five dollars ($5.00).

10.3.5 Interest may be paid by separate payment to the contractor but shall be paid within thirty (30) calendar days of payment of the original invoice.

10.3.6 The State Treasurer shall have the right to waive the interest payment for delinquencies due to circumstances beyond the control of the contracting officer or other State or University representatives involved in the processing of contractor invoices including, but not limited to, strikes and natural disasters.

10.3.7 Nothing in this provision nor the New Jersey Prompt Payment Act shall be construed as permitting the accrual of prejudgment interest in the case of a disputed contract for which a notice of claim has been filed pursuant to N.J.S.A. 59:13-3 et.seq. as provided in N.J.S.A. 59:13-8.

10.4 WITHHOLDING PAYMENT FOR NON-DELIVERY OF DATA:

(a) If technical data, such as "as built" drawings, reports, spare parts lists, repair parts lists or the like or instruction books including operational and maintenance manuals or any part thereof are not delivered within the time specified by this contract or are deficient upon delivery, the contracting officer shall withhold from each invoice a percentage in addition to any other retainage required by the contract or the contract price in accordance with the following table:

<table>
<thead>
<tr>
<th>When Total Contract Price Is:</th>
<th>Percentage to be Withheld Is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $250,000</td>
<td>10%</td>
</tr>
<tr>
<td>$250,000 to $1,000,000</td>
<td>5%</td>
</tr>
<tr>
<td>Over $1,000,000</td>
<td>2%</td>
</tr>
</tbody>
</table>

(b) The withholding of any sums pursuant to this section shall not be construed as or constitute in any manner a waiver by the University of the contractor's
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obligation to furnish the data required under this contract. In the event the contractor fails to furnish these items, the University shall have those rights and remedies provided by law and pursuant to this contract in addition to and not in lieu of the sums withheld in accordance with this section.

10.5 FINAL PAYMENT
10.5.1 LEFT BLANK.
10.5.2 LEFT BLANK
10.5.3 LEFT BLANK

ARTICLE 11 - UNCOVERING AND INSPECTION OF WORK

11.1 UNCOVERING AND INSPECTION OF WORK
11.1.1 If any portion of the work is covered prior to inspection conducted by the contracting officer or the University’s project manager or Architect/Engineer or any other person, it shall be uncovered for observation. Uncovering and replacement of covering shall be at the installation contractor’s expense. The contractor is obligated to advise the contracting officer and the University’s project manager of all work scheduled to be covered which is reasonably subject to prior inspection before actual covering.

11.2 CORRECTION OF WORK
11.2.1 The contractor shall promptly correct all work rejected by the contracting officer the University’s project manager or the Architect/Engineer as defective or as failing to conform to the contract documents whether observed before or after final acceptance and whether or not fabricated, installed or completed. The contractor shall bear all costs of correcting such rejected work including the University’s project manager's or Architect's/Engineer's additional services, if any.

11.2.2 The contractor shall remove from the site all portions of the work, which are defective, or non-conforming and which have not been corrected unless the contracting officer waives removal.

11.2.3 If the contractor does not proceed with the correction of such defective or non-conforming work within a reasonably time, fixed by written notice from the contracting officer, University’s project manager or the Architect/Engineer. The contracting officer may make arrangements for such correction by others and charge the cost of doing so to the contractor and/or his/her sureties. The contracting officer may also remove the defective or non-conforming work and may store the materials or equipment at the expense of the contractor. If the contractor does not pay for the cost of such removal and storage within ten (10) additional days written notice, the contracting officer shall sell such material and equipment at auction or at private sale and shall account for the net proceeds thereof after deducting all of the costs which are the responsibility of the contractor including compensation for the
University's project manager or Architect's/Engineer's additional services, if any. If such proceeds of sale do not cover all costs, which the contractor should have borne, the difference shall be charged to the contractor and an appropriate credit change order shall be issued. If the payments then or thereafter due the contractor are not sufficient to cover such amount, the contractor and/or his/her surety shall pay the difference to the University.

11.2.4 The contractor shall also be responsible for the cost of making good all work destroyed or damaged by such correction or removal.

11.2.5 Nothing contained herein shall be construed to establish a period of limitation with respect to any other obligation, which the contractor might have under the contract documents.

11.3 ACCEPTANCE OF DEFECTIVE OR NON-CONFORMING WORK

11.3.1 If the contracting officer determines that the best interests of the University will be served by accepting defective or non-conforming work, he/she may do so instead of requiring its removal and correction. In such instance, a change order will be issued to reflect an appropriate and equitable reduction in the contract sum. Such adjustment shall be effected regardless of final payment having been previously made and the contractor and/or his/her surety shall be responsible for promptly providing any funds due the University as a result thereof.

ARTICLE 12 - PROTECTION OF PERSONS AND PROPERTY

12.1 SAFETY PRECAUTIONS AND PROGRAMS

12.1.1 The contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. He/she shall designate a responsible member of his/her organization at the site whose duty shall be the prevention of accidents. This person shall be the contractor's superintendent unless otherwise designated by the contractor in writing to the University and the University's project manager.

12.2 SAFETY OF PERSONS AND PROPERTY

12.2.1 The contractor shall give all notices and comply with all applicable laws, ordinance, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss, including but not limited to OSHA.

12.2.2 The contractor shall take all necessary precautions for the safety of and shall provide all necessary protection to prevent damage, injury and loss to:

(a) every employee on the work and all other persons who may be affected thereby
(b) all the work and all materials and equipment to be incorporated therein whether in storage on or off the site, under the care, custody or control of
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the contractor or any of his/her sub-contractors or sub-sub-contractors.

(c) other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designed for removal, relocation or replacement in the course of construction.

12.2.3 As required by existing conditions and progress of work, the contractor shall erect and maintain all necessary safeguards for safety and protection, including but not limited to rails, night lights, the posting of danger signs and other warnings against hazards, promulgating safety regulations, notifying owners and users of adjacent utilities and other means of protection against accidental injury or damage to persons and property.

12.2.4 When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the work, the contractor shall exercise the utmost care and shall only carry on such activities under the supervision of properly qualified personnel.

12.2.5 The contractor shall not load or permit any part of the work to be loaded so as to endanger the work or any person.

12.2.6 The contractor shall promptly remedy all damage or loss to any property caused in whole or in part by the contractor, any of his/her sub-contractors, sub-sub-contractors or anyone directly or indirectly employed by any of these or by anyone for whose acts any of them may be liable and for which the contractor is responsible except damage or loss attributable solely to the acts or omissions of the University, the Architect/Engineer or anyone directly or indirectly employed by either of them or by anyone of whose acts either of them may be liable and not attributable to the fault or negligence of the contractor. The foregoing obligations of the contractor are in addition to his/her obligations stated elsewhere herein.

12.2.7 The contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the property insurance company carrying insurance on the work or by the local fire chief or fire marshal and other entity with jurisdiction over the site. The area within the site limits and surrounding areas shall be kept orderly and clean and all combustible and other rubbish shall be promptly removed from the site.

12.2.8 At all times, the contractor shall protect excavations, trenches, buildings and materials from rain water, ground water, back-up or leakage of sewers, drains and other piping and from water of any other origin and shall promptly remove any accumulation of water. The contractor shall provide and operate all pumps, piping and other equipment necessary to this end.

12.2.9 The contractor shall remove snow and ice, which might result in damage or delay.

12.2.10 In the event that contractor fails to comply with the provisions of the Section 12.2, the University may withhold from each invoice a percentage in addition to any other
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retainage required by the contract or the contract price in accordance with the following table:

<table>
<thead>
<tr>
<th>When Total Contract Price Is:</th>
<th>Percentage to be Withheld Is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $250,000</td>
<td>10%</td>
</tr>
<tr>
<td>$250,000 to $1,000,000</td>
<td>5%</td>
</tr>
<tr>
<td>Over $1,000,000</td>
<td>2%</td>
</tr>
</tbody>
</table>

The withholding of any sums pursuant to this section shall not be construed as or constitute in any manner a waiver by the University of the contractor's obligation to comply with the provisions of this Section 12.2. In the event the contractor fails to comply with the provisions of this Section 12.2, the University shall have those rights and remedies provided by law and pursuant to this contract in addition to and not in lieu of the sums withheld in accordance with this section.

12.3 EMERGENCIES

12.3.1 In any emergency affecting the safety of persons or property, the contractor shall act with diligence at his/her discretion to prevent threatening injury, damage or loss. In such case, he/she shall immediately notify those individuals or entities designated at the pre-construction meeting. The Contractor shall immediately thereafter notify the contracting officer through the University's project manager of the action taken and shall forthwith prepare and submit a detailed and documented report of the occurrence and all actions taken in response thereto.

ARTICLE 13 - INSURANCE AND INDEMNITY

13.1 CONTRACTOR INSURANCE REQUIREMENTS

13.1.1 The Contractor shall secure and maintain in force for the term of the Contract, insurance coverage provided herein. All insurance coverage is subject to the approval of the University and shall be issued by an insurance company authorized to do business in the State of New Jersey and which maintains an A.M. Best rating of A- (VII) or better.

13.1.2 The Contractor shall provide the University with current Certificates of Insurance for all coverage and renewals thereof which must contain the provision that the insurance provided in the certificate shall not be canceled for any reason except after thirty (30) days written notice to the University. All insurance required herein shall contain a waiver of subrogation in favor of the University. All insurance required herein, except Workers' Compensation and Owners and Contractors Protective, shall name ROWAN University, the State of New Jersey, the architect/engineer and University's Project Manager as additional insureds.

13.1.2 Commercial General Liability insurance written on an occurrence form including independent contractor liability, products/completed operations liability, contractual liability, covering but not limited to the liability assumed under the indemnification provisions of this contract. Coverage for bodily injury and property damage claims
arising out of the professional acts of the general contractor and subcontractors shall also be included. The policy shall not include any endorsement that restricts or reduces coverage as provided by the ISO CG0001 form without the approval of the University. The minimum limits of liability shall not be less than a combined single limit of one million dollars ($1,000,000) per occurrence, two million dollars ($2,000,000) general aggregate, three million dollars ($3,000,000) product/completed operations aggregate. The Products and Completed Operations insurance shall be maintained for two (2) years after final payment. A “per project endorsement” shall be included, so that the general aggregate limit applies solely to the project that is the subject of this contract.

13.1.3 Comprehensive Automobile Liability covering owned, non-owned, and hired vehicles. The limits of liability shall not be less than a combined single limit of one million dollars ($1,000,000) per occurrence.

13.1.4 Worker's Compensation Insurance applicable to the laws of the State of New Jersey and other State or Federal jurisdiction required to protect the employees of the Contractor and any Subcontractor who will be engaged in the performance of this Contract. The certificate must so indicate that no proprietor, partner, executive officer or member is excluded. This insurance shall include Employers' Liability Protection with a limit of liability not less than one million dollars ($1,000,000) bodily injury, each occurrence, one million dollars ($1,000,000) disease, each employer, and two million dollars ($2,000,000) disease, aggregate limit. Including the employer's liability insurance under the umbrella insurance can satisfy the limit requirements.

13.1.5 The Contractor shall obtain and maintain a separate Owners and Contractor's Protective Liability Insurance Policy for the same limits of liability as specified for the Commercial General Liability Insurance in the name of the University, the State of New Jersey. The Architect/Engineer, and the University's Project Manager are to be the named as additional insured. The policy shall be maintained in force for the term of the Project or one year, whichever is longer.

13.1.6 Excess Liability, umbrella insurance form, applying excess of primary to the commercial general liability, commercial automobile liability and employer's liability insurance shall be provided with minimum limits of three million dollars ($3,000,000) per occurrence, three million dollars ($3,000,000) general aggregate, and three million dollars ($3,000,000) products/completed operations.

13.1.6.1 The General Liability insurance General Aggregate and Umbrella Excess Liability limits shall apply and be written exclusively, in total, to this Project only. A per project endorsement for all coverage's and limits must be included in each policy.

a) Bodily injury and property damage insurance policies shall be so written as to provide coverage for special hazards where such hazards will be incidental to subcontractors’ work.

13.1.7 The contractor shall require all its subcontractors and sub-subcontractors and any
other company employed by the contractor working on this project to maintain during the life of the contract agreement(s) between itself and its sub-contractors, along with agreements between its subcontractors and their subcontractors, until final acceptance of the work by the University the insurance limits and requirements as defined above. It is a contractor option to determine the amount of excess liability it will require its subcontractors to carry however all insurance shall be written on a “per project” basis. The contractor shall be responsible for obtaining certificates of insurance from all of its subcontractors, sub-subcontractors, etc. for all coverage and renewals thereof for each company either hired directly by the contractor or hired by the contractors subcontractors working on this project prior to each company beginning work on the project. The contractor shall provide copies of all subcontractor certificates of insurance to the University.

a) ALL SUBCONTRACTOR CERTIFICATES MUST BE SUBMITTED PRIOR TO THE START OF WORK ON THE SITE.

13.1.8 Prior to commencement of construction, the contractor shall provide four (4) certified copies of such insurance policy or certificate of such insurance to be delivered to the University's project manager and the University.

13.1.9 Should the contractor fail to comply with all insurance requirements indicated in the contract documents and provide satisfactory evidence of such compliance to the University within seven (7) calendar days of the issuance of a Notice to Proceed, contract and/or receipt by the contractor of a University purchase order on this project from the University, the contracting officer will consider the contractor to be in violation of the contract documents. Upon such declaration of a breach of contract, the contracting officer through the University's project manager without prejudice to any other right or remedy available to the University and after giving the contractor and/or its surety three (3) working days written notice can either terminate the employment of the contractor for this project or purchase the required insurance. If the University chooses to purchase the required insurance it will deduct the cost of said insurance from the contact amount agreed upon with the contractor. Under either option selected by the University the contractor will have no recourse against the University.

13.2 INSURANCE TO BE CARRIED BY THE UNIVERSITY

13.2.1 The University shall provide insurance protection in the form of a Builders Risk Insurance or similar Policy upon the structure for which the Work on this Contract is to be done. The structure will be insured for 100% of the insurable replacement value thereof including materials, owned by the University, in place or to be used as part of the permanent construction including surplus materials. Should the structure be damaged or destroyed as a result of the contractors' negligence the University will subrogate against the contractor for the cost to repair or replace the damage to bring the structure back to the condition intended under this contract.

13.2.2 This insurance shall not protect against damage or loss to any of the Contractor's or Subcontractor's property including but not limited to tools, equipment,
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scaffolding, staging towers or forms, Contractor's materials and sheds or other temporary structures erected for use by the Contractor or Subcontractors. It is understood that the Contractor will at their own expense, carry all insurance which may be required to provide the necessary protection against such loss or damage herein described which insurance shall contain a waiver of any right of subrogation against the University.

13.2.3 The insurance procured by the University under this paragraph may provide for a deductible. The Contractor shall assume the responsibility for any deductible for any builder’s risk loss it may make claim for under this policy.

13.2.4 The Contractor shall immediately notify the University, in writing and take any other appropriate steps as may be required under the standard Builder's Risk Insurance Policy in effect in the event of any loss. Prior to the acceptance of the building by the University, the Contractor shall, at the University's option, replace and repair the damaged Work as originally provided in the drawings and specifications at no additional compensation to that provided in the original contract.

13.2.5 All losses will be adjusted with, and payable to, the University.

13.2.6 The Contractor shall not include any cost for Builders Risk insurance premiums as described herein. However, this provision shall not relieve the Contractor from their obligation to complete, according to plans and specifications, the project covered by the contract, and the Contractor and their Surety shall be obligated to full performance of the Contractor's undertaking.

ARTICLE 14 - CHANGES IN THE WORK

14.1 CHANGES IN THE WORK

14.1.1 Changes to this Contract may only be accomplished by a Change Order issued in accordance with the procedures set forth in this Article 14 and Division #1 of the Specifications. The Change Order may result in an increase, decrease or have no effect upon the Contract Price only. The contract time cannot and will not be adjusted for any reason.

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14.1.3 Change Orders shall include all impacts that the change to the work may have upon the performance of the job and shall resolve all issues between the parties related, either directly or indirectly, to the change. By executing the Change Order, the Contractor waives the right to assert any future claims of any kind caused in whole or in part by the change.

14.2 OWNER DIRECTED CHANGES

14.2.1 At any time after execution of this contract by all parties the contracting officer may make any change in the work within the general scope of the contract including, but
limited to, changes as follows:

a) in the specifications, including drawings and designs;
b) in the method or manner of performance of the work;
c) in the University furnished facilities, equipment, materials, services or site;
d) directing acceleration in the performance of the work.

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14.4 FAILURE TO PROVIDE NOTIFICATION

14.4.1 In the event that the Contractor fails to provide the immediate notification to the University’s project manager and/or to complete the “Change Order Request” pursuant to and as specified elsewhere in the contract documents with the supporting documentation as set forth in the Specifications, the Contractor shall have waived any and all claims for additional compensation related to said changes or conditions encountered.

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14.5.3 In the event that the parties cannot agree to a lump sum amount for a Change Order, the University's contracting officer shall be permitted to order the Contractor to completed the work covered by the Change Order on a time and material basis, under procedures established by the University's project manager to ensure the proper accounting of direct labor and direct material costs. The Contractor shall be allowed the same allowance for overhead and profit as set forth in the contract documents.

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14.7 CONTINUATION OF THE WORK

14.7.1 In order to avoid delays in the progress of work or when, in the best interest of the University, the contracting officer may, at his/her discretion, direct the contractor in writing to proceed with a change without a prior or final agreement on costs and/or scope of work. Such direction shall be in the form of an unpriced Change Order or
written direction. If the contractor has or intends to assert a request for additional compensation under this article, he/she shall turn over to the University's project manager in sufficient detail and in accordance with all contract document requirements hereof all necessary information and costs as required by the contacting officer after receipt of an unpriced change order or written direction.

14.7.2 Where the cost of property made obsolete or excess as a result of a change is included in the contractor's request for adjustment, the contracting officer shall have the right to prescribe the manner of deposition of such property.

ARTICLE 15 - ASSIGNMENT OF ANTITRUST CLAIM(S)

15.1 ASSIGNMENT OF ANTITRUST CLAIM(S)

15.1.1 The contractor recognizes that in actual economic practice, overcharges resulting from antitrust violations are, in fact, usually borne by the ultimate purchaser. Therefore, and as a consideration for executing this contract, the contractor, acting herein by and through its duly authorized agent, hereby conveys, sells, assigns and transfers to the University all right, title and interest to all claims and causes of action it may now or hereafter acquire under the antitrust laws of the United States or the State of New Jersey relating to the particular goods or services purchased or acquired by the University pursuant to this contract.

In connection with this agreement, the following are the express obligations of the contractor:

a) it will take no action, which will in any way diminish the value of the rights conveyed or assigned hereunder
b) it will advise the University:
   (1) in advance of its intention to commence any action on its own behalf regarding such claim or cause(s) of action
   (2) immediately upon becoming aware of the fact that action has been commenced on its behalf by some other person(s) of the pendency of such action
c) it will notify the defendants in any antitrust suit of the fact of the within assignment at the earliest practicable opportunity after the contractor has initiated an action on its behalf or becomes aware that such an action has been filed on his/her behalf by any other person; a copy of such notice will be sent to the University.

Furthermore, it is understood and agreed that in the event any payment under any such claim or cause of action is made to the contractor, it shall promptly pay over to the University the aliquot share thereof, if any, assigned to the University herein.

ARTICLE 16 - AFFIRMATIVE ACTION REQUIREMENTS

16.1 POLICY STATEMENT
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It has long been the policy of the University to promote equal employment opportunity by prohibiting discrimination in employment and requiring affirmative action in the performance of contracts funded by the University. This policy has been reinforced and expended by an act of the legislature. The new statute, New Jersey Public Law 1975, Chapter IR, provides that no public works contractor can be awarded nor any monies paid until the prospective contractor has agreed to contract performance, which complies with the approved affirmative action plan. The law applies to each political subdivision and agency of the State and includes procurement and service contracts as well as construction contracts. This section was prepared to explain the affirmative action requirements and procedures for public agencies awarding contracts and for contractors bidding on contracts. To assure effective implementation of the affirmative action law while allowing the business operations of a government to proceed efficiently, these regulations are designed to minimize administrative paperwork and delays.

16.2 MANDATORY LANGUAGE

During the performance of this contract, the contractor agrees as follows:

a) Where applicable, the contractor or sub-contractor will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, sex, affectional or sexual orientation. The contractor will take affirmative action to insure that such applicants are recruited and employed and that employees are treated during employment without regard to their age, race, creed, color, national origin, ancestry, marital status, sex, affectional or sexual orientation. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, lay-off or termination, rates of pay or other forms of compensation and the selection for training, including apprenticeship. The contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the public agency compliance officer setting forth provisions of this non-discrimination clause.

b) Where applicable, the contractor or sub-contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, sex, affectional or sexual orientation.

c) Where applicable, the contractor or sub-contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided by the agency contracting officer advising the labor union or worker’s representative of the contractor’s commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

d) Where applicable, the contractor or sub-contractor agrees to comply with any regulations promulgated by the Treasurer pursuant to P.L. 1975, c.127, as amended and supplemented from time to time.

e) When hiring workers in each construction trade, the contractor or sub-contractor agrees to attempt in good faith to employ minority and female
workers in each construction trade consistent with the applicable employment goal prescribed by

N.J.A.C. 17:27-7.3 provided, however, that the affirmative action officer may, in its discretion, exempt a contractor or sub-contractor from compliance with the good faith procedures prescribed by the following provisions (a), (b) and (c) as long as the affirmative action office is satisfied that the contractor is employing workers provided by a union which provides evidence in accordance with standards prescribed by the affirmative action office that its percentage of active, "card carrying" members who are minority and female workers is equal to or greater than the applicable employment goal prescribed by N.J.A.C. 17:27-7.3 promulgated by the Treasurer pursuant to P.L. 1975, c.127, as amended and supplemented from time to time. The contractor or sub-contractor agrees that a good faith effort shall include compliance with the following procedures:

1) If the contractor or sub-contractor has a referral agreement or arrangement with a union for a construction trade, the contractor or sub-contractor shall, within three (3) days of the contract award, seek assurances from the union that it will cooperate with the contractor or sub-contractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to P.L. 1975, c.127, as it is amended and supplemented from time to time. If the contractor or sub-contractor is unable to obtain said assurances from the construction trade union at least five (5) days prior to the commencement of construction work, the contractor or sub-contractor agrees to directly attempt to hire minority and female workers consistent with the applicable employment goal. If the contractor's or sub-contractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and female workers consistent with the applicable employment goal, the contractor or sub-contractor agrees to be prepared to hire minority and female workers directly consistent with the applicable employment goal by complying with the hiring procedures prescribed under (2) below and the contractor or sub-contractor further agrees to take immediate said action if it determines or is so notified by the affirmative action office that the union is not referring minority and female workers consistent with the applicable employment goal.

2) If the hiring of a workforce consistent with the employment goal has not or cannot be achieved for each construction trade by adhering to the procedures of (1) above or if the contractor or sub-contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or sub-contractor agrees to take the following actions consistent with the applicable county employment goals.

(a) to notify the public agency compliance officer, affirmative action office and at least one (1) approved minority referral organization of its manpower needs and request the referral of minority and female workers;
(b) to notify any minority and female workers who have been listed with it as awaiting available vacancies;
(c) prior to commencement of work to request the local construction trade union, if the contractor or sub-contractor has a referral agreement or arrangement with a union for the construction trade, to refer minority and female workers to fill jobopenings;
(d) to leave standing requests for additional referral to minority and female workers with the local construction trade union if the contractor or sub-contractor has a referral agreement or arrangement with a union for the construction trade, the State training and employment service and the other approved referral sources in the area until such time as the workforce is consistent with the employment goal;
(e) if it is necessary to lay-off some of the workers in a given trade on the construction site to assure, consistent with the applicable State and Federal statutes and court decisions, that sufficient minority and female employees remain on the site consistent with the employment goal and to employ any minority and female workers laid-off by the contractor or on any other construction site in the area on which its workforce composition is not consistent with an employment goal established pursuant to rules implementing P.L. 1975, c.127;
(f) to adhere to the following procedure when minority and female workers apply or are referred to the contractor or sub-contractor:

(i) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required, the contractor or sub-contractor shall determine the qualifications of such individuals and, if the contractor's or sub-contractor's workforce in each construction trade is not consistent with the applicable employment goal, it shall employ such persons which satisfy appropriate qualification standards provided, however, that a contractor or sub-contractor shall determine that the individual at least possess the skills and experience recognized by any workers' skill and experience classification determination which may have been made by a public agency compliance officer, union, apprentice program or referral agency provided the referral agency is acceptable to the affirmative action office and provided further that, if necessary, the contractor or sub-contractor shall hire minority and female workers who qualify as trainees pursuant to these regulations. All of the requirements of this paragraph, however, are limited by the provisions of paragraph (3) below.

(ii) If the contractor's or sub-contractor's workforce is consistent with the applicable employment goal, the name of said minority or female group individual shall be maintained on a waiting list for the first consideration in the event the contractor's or sub-contractor's workforce is no longer consistent with the applicable employment goal.

(iii) If, for any reason, said contractor or sub-contractor determines that a minority individual or a female is not qualified or if the...
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individual qualifies as an advanced trainee or apprentice, the contractor or sub-contractor shall inform the individual in writing with the reasons for the determination and maintain a copy in its files and send a copy to the public agency compliance officer and to the affirmative action office.

(g) to keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract on forms made available by the affirmative action office and shall be submitted promptly to that office upon request.

3) The contractor or sub-contractor agrees that nothing contained in (2) preceding provision shall preclude the contractor or sub-contractor from complying with the hiring hall or apprenticeship provisions in any applicable bargaining agreement or hiring hall arrangement and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral or to the apprenticeship program for admission pursuant to such agreement or arrangement provided, however, that where the practices of a union or apprenticeship program will result in the exclusion of minorities and females or the failure to refer minorities and females consistent with the county employment goal, the contractor or sub-contractor shall consider for employment persons referred pursuant to said provisions (2) without regarding to such agreement or arrangement; provided further, however, that the contractor or sub-contractor shall not be required to employ minority and female advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement or, in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or sub-contractor agrees that in implementing the procedures of the preceding provisions (2) it shall, where applicable, employ minority and female workers residing within the geographical jurisdiction of the union.

4) The contractor agrees to complete an initial manning report on forms provided by the affirmative action office on in the form prescribed by the affirmative action office and submit a copy of said form no later than three (3) days after signing a construction contract provided, however, that the public agency may extend in a particular case the allowable time for submitting the form to no more than fourteen (14) days and to submit a copy of the monthly project manning report once a month by the seventh (7th) work day of each month thereafter for the duration of this contract to the affirmative action office and to the public agency compliance officer. The contractor agrees to cooperate with the public agency in the payment of budgeted funds as is necessary for on-the-job and off-the-job programs for outreach and training of minority and female trainees employed on the construction site.

5) The contractor and its sub-contractors shall furnish such reports or other documents to the affirmative action office as may be requested by the office from time to time in order to carry out the purposes of these
regulations and public agencies shall furnish such information as may be requested by the affirmative action office for conducting a compliance investigation pursuant to Sub-Chapter 10 of the Administrative Code, N.J.A.C. 17:27.
THIS AGREEMENT, made this __________ day of __________, 2018, by and between ROWAN UNIVERSITY, herein called “Owner”, acting herein through its VP of Finance and CFO, and

CONTRACTOR NAME
CONTRACTOR ADDRESS
CONTRACTOR CITY, STATE & ZIP CODE

A Corporation, State of New Jersey, hereinafter called CONTRACTOR. The Contractor hereby agrees with the Owner to commence and complete the construction described as follows:

<ENTER PROJECT NAME>
PROJECT NO. 77XXX

The Contractor agrees to furnish all labor, material, equipment and services necessary to construct and complete the project as detailed in Rowan University’s Bid No. ________, dated ________, hereinafter called the Project, for the sum of ________, to include the base bid items and to include all work in connection therewith, under the terms as stated in the Bid Documents, and at his (its or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment tools, superintendence, labor, insurance, and services necessary to complete the said project in accordance with the conditions and prices stated in the Contract Documents, as detailed on Exhibit “A” attached hereto and made a part hereof.

Unless the Notice to Proceed specifies a different date, the contractor hereby agrees to commence work under this contract as soon as possible but no later than _________________, and to fully complete the project within _____ consecutive calendar days thereafter. Time is the essence for the completion of this contract. The Contractor further agrees to pay, as liquidates damages, the sum of _________________ for each consecutive calendar day thereafter as hereinafter provided in Article 8 of the General Conditions.

The OWNER agrees to pay the CONTRACTOR for the performance of the contract, subject to additions and deductions, as provided in the General Conditions of the Contract Specifications, and to make payments on account thereof as provided in Article 10 of the General Conditions and Section 012500 – Contract Modification Procedures.
“The Contractor shall comply with the provisions of Chapter 33, of Title 52 of the Revised Statues (R.S. 52:33-1 et seq) requiring that preference be given to the use of domestic materials or as same may be governed by Federal Law or Regulation.


During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor, where applicable, will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor where applicable, agrees to comply with any regulations promulgate by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Division may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B and C, as long as the Division is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Division, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2.
The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

(A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities to minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines or is so notified by the Division that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

(B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

(1) To notify the public agency compliance officer, the Division, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27- 5.3, of its workforce needs, and request referral of minority and women workers;

(2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;

(3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;
(4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;

(5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and non-discrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;

(6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

(i) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Division. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.

(ii). The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in paragraph (i) above, whenever vacancies occur. At the request of the Division, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.

(iii). If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Division.
(7). To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Division and submitted promptly to the Division upon request.

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Division an initial project workforce report (Form AA 201) provided to the public agency by the Division for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Division and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

(D) The contractor and its subcontractors shall furnish such reports or other documents to the Division of Public Contracts Equal Employment Opportunity Compliance as may be requested by the Division from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the
Division of Public Contracts Equal Employment Opportunity Compliance
for conducting a compliance investigation pursuant to Subchapter 10 of
the Administrative Code at N.J.A.C. 17:27.
IN WITNESS WHEREOF, the parties to these presents have executed this contract electronically, which shall be deemed an original, in the year and day first above mentioned.

ATTEST: for Rowan University

__________________________
Witness

Joseph F. Scully Jr.
Sr. VP of Finance, Chief Financial Officer

(SEAL)

Contractor Date

Title

WARRANTY:

It is hereby certified and warranted by the undersigned contractor and by the undersigned principals or officers thereof, for said Contractor and for themselves, personally and individually, that no person has been employed to solicit or secure this Contract in violation of the provisions of Section 10, Chapter 48 of the Laws of 1954, N.J.S.A 52:34-15, or in violation of any other laws of the State of New Jersey; and it is further warranted that all applicable laws and regulations shall be complied with in the performance of this contract.

(SEAL)

Contractor Date

By

Title

Address

City State Zip Code

Rowan University
<Enter Project Name>
Rowan Project No. 77XXX CONSTRUCTION CONTRACT <Date>

Section III - 7
**Exhibit A**

Rowan University Invitation for Bid

**PROJECT MANUAL**

**INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS**

<table>
<thead>
<tr>
<th>Section</th>
<th>Document Description</th>
<th>Date</th>
<th>Pages</th>
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<tbody>
<tr>
<td>I</td>
<td>Instructions to Bidders</td>
<td>dated July 25, 2017</td>
<td>1 through 7</td>
</tr>
<tr>
<td>II</td>
<td>General Conditions</td>
<td>dated July 25, 2107</td>
<td>1 through 60</td>
</tr>
<tr>
<td>III</td>
<td>Construction Contract</td>
<td>dated July 25, 2107</td>
<td>1 through 9</td>
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<td></td>
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<td>Allowance Charge Request Form</td>
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<td>Request for Information Form</td>
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<tr>
<td></td>
<td>Change Order Request Form</td>
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<td>Page 1</td>
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<td>Change Order Form</td>
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<td>Page 1</td>
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<tr>
<td></td>
<td>Hourly Labor Rate Breakdown Form</td>
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<tr>
<td></td>
<td>Daily Job Report Form</td>
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<td>Page 1</td>
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<tr>
<td></td>
<td>Application and Certificate for Payment Form (AIA G702)</td>
<td>---</td>
<td>Pages 1 through 2</td>
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<td></td>
<td>Attachment to G702 Certification For Payment</td>
<td>---</td>
<td>Pages 1 through 2</td>
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<td>Contractor’s Partial or Final Release And Waiver of Liens</td>
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<td>Page 1</td>
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<td></td>
<td>Rowan Tax Exempt Letter</td>
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<td>Consent of Surety Company to Final Payment (AIA G707)</td>
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DIVISION 01 GENERAL REQUIREMENTS DATED July 25, 2017

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<td>Summary of Work</td>
<td>011000-1 to 011000-4</td>
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<td>Work Restrictions</td>
<td>011400-1 to 011400-3</td>
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<td>Unit Prices</td>
<td>012200-1</td>
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<td>012300</td>
<td>Alternates</td>
<td>012300-1 to 012300-2</td>
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<td>Procedures and Controls</td>
<td>012400-1 to 012400-17</td>
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<td>Contract Modification Procedures</td>
<td>012500-1 to 012500-5</td>
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<td>012900</td>
<td>Payment Procedures</td>
<td>012900-1 to 012900-6</td>
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<td>Coordination</td>
<td>013100-1 to 013100-3</td>
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<td>013200</td>
<td>Construction Progress Schedule</td>
<td>013200-1 to 013200-6</td>
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<td>Submittal Procedures</td>
<td>013300-1 to 013300-15</td>
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<td>Quality Control Requirements</td>
<td>014000-1 to 014000-4</td>
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<td>Testing Services</td>
<td>014100-1 to 014100-4</td>
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<td>Reference Standards</td>
<td>014200-1 to 14200-5</td>
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<td>Construction Facilities &amp; Temporary Controls</td>
<td>015000-1 to 015000-8</td>
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<td>Contract Closeout</td>
<td>017700-1 to 017700-9</td>
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<td>017820</td>
<td>Operation and Maintenance Data</td>
<td>017820-1 to 017820-8</td>
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<td>018200</td>
<td>Demonstration and Training</td>
<td>018200-1 to 018200-5</td>
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**TECHNICAL SPECIFICATIONS**

Rowan University

<Enter Project Name>

Rowan Project No. 77XXX CONSTRUCTION CONTRACT

<Date> Section III - 8
DIVISION XX
Section XXXXXX

**DRAWINGS DATED**

ARCHITECTURAL

MECHANICAL

ELECTRICAL

PLUMBING

END OF SECTION
## REQUEST FOR INFORMATION

<table>
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<tr>
<th>RFI No:</th>
<th>Rowan Project No./Description:</th>
<th>Date Submitted:</th>
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<td>Requested Response Date:</td>
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<td>Actual Response Date:</td>
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Rowan Project Manager:

Submitted to:

Company:

Contract Document Reference:

### RFI DISCUSSION

Individually number each separate topic or question

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<th>Submitted by (Name &amp; Company):</th>
<th>Title:</th>
<th>Date:</th>
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</table>

### RFI RESPONSE

Answered by (Name & Company):

<table>
<thead>
<tr>
<th>Title:</th>
<th>Date:</th>
</tr>
</thead>
</table>
CHANGE ORDER REQUEST

PROJECT: (name, address)  CHANGE ORDER REQUEST NUMBER:

DATE OF ISSUANCE:

ARCHITECT'S PROJECT NO:

ARCHITECT: (name, address)  FROM CONTRACTOR:  (name, address)

The contractor must submit this proposal with all appropriate documentation and/or notify the Architect or Owner, in writing, of the date on which proposal submission is anticipated.

THIS IS NOT A CHANGE ORDER, A CONSTRUCTION DIRECTIVE OR A DIRECTION TO PROCEED WITH THE WORK DESCRIBED IN THE PROPOSED MODIFICATIONS.

DESCRIPTION: (Insert a written description of the Work)

ATTACHMENTS: (List attached documents that support description)

REQUESTED BY THE CONTRACTOR:

(Signature)  (Printed Name and title)
The Contract is changed as follows:

Not valid until signed by the Owner, Architect and Contractor.

The original (Contract Sum) (Guaranteed Maximum Price) was
New change by previously authorized Change Orders
The (Contract Sum) (Guaranteed Maximum Price) prior to this Change Order was
The (Contract Sum) (Guaranteed Maximum Price) will be (increased) (decreased) (unchanged) by this Change Order in the amount of
The new (Contract Sum) (Guaranteed Maximum Price) including this Change Order will be

The Contract Time will be (increased) (decreased) (unchanged) by
The date of Substantial Completion as of the date of this Change Order therefore is

NOTE: This summary does not reflect changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive.

Rowan University

ARCHITECT

Contractor

Address

Address

__________________________

BY

DATE_______________________

__________________________

Architect’s Project No

Contract Date

Contract For

Purchase Order No

__________________________

Owner

Address

201 Mullica Hill Road

Glassboro, NJ 08028-1701

__________________________

__________________________

__________________________

__________________________

__________________________
ROWAN UNIVERSITY
HOURLY LABOR RATE BREAKDOWN FORM

All Contractors (Including sub-subcontractors) need to include a detailed breakdown of all wage rates, payroll burden costs and material costs for lump sum and time and material extras. Payroll burden items, FICA, FUI, SUI, and Workmen’s Compensation will be reimbursed on an average annualized basis. This information must be provided for all trade to be utilized on the project by any and all contractors at the time of contractors bid submission. The required format is as follows:

Contractor: ________________________________

Address: __________________________________________

_______________________________________________

_______________________________________________

Telephone: ________________________________________

Prepared by: ______________________________________

Trade Classification: ________________________________

Local Union No: __________________________

(If Applicable) Merit Shop_______ Union________ (Check One)

Effective Date From__________________ To_________________

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<th>Item</th>
<th>(%)</th>
<th>(S) Straight Time (a)</th>
<th>(1 ½ x) Overtime (b)</th>
<th>(S) Premium Cost (b-a)</th>
<th>(2x) Overtime (c)</th>
<th>(S) Premium Cost (c-a)</th>
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<td>1). Base Rate *</td>
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<td>2). Overhead (on base rate only)</td>
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<td>(d) XXXXXXX</td>
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<td>3). Profit (on base rate only)</td>
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<td>XXXXXXX</td>
<td>(d) XXXXXXX</td>
<td>(d) XXXXXXX</td>
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<td>4). F.I.C.A.</td>
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<td>5). Federal Unemployment Tax</td>
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<td>6). State Unemployment Tax</td>
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<td>7). Welfare Fund</td>
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<td>8). Pension</td>
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<td>9). Vacation Fund</td>
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<td>10). Annuity Fund</td>
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<td>11). Associate Dues</td>
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<td>12). Paid Holiday</td>
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<td>13). Workmen’s Compensation</td>
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<td>14). Other (Define)</td>
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<td>15). Other</td>
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<td>TOTAL CHARGE PER HOUR</td>
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*All rates must be at the current minimum prevailing wage rate for the State of NJ.
Please refer to the state website for further information at http://lwd.dol.state.nj.us
## DAILY JOB REPORT

### Project #

**DATE:**

**WEATHER CONDITIONS:**

**VISITORS:**

<table>
<thead>
<tr>
<th>CONTRACTORS ON SITE:</th>
<th>SUPER ON SITE (Y/N):</th>
<th>WORKFORCE ON SITE: (Foreman, Tradesmen, Laborers, etc.)</th>
<th>NO. OF WORKERS</th>
<th>WORK BEING DONE:</th>
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</table>

**MATERIALS DELIVERED:**

**EQUIPMENT ONSITE:**

**PROBLEMS/STATUS/CAUSES FOR DELAY:**

**NOTEWORTHY PHONE CALLS:**

---

4/4/2016 8:55 AM
APPLICATION AND CERTIFICATE FOR PAYMENT

TO OWNER: PROJECT: APPLICATION NO:

FROM CONTRACTOR: VIA ENGINEER: PERIOD TO:

PROJECT/CONTRACT NO: CONTRACT DATE:

APPLICATION DATE:

AIA DOCUMENT G702

<table>
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<tr>
<th>CHANGE ORDER SUMMARY</th>
<th>ADDITIONS</th>
<th>DEDUCTIONS</th>
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<td>Change Orders approved in previous months by owner TOTAL</td>
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</tr>
<tr>
<td>Approved This Month Number Date Approved</td>
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</tbody>
</table>

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: Date:

APPLICATION IS MADE FOR PAYMENT, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM

2. Net change by Change Orders

3. CONTRACT SUM TO DATE (LINE 1 + 2)

4. TOTAL COMPLETED & STORED TO DATE
   (Column G on G703)

5. Retainage:
   a. ___ % of Completed Work

   (Column D + E on G703)

   b. ___ % of Stored Materials

   (Column I on G703)

   Total Retainage (line 5a + 5b or
   Total in Column I of G703)

6. TOTAL EARNED LESS RETAINAGE
   (Line 4 less Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR
   PAYMENT (Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE

9. BALANCE TO FINISH, PLUS RETAINAGE
   (Line 3 less Line 6)

State County of:
Subscribed and sworn to before me this day of 2010
Notary Public:
My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, Based on on-site observations and the data comprising the above application, the Architect certifies to the Owner that to the best of the Architect's knowledge, Information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

ARCHITECT:

By: Date:

AMOUNT CERTIFIED

This Certificate is not negotiable. THE AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.
<table>
<thead>
<tr>
<th>A</th>
<th>B DESCRIPTION OF WORK</th>
<th>C QUANTITY</th>
<th>UNIT OF MEASURE</th>
<th>D SCHEDULED VALUE FROM PREVIOUS APPLICATION UNIT OF MEASURE TOTAL</th>
<th>E WORK COMPLETED COMPLETED THIS PERIOD UNIT OF MEASURE TOTAL</th>
<th>F MATERIALS PREVIOUSLY STORED NOT HIDDEN OR STORED TO DATE</th>
<th>G TOTAL COMPLETED TO DATE DATE</th>
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<th>I BALANCE TO FINISH G - I</th>
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Attachment to G702 (or equivalent)
Certification for Payment

Project Name:________________________________________
Project Number:______________Payment Number:___

I, ________________________, a prime contractor working for Rowan University on the above-mentioned project, hereby certify as required by P.L. 191, c.507 of the State of New Jersey that: (you must check one under “A” and one under “B”)

A. With respect to previous progress payments:

( ) all my sub-contractors and suppliers have been paid all amounts due from all previous progress payments I have received from Rowan University for my work on this project

( ) all my sub-contractors and suppliers have been paid all amounts due from all previous progress payments with the exception of those listed below for which payment is being withheld as there exists a valid basis for those sub-contractors and suppliers listed below under the terms of their contract(s) to withhold payment from each such sub-contractor and supplier:

1.________________________________________

2.________________________________________

3.________________________________________

For each such sub-contractor and supplier for which payment is being withheld, I further certify that written notice detailing the specific reason(s) for withholding payment has been provided to each such sub-contractor and supplier with copies
thereof provided to my performance bond company and Rowan University.

B. With respect to this payment number__________:

(    ) all my sub-contractors and suppliers shall be paid all amounts due from this progress payment
(    ) all my sub-contractors and suppliers shall be paid all amounts due from this progress payment with the exception of those listed below for which payment will be withheld as there exists a valid basis for those sub-contractors and suppliers listed below under the terms of their contract(s) to withhold payment from each such sub-contractor and supplier:

1. ____________________________________________

2. ____________________________________________

3. ____________________________________________

For each sub-contractor and supplier for which payment is being withheld, I further certify that written notice detailing the specific reason(s) for withholding payment has been provided to each sub-contractor and supplier with copies thereof provided to my performance bond company and Rowan University.

I certify that the above statements are true. I am aware that if any of the above statements are willfully false, I am subject to punishment.

Dated:___________

______________________________
Signature

______________________________
Please Print Name
CONTRACTOR’S PARTIAL OR FINAL RELEASE AND WAIVER OF LIENS

OWNER:  

OWNER’S AGENT:  

PROJECT:  

CONTRACT FOR:  

CONTRACT DATE:

Upon receipt by the undersigned Contractor of a check from Owner in the sum of $__________, which check will consume payment of all sums due the Contractor for labor, equipment and/or materials supplied in connection with the Project, and when said check has been paid by the bank upon which it is drawn, this document shall become effective to fully and finally waive and release any and all liens, claims, liabilities, actions, and demands that this Contractor and all its subcontractors have or might have against Owner, Lender, the Project, the real property upon which the Project is located and any and all other property owned by Owner on account of or in connection with labor, equipment and/or materials supplied by the undersigned to the Project.

The undersigned Contractor does hereby further acknowledge and represent that through the date hereof the undersigned has received payments totaling $__________ for labor, equipment and/or materials supplied to the Project.

This instrument has been executed as of the _______ day of ____________________, 20__. 

CONTRACTOR:

__________________________________________

By:  

Name:  

Title:  

STATE OF ____________  δ

COUNTY OF _________________  δ

Sworn to and subscribed before me the undersigned authority on this ______ day of ________________, 20__.

[ S E A L ]

Notary Public, State of __________________________

My Commission Expires:

__________________________________________

Printed Name of Notary Public
To Whom It May Concern:

Your recent request to Rowan University requesting information or a tax exempt form is hereby acknowledged.

It has been determined that Rowan University is a government body and is Exempt from New Jersey Sales and Use Taxes imposed by the Sales and Use Tax Act (P.L. 1966, c.30 and c.52). An opinion from the State of New Jersey, Office of the Attorney General has been reproduced below.

If you have any questions, please contact the Accounts Payable Office at (856) 256-4115.

Sincerely,

[Signature]
Joseph F. Scully, Jr.
Vice President for Finance & CFO

[Attachment]

Rowan University

[Footer]

[Contact Information]
CONSENT OF SURETY COMPANY TO FINAL PAYMENT
AIA DOCUMENT C707

PROJECT:
(name, address)

TO (Owner)


ARCHITECT'S PROJECT NO:
CONTRACT FOR:


CONTRACT DATE:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
there insert name and address of Surety Company

SURETY COMPANY,

on bond of there insert name and address of Contractor

CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not
relieve the Surety Company of any of its obligations to there insert name and address of Owner

OWNER,

as set forth in the said Surety Company's bond.

IN WITNESS WHEREOF,
the Surety Company has hereunto set its hand this ______________ day of ______________ 2017

Surety Company

Signature of Authorized Representative

Attest:
(Seal):

Title

NOTE: This form is to be used as a companion document to AIA DOCUMENT G706, CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS, Current Edition.
ROWAN UNIVERSITY
Glassboro, Gloucester County, NJ 08028

ISSUED FOR BID

SOCCER FIELD PRESS BOX
SECTION TOC – TABLE OF CONTENTS

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  01 2900  Application for Payment Requirements
  01 3100  Project Meetings
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DIVISION 9 – FINISHES
  09 9100  Painting

DIVISION 13 – SPECIAL CONSTRUCTION
  13 1290  Prefabricated Press Box
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 WORKED COVERED BY CONTRACT DOCUMENTS

A. The Project consists of the demolition of the existing soccer field press box and installation of a new pre-fabricated press box on the existing CMU walls to remain.

1. Project Location: 201 Mullica Hill Road, Glassboro, NJ
2. Owner: Gloucester County Improvement Authority

B. Contract Documents, dated November 13, 2017 were prepared for the Project by Clarke Caton Hintz, 100 Barrack Street, Trenton, NJ 08608

C. The Work will be bid under one (1) General Contractor Package as a single prime contract as follows:

1. Contract I – General Construction (BP-01)

Note: The Site Work is inclusive with the Contract I under the General Construction (BP-01).

D. The scope of work consists of all labor, materials, equipment, and means to remove and replace the soccer field press box as indicated. Prior to bidding, the contractors are to inspect the building site to become familiar with all conditions.

1.3 WORK UNDER OTHER CONTRACTS

A. The Owner may elect to do additional work beyond the scope of these documents, such as owner equipment and furniture procurement and installation with separate contractors or their own employees.

B. The successful bidders will cooperate fully with separate contractors so that work under those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

1.4 WORK SEQUENCE

A. Logistic Schedule is included in the Project Documents along with a conceptual Construction Schedule. The awarded General Contractor will be required to prepare a Critical Path Method Construction Schedule.
1.5 CONTRACTOR USE OF PREMISES

A. General: During the construction period the Contractor shall be restricted to areas of work only. The Contractor's use of the premises is limited only by the Owner's right to perform work or to retain other contractors on portions of the Project.

B. Parking: No parking on-site in Rowan Campus or on the neighborhood streets.

END OF SECTION 011113
SECTION 012900 - APPLICATIONS FOR PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements governing the Contractor’s Applications for Payment.

B. Related Sections: The following Sections contain requirements that relate to this Section.

1. Schedules: The Contractor’s Construction Schedule and Submittal Schedule are specified in Division 1 Section "Submittals."

1.3 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of the Contractor’s Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
   a. Contractor’s Construction Schedule.
   b. Application for Payment forms, including Continuation Sheets.
   c. List of subcontractors.
   d. List of products.
   e. List of principal suppliers and fabricators.
   f. Schedule of submittals.

2. Submit the Schedule of Values to the Construction Manager and Architect at the earliest possible date but no later than 14 days after the award of the contract. Provide Shop Drawing Submittal Cost, Labor Cost and Materials Cost as separate line items for each component in sufficient detail to be able to track progress accurately.

B. Format and Content: Use the Project Manual table of contents as a guide to establish the format for the Schedule of Values. Provide three (3) line items for each Specification Section, Shop Drawings, Labor and Material Cost.

1. Identification: Include the following Project identification on the Schedule of Values:
   a. Project name and location.
   b. Name of Construction Manager.
   c. Name of the Architect.
   d. Project number.
   e. Contractor’s name and address.
   f. Date of submittal.
2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

   a. Related Specification Section or Division.
   b. Description of Work.
   c. Change Orders (numbers) that affect value.
   d. Dollar value.

   1) Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Break principal subcontract amounts down into several line items.

4. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.

5. Provide a separate line item in the Schedule of Values for each part of the Work where the Applications for Payment may include materials or equipment, purchased or fabricated and stored, on and off site. Payment for stored materials off site, must be in a NJ Bonded and Insured Facility, with evidence of bonds and insurance being provided for at least 200% of the value of the materials being stored. Retainage to be held for Off-Site Stored Materials will be 20% or greater, determined by Rowan University.

   a. Differentiate between items stored on-site and items stored off-site in the Schedule of Values.

6. Provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

7. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Construction Manager and Architect and paid for by the Owner.

   1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.

B. Payment-Application Times: Each progress-payment date is the last day of the month. The period of construction Work covered by each Application for Payment is not to exceed one month.

C. Payment-Application Forms: Use AIA Document G702CMa and Continuation Sheets G703 as the form for Applications for Payment or forms provided by the Owner.

D. Application Preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Construction Manager and/or Architect will return incomplete applications without action.

   1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

E. Transmittal: Submit five (5) signed and notarized original copies of each Application for Payment to the Construction Manager by a method ensuring receipt within 24 hours. All copies shall be complete, including waivers of lien and similar attachments, when required.

F. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics liens from subcontractors, sub-subcontractors and suppliers for the construction period covered by the previous application. There is no limit of the dollar amount for this condition.

   1. Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
   2. When an application shows completion of an item, submit final or full waivers.
   3. The Owner reserves the right to designate which entities involved in the Work must submit waivers.
      a. Submit final Applications for Payment with or proceeded by final waivers from every entity involved with performance of the Work covered by the application that is lawfully entitled to a lien.
   4. Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to the Owner.

G. Initial Application for Payment: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment, include the following:

   1. List of subcontractors.
   2. List of principal suppliers and fabricators.
   3. Schedule of Values.
   4. Contractor's Construction Schedule (preliminary if not final).
   5. Schedule of principal products.
   6. Submittal Schedule (preliminary if not final).
   7. Copies of building permits.
   10. Certificates of insurance and insurance policies.
   11. Performance and payment bonds.
   12. Data needed to acquire the Owner's insurance.
   13. Initial settlement survey and damage report.

H. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.

   1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
   2. Administrative actions and submittals that shall precede or coincide with this application include:
      a. Occupancy permits and similar approvals.
      b. Warranties (guarantees) and maintenance agreements.
      c. Test/adjust/balance records.
      d. Maintenance instructions.
      e. Meter readings.
f. Startup performance reports.
g. Changeover information related to Owner's occupancy, use, operation, and maintenance.
h. Final cleaning.
i. Application for reduction of retainage and consent of surety.
j. Advice on shifting insurance coverages.
k. Final progress photographs.
l. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.
m. Change of door locks to Owner's access.

I. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:

1. Completion of Project closeout requirements.
2. Completion of items specified for completion after Substantial Completion.
3. Ensure that unsettled claims will be settled.
4. Ensure that incomplete Work is not accepted and will be completed without undue delay.
5. Transmittal of required Project construction records to the Owner.
6. Certified property survey.
7. Proof that taxes, fees, and similar obligations were paid.
8. Removal of temporary facilities and services.

J. Retainage is as noted in the General Conditions of the Contract for amount to be held on each Application for Payment until the RCOE Project reaches 50% Completion and Substantial Completion at which time, the retainage may be reduced as noted.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012900
SECTION 013100 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:

1. Preconstruction conferences.
2. Pre-installation conferences.
3. Progress meetings.
4. Coordination meetings.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1.3 PRECONSTRUCTION CONFERENCE

A. The Construction Manager will schedule a preconstruction conference after execution of the Agreement to review responsibilities and personnel assignments.

1.4 PREINSTALLATION CONFERENCES

A. The Construction Manager shall conduct a pre-installation conference at the Project Site before each construction activity that requires coordination with other construction.

B. Attendees: The 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 the Architect of scheduled meeting dates.

1. Do not proceed with the installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

1.5 PROGRESS MEETINGS

A. Progress meetings will be held at the Project Site at regular intervals as scheduled by the Rowan University Project Manager.

1.6 COORDINATION MEETINGS

A. The Single Prime General Contractor shall conduct their own progress and project coordination meetings with their sub-contractors on a weekly basis for all parties involved. Project coordination meetings are in addition to Progress Meetings in 1.5 above and other specific meetings held for other purposes, such as special pre-installation meetings, etc...

B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.
C. 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 Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013100
SECTION 013213 - SCHEDULING

PART 1 - GENERAL

1.1 MILESTONES

Substantial Completion Date as stated in the Instruction to Bidders

1.2 Liquidated Damages:

Contractor is to pay the Owner as liquidated damages of $500.00 per day for Milestones listed above and on the Logistics Schedule attached and $1,000.00 per day for Substantial and Final Completion Dates of the Rowan Soccer Field Press Box, not as a penalty, as set forth in the "GENERAL CONDITIONS IN THE CONTRACT FOR CONSTRUCTION" for each consecutive calendar day beyond the milestone and completion date(s) established.

1.3 Liquidated damages shall not in any way release the Bidder from the obligations of its Contract with the Owner. Liquidated damages shall not in any way release the Bidder from its obligation to indemnify and hold harmless the Owner, Construction Manager, Architect, and their consultants and agents and employees from and against claims, damages, losses and expenses in accordance with the Contract Documents.

1.4 Schedule:

1.4.1 The General Construction General Contractor will prepare a Critical Path Method (CPM) Construction Schedule and submit a paper copy and PDF within 14 days after the issuance of the Notice to Proceed to include but not limited to:

- Submittal Process
- Submittal Review Period
- Construction Permitting
- Construction Trade Work
- Utility work by others
- Delivery of Items
- Installation of Items
- Inspection Times
- Substantial Completion Date
- Final Completion Date
- Owner/User Move In Dates
1.5 Critical Path Schedule: Prepare a fully developed, horizontal bar-chart-type, contractor’s construction schedule. Submit within fourteen (14) day after the Notice to Proceed.

1.5.1 Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the “Schedule of Values.”

1.5.2 Revise percentage increments and time requirements below to suit Project.

1.5.3 Within each time bar, indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.

1.5.4 Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.

1.5.5 Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.

1.6 Work Stages: Indicate important stages of construction for each major portion of the Work, including submittal review, testing, and installation.

1.7 Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.

1.7.1 At each progress meeting, the General Contractor will provide the last 14 day look behind and next 14 day look ahead schedule in comparison with the Approved Final CPM Schedule. Construction Manager will schedule a preconstruction conference after execution of the Agreement to review responsibilities and personnel assignments.

1.8 GENERAL CONTRACTOR REPSONSIBILITY OF MAINTAINING THE SCHEDULE:

1.8.1 The Construction Schedule is to be Calendar Days and the Milestone and Completion dates govern. Work Hours are normally 7:00 AM to 4:00 PM, Monday to Friday, but the General Contractor is responsible to meet the Milestone Dates, even if that includes working past 4:00 PM, over weekends and holidays. No additional dollars will be given to the General Contractor to work the extended hours beyond 4:00 PM nor the weekend and or holidays. Such cost will be the responsibility of the General Contractor to absorb.

1.8.2 Should the Construction Schedule slip for whatever reason, the General Contractor will be responsible to provide a Recovery Schedule to adhere to the Milestone Dates at no additional cost to the owner.

1.8.3 Weather events will not excuse the General Contractor to adhere to the Site Logistic Milestone Dates and the Substantial and Final Completion Dates for the Rowan Soccer Field Press Box.

END OF SECTION 013213
SECTION 013300 - SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

1.2.1 This Section includes administrative and procedural requirements for submittals required for performance of the Work, including the following:

   1.2.1.1 Contractor's construction schedule.
   1.2.1.2 Shop Drawings.
   1.2.1.3 Product Data.
   1.2.1.4 Samples.
   1.2.1.5 Quality assurance submittals.

1.2.2 Related Sections: The following Sections contain requirements that relate to this Section:

   1.2.2.1 Division 1 Section "Applications for Payment" specifies requirements for submittal of the Schedule of Values.
   1.2.2.2 Division 1 Section "Coordination" specifies requirements governing preparation and submittal of required Coordination Drawings.
   1.2.2.3 Division 1 Section "Project Meetings" specifies requirements for submittal and distribution of meeting and conference minutes.
   1.2.2.4 Division 1 Section "Quality Control" specifies requirements for submittal of inspection and test reports.
   1.2.2.5 Division 1 Section "Contract Closeout" specifies requirements for submittal of Project Record Documents and warranties at project closeout.

1.3 SUBMITTAL PROCEDURES

1.3.1 Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

   1.3.1.1 Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity. BIM is required by the Single Prime General Contractor.
   1.3.1.2 Retain subparagraph below where one submittal has an impact on another.
   1.3.1.3 Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.

   1.3.1.3.1 The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.

   1.3.1.4 Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.
1.3.2 Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block. Each copy of the submittal is to have a complete submittal data sheet, form is attached.

1.4 SINGLE PRIME GENERAL CONTRACTOR'S CONSTRUCTION SCHEDULE

1.4.1 Critical Path Schedule: Prepare a fully developed, horizontal bar-chart-type, contractor’s construction schedule. Submit within fourteen (14) day after the Notice to Proceed.

1.4.1.1 Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values."

1.4.1.2 Revise percentage increments and time requirements below to suit Project.

1.4.1.3 Within each time bar, indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.

1.4.1.4 Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.

1.4.1.5 Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.

1.4.2 Work Stages: Indicate important stages of construction for each major portion of the Work, including submittal review, testing, and installation.

1.4.3 Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.

1.4.4 Schedule Updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.5 SHOP DRAWINGS

1.5.1 Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.

1.5.2 Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:

1.5.2.1 Dimensions.
1.5.2.2 Identification of products and materials included by sheet and detail number.
1.5.2.3 Compliance with specified standards.
1.5.2.4 Notation of coordination requirements.
1.5.2.5 Notation of dimensions established by field measurement.

1.5.3 Do not use Shop Drawings without an appropriate final stamp indicating action taken.
1.6 PRODUCT DATA

1.6.1 Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.

1.6.1.1 Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:

- 1.6.1.1.1 Manufacturer's printed recommendations.
- 1.6.1.1.2 Compliance with trade association standards.
- 1.6.1.1.3 Compliance with recognized testing agency standards.
- 1.6.1.1.4 Application of testing agency labels and seals.
- 1.6.1.1.5 Notation of dimensions verified by field measurement.
- 1.6.1.1.6 Notation of coordination requirements.

1.6.1.2 Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

1.7 SAMPLES

1.7.1.1 Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.

1.7.1.2 Include identification on each sample with full project identification.

1.7.1.3 Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.

1.7.1.4 Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

1.8 QUALITY ASSURANCE SUBMITTALS

1.8.1 Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.

1.8.2 Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 1 Section "Quality Control, 01 45 001."

1.9 ARCHITECT'S ACTION

1.9.1.1 Except for submittals for the record or information, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return promptly.
1.9.2 Action Stamp: The Architect will stamp each submittal with a uniform, action stamp. The Architect will mark the stamp appropriately to indicate the action taken, as follows:

1.9.2.1 “Reviewed Only” – There are no notations or comments on the submittal and, in our opinion, the submittal meets the requirements of the Contract Documents and the CONTRACTOR may release the equipment for production.

1.9.2.2 “Reviewed with Comments” – Notations have been made on the submittals to insure conformance with the Contract Documents. The CONTRACTOR may release the equipment for production in accordance with the notations and must acknowledge the comments and notations and attest to their incorporation into the product.

1.9.2.3 “Review and Resubmit” – When the material submitted is incorrect or insufficient to review properly and it is necessary to see the complete package again.

1.9.2.4 “Rejected” – The submittal does not meet the requirements of the Contract Documents. The CONTRACTOR must submit the specified product.

1.9.3 Unsolicited Submittals: The Architect will return unsolicited submittals to the sender without action.

1.9.4 Submit all requirements directly to the Architect and submit a copy to the CM. Architect will return submittals directly to the Prime Contractor. Submit eight (8) copies of all required submittal forms.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013300
SECTION 013513 - PROJECT MODIFICATION PROCEDURES

PART 1 - GENERAL

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

1.2 SUMMARY
A. This Section specifies administrative and procedural requirements for handling and processing contract modifications.

1. Single Prime Contracts: Provisions of this Section apply to the work of the single prime contractor.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Submittals" for requirements for the Contractor's Construction Schedule.
2. Division 1 Section "Applications for Payment" for administrative procedures governing Applications for Payment.
3. Division 1 Section "Product Substitutions" for administrative procedures for handling requests for substitutions made and accepted during the bidding process ONLY.

1.3 MINOR CHANGES IN THE WORK
A. The Architect will issue Supplemental Instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or Contract Time, on AIA Form G710, Architect's Supplemental Instructions.

1.4 CHANGE ORDER PROPOSAL REQUESTS
A. Owner-Initiated Proposal Requests: The Architect and Construction Manager will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal requests issued by the Architect and Construction Manager are for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.
2. Within 7 days of receipt of a proposal request, submit an estimate of cost necessary to execute the change to the Architect and Construction Manager for the Owner's review.

   a. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
   b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.

B. Contractor-Initiated Proposals: When latent or unforeseen conditions require modifications to the Contract, the Contractor must inform the Owner within 7 days of identification and/or knowledge of the conditions causing the change. The Contractor may propose changes by submitting a request for a change to the Architect.

1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
2. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Comply with requirements in Section "Product Substitutions" if the proposed change requires substitution of one product or system for a product or system specified.

C. Proposal Request Form: Use AIA Document G709 for Change Order Proposal Requests or Owner's Forms, if applicable.

1.5 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: When the Owner and the Contractor disagree on the terms of a Proposal Request, the Architect and Construction Manager may issue a Construction Change Directive on AIA Form G714. The Construction Change Directive instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. The Construction Change Directive contains a complete description of the change in the Work. It also designates the method to be followed to determine change in the Contract Sum or Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.6 CHANGE ORDER PROCEDURES

A. Upon the Owner's approval of a Proposal Request, the Architect or Construction Manager will issue a Change Order for signatures of the Owner and the Contractor on AIA Form G701CMa.

1.7 CHANGE ORDER OVERHEAD & PROBITS

A. Change Order Mark up, Overhead and Profit is a maximum of ten (10) Percent (%) for General Contractor Self Performed All Work; Sub-Contractor and Sub-Sub-Contractor Self Performed all Work Only, maximum of ten (10) Percent (%) with five (5) Percent for the General Contractor. Upon the Owner's approval of a Proposal Request, the Architect or Construction Manager will issue a Change Order for signatures of the Owner and the Contractor on AIA Form G701CMa.
SECTION 014000 COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. General project coordination procedures.
2. Conservation.
3. Coordination Drawings.
4. Administrative and supervisory personnel.
5. Cleaning and protection.

1.3 COORDINATION

A. The General Construction Single Prime Contractor shall coordinate construction operations included in all various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation. Following is also to be adhered too:

1. Schedule construction operations in the 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 assure maximum accessibility for required maintenance, service, and repair.
3. Make provisions to accommodate items scheduled for later installation.
4. Contractor is advised that Campus Activities could alter the Construction Schedule, student move in, student move out and graduation dates, (seven days per year) that the General Contractor will not be given an extension of time nor will not be entitled to delay.

B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Owner where coordination of their work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.
2. Installation and removal of temporary facilities.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project closeout activities.
PART 3 - EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. The General Contractor Single Prime shall submit a complete daily report to the Construction Manager daily. Report form will be provided at the award of the contract.

3.2 CLEANING AND PROTECTION

A. Clean and protect construction site and office trailers on a daily basis, including adjoining materials in place or not, during handling and installation on an everyday basis. Apply protective covering where required to assure protection from damage or deterioration.

B. Clean and provide maintenance on an everyday basis of the construction site and building. Adjust and lubricate operable components to assure operability without damaging effects.

C. 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.

END OF SECTION 014000
SECTION 014500 - QUALITY CONTROL

PART 1 - GENERAL

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

1.2 SUMMARY
A. This Section includes administrative and procedural requirements for quality-control services.

B. Quality-control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by Architect nor the Special Testing and Inspection Agent.

C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.

D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.

1. Specific quality-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 inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.

3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

E. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Cutting and Patching" specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.

1.3 RESPONSIBILITIES
A. With the exception of the Special Testing and Inspection Services of:
   Concrete
   Masonry
   Structural Steel
Single Prime General Contractor Responsibilities: Single Prime General Contractor shall employ and pay a testing agency to perform inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction. Costs for these services are included in the Contract Sum Bid Amount.

1. Where individual Sections specifically indicate that certain inspections, tests, and other quality control services are the Single Prime General Contractor's responsibility, the Single Prime General Contractor shall select the testing agency and Single Prime General Contractor shall employ and pay the qualified independent testing agency to perform quality-control services. Costs for these services are included in the Contract Sum Bid Amount.

B. Retesting: The Single Prime General Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.

1. The cost of retesting construction, revised or replaced by the Single Prime General Contractor, is the Single Prime General Contractor's responsibility where required tests performed on original construction indicated noncompliance with Contract Document requirements.

C. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:

1. Provide access to the Work.
2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
4. Provide facilities for storage and curing of test samples.
5. Deliver samples to testing laboratories.
6. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
7. Provide security and protection of samples and test equipment at the Project Site.

D. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.

1. The Single Prime General Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section “Cutting and Patching.”
B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.

C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION 014500
SECTION 01 50 00 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection to be furnished, installed, paid for and maintained by the Single Prime General Contractor.

B. Temporary utilities include, but are not limited to, the following:

1. Water service and distribution.
2. Temporary electric power and light.
3. Temporary heat and Temporary cooling.
4. Telephone service.
5. Sanitary facilities, including drinking water.
6. Storm and sanitary sewer.

C. Support facilities include, but are not limited to, the following:

1. Field offices and storage sheds, including a field office trailer with three (3) Office and a Meeting Room for the owner’s Construction Manager, (equipped with desk chairs, conference chairs, file cabinets, electric, water, toilet facilities, heating and cooling, telephone and cable connections with a conference table for twenty (20) seating, including seating.)
2. Temporary enclosures.
3. Project identification signs.
4. Waste disposal services.
5. Construction aids and miscellaneous services and facilities.
6. Logistic Site Fencing, 6 foot high with protective covering, securely anchored in the ground. Approval of such is by a Structural Engineer to be retained by the Single Prime General Contractor.
7. Site, construction and pedestrian signage for directional flow.

D. Security and protection facilities include, but are not limited to, the following:

1. Temporary fire protection.
2. Barricades, warning signs, and lights.
3. Environmental protection.
4. Full Time Site Security, during no on site working hours (3:30 PM to 7:00AM Monday through Friday) and over the entire Weekend of Saturday, Sunday and all Holidays. This is to occur at the Notice to Proceed date to Substantial Completion of the Building at the receipt of the Certificate to Occupy.
1.3 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

1. Building code requirements.
2. Health and safety regulations.
3. Utility company regulations.
4. Environmental protection regulations.


1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."

C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. General: Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.

B. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.

C. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

D. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures exposed to moisture.

E. Heating Units: Provide temporary heating units, 1 every 2,000 SF that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.

F. Temporary Offices: Provide prefabricated or mobile units with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on supports adequate for normal loading. Provide separate mobile unit for the owner's Construction Manager toilet facilities, heating and cooling, data, electrical and telephone connections. CM trailer is to be on site for the duration of construction and be large enough to accommodate three (3) staff with a twenty (20) person conference area. Cost of Temporary Offices is by the Single Prime General Contractor. Temporary Office is to be cleaned once a week, with trash
emptied daily by the Single Prime General Contractor and include hand cleaning, paper towels, toilet paper with water connections. Provide Potable Water Device for hot and cold usage.

G. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material. Provide paper and soap products with water source.

H. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

PART 3 - EXECUTION

3.1 TEMPORARY UTILITY INSTALLATION

A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Use Charges: are to be secured and paid for by the Single Prime General Contractor.

B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.

1. Sterilization: Sterilize temporary water piping prior to use.

C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters, and main distribution switch gear.

D. Temporary Lighting: When overhead floor or roof deck has been installed, provide temporary lighting with local switching that includes, one (1) - 100 Watt Bulb Fixture every 75 foot in corridors and one (1) - 100 Watt Bulb Fixture in every 100 SF of room area.

1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic condition, interior and exterior.

2. Install exterior temporary lighting by way of high reach set up, 25 feet above grade, to adequately light the construction staging, construction office and trailer locations along with the area around all perimeter of the RCOE Building.

E. Temporary Heat: Provide temporary heating and cooling required by construction activities for installing, curing or drying of completed installations, for protection of manpower and of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
F. Heating Facilities: Except where the Owner authorizes use of the permanent system, provide vented, self-contained, LP-gas or fuel-oil heaters with individual space thermostatic control.

   1. Use of gasoline-burning space heaters, open flame, or salamander heating units is prohibited.

G. Temporary Telephones and Internet Service: Provide temporary telephone and internet service throughout the construction period for the owner’s construction manager activities. Install telephone and internet on a separate line for each temporary office.

H. Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project’s needs.

I. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.

   1. Provide separate facilities for male and female personnel.

J. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

3.2 SUPPORT FACILITIES INSTALLATION

A. Locate field offices, storage sheds, and other temporary construction and support facilities for easy access.

   1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.

B. Field Offices: Provide insulated, weather tight temporary offices of sufficient size to accommodate required office personnel at the Project Site. Keep the offices clean on a daily basis and orderly for use for small progress meetings.

C. Temporary Paving: to be provided by Single Prime General Contractor where indicated by Owner. Additional areas required for contractors convenience to be provided by general contractor.

D. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.

   1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

   2. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.

E. Project Identification and Temporary Signs: Prepare project identification and other signs of size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.
F. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere on a daily basis. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Separate and recycle metals, glass, plastics, clean paper and building materials. Dispose of material lawfully.

3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Architect.

B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."

1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than three (3) extinguishers on each floor with additional fire extinguishers at or near each usable stairwell.
2. Store combustible materials in containers in fire-safe locations.
3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

D. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

2. General Contractor is to provide Full Time Site and Building Security - 3:30 PM to 7:00 AM, each work day Monday through Friday and from 3:30 PM to 7:00 AM from Friday Afternoon, continuous to Monday Morning, from the Notice to Proceed through the Substantial Completion Date of the RCOE Building. The entire site fence surface shall be covered with barrier fabric, 6 feet high.

E. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.
3.4 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
   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.
   2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, when 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 the 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 the Contractor's property. The Owner reserves the right to take possession of project identification signs.
   2. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
      a. Replace air filters and clean inside of ductwork and housings.
      b. Replace significantly worn parts and parts subject to unusual operating conditions.
      c. Replace lamps burned out or noticeably dimmed by hours of use.
   3. Coordinate restoration of permanent construction at completion of project.

END OF SECTION 015000
SECTION 016000 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

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

1.2  SUMMARY
A. This Section includes administrative and procedural requirements governing the Contractor's
   selection of products for use in the Project.
B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 1 Section "Submittals" specifies requirements for submittal of the Contractor's
      Construction Schedule.
   2. Division 1 Section "Substitutions" specifies administrative procedures for handling
      requests for substitutions made after award of the Contract.

1.3  DEFINITIONS
A. Definitions used in this Article are not intended to change the meaning of other terms used in the
   Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories,"
   and similar terms. Such terms are self-explanatory and have well-recognized meanings in the
   construction industry.
   1. "Products" are items purchased for incorporation in the Work, whether purchased for the
      Project or taken from previously purchased stock. The term "product" includes the
      terms "material," "equipment," "system," and terms of similar intent.
   2. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or
      otherwise fabricated, processed, or installed to form a part of the Work.
   3. "Equipment" is a product with operational parts, whether motorized or manually
      operated, that requires service connections, such as wiring or piping.

1.4  QUALITY ASSURANCE
A. Source Limitations: To the fullest extent possible, provide products of the same kind from a
   single source.
B. Compatibility of Options: When the Contractor is given the option of selecting between 2 or
   more products for use on the Project, the product selected shall be compatible with
   products previously selected, even if previously selected products were also options.
C. Nameplates: Except for required labels and operating data, do not attach or imprint
   manufacturers or producer's nameplates or trademarks on exposed surfaces of products
   that will be exposed to view in occupied spaces or on the exterior.
1.5  PRODUCT DELIVERY, STORAGE, AND HANDLING

A.  Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
2. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
3. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
4. Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1  PRODUCT SELECTION

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

1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.

B. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:

1. Proprietary Specification Requirements: Where Specifications name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted.
2. Semi proprietary Specification Requirements: Where Specifications name 2 or more products or manufacturers, provide 1 of the products indicated. No substitutions will be permitted.
3. Nonproprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements only at time of the bid for review. Substitutions after the bid award will not be permitted.

PART 3 - EXECUTION

3.1  INSTALLATION OF PRODUCTS

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

END OF SECTION 016000
SECTION 016300 – SUBSTITUTIONS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section “Reference Standards and Definitions” specifies the applicability of industry standards to products specified.
2. Division 1 Section “Submittals” specifies requirements for submitting the Contractor’s Construction Schedule and the Submittal Schedule.
3. Division 1 Section “Materials and Equipment” specifies requirements governing the Contractor’s selection of products and product options.

1.3 SUBMITTALS

A. Substitution Request Submittal: The Architect will consider requests for substitution if received within the time of the bidding period only. After receipt of bids, substitutions will not be considered and rejected.

1. Submit 3 copies of each request for substitution for consideration at time of bidding. Submit requests in the form and according to procedures required for change-order proposals.
2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
3. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
   a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors that will be necessary to accommodate the proposed substitution.
   b. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.
   c. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
   d. Samples, where applicable or requested.
   e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
   f. Cost information, including a proposal of the net change, if any in the Contract Sum.
   g. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.
h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

4. Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. The Architect will notify the Contractor of acceptance or rejection of the substitution within 2 weeks of receipt of the request, or one week of receipt of additional information or documentation, whichever is later. Acceptance will be in the form of a change order.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitution request will only be reviewed at the time of bidding. The Architect will receive and consider the Contractor's request for substitution only when requested during the bidding period, not after the receipt of bids. If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.

1. Extensive revisions to the Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of the Contract Documents.
3. The request is timely, fully documented, and properly submitted at time of bid period.
4. The specified product or method of construction cannot be provided within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
5. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
6. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner's additional responsibilities may include compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 63 00
SECTION 017000 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:
   1. Inspection procedures.
   2. Project record document submittal by way of PDF and hard copy.
   3. Operation and maintenance manual submittal by way of PDF and hard copy.
   4. Submittal of warranties.
   5. Final cleaning.

B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
   1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.
      a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
      b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
   2. Advise the Owner of pending insurance changeover requirements.
   3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
   4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
   5. Submit record drawings, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.
   6. Deliver tools, spare parts, extra stock, and similar items.
   7. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
   8. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
   9. Complete final cleanup requirements, including touchup painting.
   10. Touch up and otherwise repair and restore marred, exposed finishes.
B. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Architect will repeat inspection when requested and assured that the Work is substantially complete.
2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, endorsed and dated by the Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Architect.
4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.
5. Submit consent of surety to final payment.
6. Submit a final liquidated damages settlement statement.
7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Re-inspection Procedure: The Architect will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Architect.

1. Upon completion of re-inspection, the Architect will prepare a certificate of final acceptance. If the Work is incomplete, the Architect will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, re-inspection will be repeated.

1.5 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Architect's reference during normal working hours.

B. Record Drawings (BIM): Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
2. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.
3. Note related change-order numbers where applicable.
4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.

C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Include with the Project Manual one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.
1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
3. Note related record drawing information and Product Data.
4. Upon completion of the Work, submit record Specifications to the Architect for the Owner's records.

D. Record Product Data (PAPER AND PDF): Maintain one copy of each Product Data submittal. Note related Change Orders and markup of record drawings and Specifications.
1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.
3. Upon completion of markup, submit complete set of record Product Data to the Architect for the Owner's records.

E. Maintenance Manuals (PAPER AND PDF): Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-inch (51-mm), 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
1. Emergency instructions.
2. Spare parts list.
4. Wiring diagrams.
5. Recommended "turn-around" cycles.
6. Inspection procedures.
7. Shop Drawings and Product Data.
8. Fixture lamping schedule.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION
3.1 CLOSEOUT PROCEDURES

A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Operation and Maintenance Training shall be videotaped at the cost by the Single Prime General Contractor to be included in the Base Bid. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools
5. Lubricants.
6. Fuels.
7. Identification systems.
8. Control sequences.
9. Hazards.
10. Cleaning.
11. Warranties and bonds.
12. Maintenance agreements and similar continuing commitments.

B. As part of instruction for operating equipment, demonstrate the following procedures shall be videotaped during presentation:

1. Startup.
2. Shutdown.
3. Emergency operations.
5. Safety procedures.
7. Effective energy utilization.

3.2 FINAL CLEANING

A. General: The General Conditions require general cleaning during construction. Regular site cleaning is included in Division 1 Section "Construction Facilities and Temporary Controls."

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
   a. Remove labels that are not permanent labels.
   b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
   c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
   d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
e. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.

2. Complete the following cleaning operations before requesting Final Completion, Certificate to Occupy:
   a. Clean and polish all interior surfaces of walls, floors, doors, windows, casework, fixtures per manufacturer’s recommendation.
   b. Clean and wash all exterior windows, and exterior fixtures per manufacturer’s recommendation.

C. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner’s property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.

1. Where extra materials of value remain after completion of associated Work, they become the Owner’s property. Dispose of these materials as directed by the Owner.

END OF SECTION 017000
SECTION 017320 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
   1. Demolition and removal of selected portions of a building or structure.
   2. Demolition and removal of selected site elements.
   3. Repair procedures for selective demolition operations.

B. Related Sections include the following:
   1. Division 1 Section "Summary" for use of the premises and phasing requirements.
   2. Division 1 Section "Cutting and Patching" for cutting and patching procedures for selective demolition operations.
   3. Division 15 Sections for demolishing, cutting, patching, or relocating mechanical items.
   4. Division 16 Sections for demolishing, cutting, patching, or relocating electrical items.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
B. Pre-demolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.

C. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Professional Engineer Qualifications: Comply with Division 1 Section "Quality Requirements."

C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Standards: Comply with ANSI A10.6 and NFPA 241.

E. Pre-demolition Conference: Conduct conference at Project site. Review methods and procedures related to selective demolition.

1.7 PROJECT CONDITIONS

A. Owner assumes no responsibility for condition of areas to be selectively demolished.

1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

C. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

A. Use repair materials identical to existing materials.

1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

2. Use materials whose installed performance equal or surpasses that of existing materials.

B. Comply with material and installation requirements specified in individual Specification Sections.
PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

E. 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 during selective demolition operations.

F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.

B. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utilities serving areas to be selectively demolished.

1. If utility services are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary utilities that bypass area of selective demolition and maintain continuity of service to other parts of building.

2. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

C. Utility Requirements: Refer to Division 15 and 16 Sections for additional information regarding shutting off, disconnecting, removing, and sealing or capping utilities. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.3 PREPARATION

A. Dangerous Materials: Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.

B. Pest Control: Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during selective demolition operations.

C. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

2. Protect existing site improvements, appurtenances, and landscaping to remain.

D. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

2. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

E. Temporary Shoring: Provide and maintain shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.4 POLLUTION CONTROLS

A. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit spread of dust and dirt. Street Clean on an everyday basis, the area shown on the Logistic Plan. Comply with governing environmental-protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

2. Wet mop floors to eliminate tractable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.

B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

C. Cleaning: Street clean adjacent streets and parking lots, at a minimum of once per day from the start of the Construction of the RCOE, at the Notice to Proceed until substantial completion of the RCOE Building.

3.5 SELECTIVE DEMOLITION

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.

5. Maintain adequate ventilation when using cutting torches.

6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.

7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.

8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

9. Dispose of demolished items and materials promptly.

10. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.

B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

C. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.

D. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

E. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

F. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP.

1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.

G. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

3.6 PATCHING AND REPAIRS

A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.

B. Patching: Comply with Division 1 Section "Cutting and Patching."

C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

1. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to manufacturer's written recommendations.

D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.
E. Floors and Walls: Where walls or partitions that are demolished 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 existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

1. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
2. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.
3. Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

END OF SECTION 017320
SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:

1. Division 1 Section "Selective Demolition" for demolition of selected portions of the building for alterations.

1.3 DEFINITIONS

A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections of these Specifications.

B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
   1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

3.2 PREPARATION
A. Temporary Support: Provide temporary support of Work to be cut.
B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
D. Existing Services: Where existing services are required to be removed, relocated or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

3.3 PERFORMANCE
A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut existing construction to provide for installation of other components of performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
B. Cutting: Cut existing 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 as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
   2. Existing 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 in applicable Division 2 Sections 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.
C. 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 possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate 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 eliminate evidence of patching and refinishing.

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 existing 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, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

END OF SECTION 017329
SECTION 017820 – CLOSEOUT SUBMITTALS

PART 1 - GENERAL

1.1 SECTION INCLUDES
   A. Project Record Documents.
   B. Operation and Maintenance Data.

1.2 RELATED REQUIREMENTS
   A. Individual Product Sections: Specific requirements for operation and maintenance data.

1.3 SUBMITTALS
   A. Project Record Documents:
      B. Operation and Maintenance Data in Paper and PDF Form with Tabs:
         1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
         2. For equipment, or component parts of equipment put into service during construction and operated by Gloucester County, submit completed documents within ten days after acceptance.
         3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection. Revise content of all document sets as required prior to final submission.
         4. Submit two sets of revised final documents in final form within 10 days after final inspection.

PART 2 PRODUCTS - NOT USED

PART 3 - EXECUTION

3.1 PROJECT RECORD DOCUMENTS in Paper and PDF Format:
   A. Maintain on site one set of the following record documents; record actual revisions to the Work:
      1. Drawings.
      2. Specifications.
      3. Addenda.
      4. Change Orders and other modifications to the Contract.
      5. Reviewed shop drawings, product data, and samples.
      6. Manufacturer's instruction for assembly, installation, and adjusting.
   B. Ensure entries are complete and accurate, enabling future reference by Rowan University.
   C. Store record documents separate from documents used for construction.
   D. Record information concurrent with construction progress.
   E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
      1. Changes made by Addenda and modifications.
   F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
      1. Field changes of dimension and detail.
      2. Details not on original Contract drawings.

3.2 OPERATION AND MAINTENANCE DATA
   A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.3 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES PAPER AND PDF FORMAT

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

3.4 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

C. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

D. Provide servicing and lubrication schedule, and list of lubricants required.

E. Include manufacturer's printed operation and maintenance instructions.

F. Include sequence of operation by controls manufacturer.

G. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

H. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

I. Include test and balancing reports.

J. Additional Requirements: As specified in individual product specification sections.

3.5 OPERATION AND MAINTENANCE MANUALS

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

B. Prepare data in the form of an instructional manual.

C. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.
   2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
a. Significant design criteria.
b. List of equipment.
c. Parts list for each component.
d. Operating instructions.
e. Maintenance instructions for equipment and systems.
f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.

3. Part 3: Project documents and certificates, including the following:
   a. Shop drawings and product data.

D. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
SECTION 017836 - WARRANTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.

1. Refer to the General Conditions for terms of the Contractor's period for correction of the Work.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Submittals" specifies procedures for submitting warranties.
2. Division 1 Section "Contract Closeout" specifies contract closeout procedures.
3. Divisions 2 through 16 Sections for specific requirements for warranties on products and installations specified to be warranted.
4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

D. Separate Prime Contracts: Each prime contractor is responsible for warranties related to its own contract.

1.3 DEFINITIONS

A. Standard product warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.

B. Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

D. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.

   1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

E. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.

   1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within 15 days of completion of that designated portion of the Work.

B. When the Contract Documents require the Contractor, or the Contractor and a subcontractor, supplier or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner, through the Architect, for approval prior to final execution.

C. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Submit a draft to the Owner, through the Architect, for approval prior to final execution.

   1. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

D. Form of Submittal: At Final Completion compile 2 copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

   1. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor.
2. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

END OF SECTION 017836
SECTION 017900 – DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY
Training of Rowan University personnel in operation and maintenance is required for (Video Tape with Audio System and Deliver to the Owner on a Portable Drive):
1. All software-operated systems.
2. HVAC systems and equipment.
3. Plumbing equipment.
4. Electrical systems and equipment.
5. Items specified in individual product Sections.

B. Training of Rowan University personnel in care, cleaning, maintenance, and repair is required for:
1. Fixtures and fittings.
2. Items specified in individual product Sections.

1.2 RELATED REQUIREMENTS
A. Section 01780 - Closeout Submittals: Operation and maintenance manuals.

1.3 SUBMITTALS
A. Training Plan: Rowan University will designate personnel to be trained; tailor training to needs and skill-level of attendees.
1. Submit to the Architect for transmittal to Rowan University.
2. Submit not less than four weeks prior to start of training.
3. Revise and resubmit until acceptable.
4. Provide an overall schedule showing all training sessions.
5. Include at least the following for each training session:
a. Identification, date, time, and duration.
b. Description of products and/or systems to be covered.
c. Name of firm and person conducting training; include qualifications.
d. Intended audience, such as job description.
e. Objectives of training and suggested methods of ensuring adequate training.
f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
g. Media to be used, such as slides, hand-outs, etc.
h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.

B. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
1. Include applicable portion of O&M manuals.
2. Include copies of all hand-outs, slides, overheads, video presentations, etc... that are not included in O&M manuals.
3. Provide one extra copy of each training manual to be included with operation and maintenance data.

1.4 QUALITY ASSURANCE
A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.
PART 3 EXECUTION

3.1 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Rowan University.

B. Demonstrations conducted during Functional Testing need not be repeated unless Rowan University personnel training is specified.

C. Demonstration may be combined with Rowan University personnel training if applicable.

D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.
   2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.2 TRAINING - GENERAL

A. Commissioning Authority will prepare the Training Plan based on draft plans submitted.

B. Conduct training on-site unless otherwise indicated.

C. Rowan University will provide classroom and seating at no cost to Contractor.

D. Do not start training until Functional Testing is complete, unless otherwise specified or approved by the Commissioning Authority.

E. Provide training in minimum two hour segments.

F. The Commissioning Authority is responsible for determining that the training was satisfactorily completed and will provide approval forms.

G. Training schedule will be subject to availability of Rowan University’s personnel to be trained; re-schedule training sessions as required by Gloucester County; once schedule has been approved by Rowan University failure to conduct sessions according to schedule will be cause for Rowan University to charge Contractor for personnel “show-up” time.

H. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
   1. The location of the O&M manuals and procedures for use and preservation; backup copies.
   2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
   3. Typical uses of the O&M manuals.

I. Product- and System-Specific Training:
   1. Review the applicable O&M manuals.
   2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
   3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
   4. Provide hands-on training on all operational modes possible and preventive maintenance.
   5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
   6. Discuss common troubleshooting problems and solutions.
   7. Discuss any peculiarities of equipment installation or operation.
8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
9. Review recommended tools and spare parts inventory suggestions of manufacturers.
10. Review spare parts and tools required to be furnished by Contractor.
11. Review spare parts suppliers and sources and procurement procedures.

J. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION 017900
SECTION 04 2000 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Work Included: The Work of this Section includes, but is not limited to the following:

1. Concrete masonry units.
2. Concrete building brick.
3. Mortar and grout.
4. Steel reinforcing bars.
5. Masonry joint reinforcement.
6. Miscellaneous masonry accessories.

1.3 DEFINITIONS

A. CMU(s): Concrete masonry unit(s).

B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1. Determine net-area compressive strength of masonry by testing masonry prisms according to ASTM C 1314

1.4 PERFORMANCE REQUIREMENTS

A. Provide structural unit masonry that develops indicated net-area compressive strengths at 28 days.

1. Determine net-area compressive strength of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

2. Determine net-area compressive strength of masonry by testing masonry prisms according to ASTM C 1314.

1.5 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing indicated below. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

1. The following Level 1 Periodic Inspections shall be performed:

   b. Mixing of Mortar and Grout - Verify general conformance with specifications.
   c. Installation of Masonry - Verify general conformance with specifications.
   d. Reinforcement Installation - Inspect 50 percent of reinforced steel installed in CMU.
   e. Grouting Operations - Inspect 50 percent of grouting procedure.
g. Anchors and Ties - Inspect 50 percent of installation to insure complete and proper installation.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For the following:
   1. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.

C. Samples for Verification: For each type and color of the following:
   1. Ground-faced block.
   2. Pigmented mortar. Make Samples using same sand and mortar ingredients to be used on Project.
   3. Accessories embedded in masonry.

1.7 INFORMATIONAL SUBMITTALS

A. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.

   1. Submittal is for information only. Neither receipt of list nor approval of mockup constitutes approval of deviations from the Contract Documents unless such deviations are specifically brought to the attention of Architect and approved in writing.

B. Material Certificates: For each type and size of the following:

   1. Masonry units.
      a. Include material test reports substantiating compliance with requirements.
   2. Cementitious materials. Include brand, type, and name of manufacturer.
   3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
   4. Grout mixes. Include description of type and proportions of ingredients.
   5. Reinforcing bars.
   7. Anchors, ties, and metal accessories.

C. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

   1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
   2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

D. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
E. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.8 QUALITY ASSURANCE

A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.

B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

C. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.

D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.9 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for use with dispensing silos. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in covered weatherproof dispensing silos.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.10 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

   1. Extend cover a minimum of 24 inches down both sides of walls and hold cover securely in place.
   2. Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.

B. Do not apply uniform loads for at least 12 hours and concentrated loads for at least three days after building masonry walls.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.


PART 2 - PRODUCTS

2.1 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.

B. See the drawings for additional requirements related to the materials and construction related to the reinforced masonry work.

2.2 CONCRETE MASONRY UNITS

A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.

1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
2. Provide square-edged units for outside corners unless otherwise indicated.

B. CMUs: ASTM C 90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2800 psi.
2. Density Classification: Normal weight unless otherwise indicated.
3. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.

2.3 CONCRETE AND MASONRY LINTELS

A. General: Provide one of the following, at the Contractor's option:

B. Concrete Lintels: ASTM C 1623, matching CMUs in color, texture, and density classification; and with reinforcing bars indicated. Provide lintels with net-area compressive strength not less than CMUs.
C. Concrete Lintels: Precast or formed-in-place concrete lintels complying with requirements in Division 03 Section "Cast-in-Place Concrete" and with reinforcing bars indicated.

D. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam CMUs with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.4 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: ASTM C 207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Aggregate for Mortar: ASTM C 144.
   1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
   2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
   3. White-Mortar Aggregates: Natural white sand or crushed white stone.
   4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.

E. Aggregate for Grout: ASTM C 404.

F. Water: Potable.

2.5 REINFORCEMENT

A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.

B. Masonry Joint Reinforcement, General: ASTM A 951/A 951M.
   1. Interior and Property Line Walls: Hot-dip galvanized, carbon steel.
   2. Exterior Walls: Stainless steel.
   5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
   6. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.

C. Masonry Joint Reinforcement for Single-Wythe Masonry: Either ladder or truss type with single pair of side rods.

2.6 MISCELLANEOUS ANCHORS

A. Unit Type Inserts in Concrete: Cast-iron or malleable-iron wedge-type inserts.

B. Anchor Bolts: Headed or L-shaped steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153/A 153M, Class C; of dimensions indicated.
2.7 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated neoprene, urethane or PVC.

B. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

C. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

D. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

1. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Diedrich Technologies, Inc.
   b. EaCo Chem, Inc.
   c. ProSoCo, Inc.

2.8 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Use portland cement-lime mortar unless otherwise indicated.
3. For reinforced masonry, use portland cement-lime.
4. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.

1. All mortar shall be Type N.
D. Grout for Unit Masonry: Comply with ASTM C 476.

   1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
   2. Proportion grout in accordance with ASTM C 476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi (14 MPa).
   3. Provide grout with a slump of 8 to 11 inches or 10 to 11 inches as required, and as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 EXAMINATION

   A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

      1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
      2. Verify that foundations are within tolerances specified.
      3. Verify that reinforcing dowels are properly placed.

   B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.

   C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

   A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.

   B. Build chases and recesses to accommodate items specified in this and other Sections.

   C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.

   D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

   E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

      1. Mix units from several pallets or cubes as they are placed.

3.3 TOLERANCES

   A. Dimensions and Locations of Elements:

      1. For dimensions in cross section or elevation do not vary by more than plus 1/2 inch or minus 1/4 inch.
      2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
5. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond, do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4-inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar if required before laying fresh masonry.

E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

F. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.

H. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.
   1. Install compressible filler in joint between top of partition and underside of structure above.
   2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch clearance between end of anchor rod and end of tube. Space anchors 48 inches o.c. unless otherwise indicated.
   3. Wedge non-load-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
   4. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Division 07 Section "Penetration Firestopping."

3.5 MORTAR BEDDING AND JOINTING

A. Lay hollow CMUs as follows:
   1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
   2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
   3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
   4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.

B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

3.6 MASONRY JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
   1. Space reinforcement not more than 16 inches o.c.
   2. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.

B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.
3.7 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

A. Anchor masonry to structural steel and concrete where masonry abuts or faces structural steel or concrete to comply with the following:

1. Provide an open space not less than 1/2 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 24 inches o.c. vertically and 36 inches o.c. horizontally.

3.8 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry using one of the following methods:

1. Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout and rake out joints in exposed faces for application of sealant.
2. Install preformed control-joint gaskets designed to fit standard sash block.

C. Form expansion joints in brick as follows:

1. Build flanges of metal expansion strips into masonry. Lap each joint 4 inches in direction of water flow. Seal joints below grade and at junctures with horizontal expansion joints if any.
2. Build flanges of factory-fabricated, expansion-joint units into masonry.
3. Form open joint full depth of brick wythe and of width indicated, but not less than 3/8 inch for installation of sealant and backer rod specified in Division 07 Section "Joint Sealants."

D. Provide horizontal, pressure-relieving joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Division 07 Section "Joint Sealants," but not less than 3/8 inch.

1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry.

3.9 LINTELS

A. Install steel lintels where indicated.

B. Provide concrete or masonry lintels where shown and where openings 24 inches for block-size units are shown without structural steel or other supporting lintels.

C. Provide minimum bearing of 8 inches at each jamb unless otherwise indicated.

3.10 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.

1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
   1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
   2. Limit height of vertical grout pours to not more than 60 inches.

3.11 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner may engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

B. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.

C. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C 140 for compressive strength.

D. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.

E. Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for mortar air content and compressive strength.

F. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019

3.12 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
   1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
   2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
   3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
6. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

3.13 MASONRY WASTE DISPOSAL

A. Excess Masonry Waste: Remove excess clean masonry waste and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 04 2000
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Work Included: Provide rough carpentry work as specified and as shown on the Drawings, including the following:

1. Wood grounds, nailers, blocking and furring.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's specifications and installation instructions for manufactured materials, including plywood construction panels and related materials.

B. Sustainable Submittal:

1. Chain-of-custody certificates indicating that products specified to be made from certified wood comply with forest certification requirements. Include documentation that manufacturer is certified for chain of custody by an FSC-accredited certification body. Include statement indicating cost for each certified wood product.

C. Wood Treatment Data: Submit chemical treatment manufacturer's instructions for handling, storing, and using treated material.

1. Submit certification by treating plant stating type of treatment, preservative retained and conformance with applicable standards.

2. Submit a statement that moisture content of treated materials complied with levels indicated before delivery.

1.4 QUALITY ASSURANCE

A. Source Limitations for Engineered Wood Products: Obtain each type of engineered wood product through one source from a single manufacturer.

1.5 PRODUCT HANDLING

A. Delivery and Storage: Keep materials under cover and dry. Stack wood to provide air circulation within and around stacks.

1.6 PROJECT CONDITIONS

A. Coordination: Fit carpentry work to other work accurately. Correlate location of rough carpentry for attachment of other work.
PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

A. Certified Wood: 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".

B. Lumber Standards: Comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee.

C. Grade Stamps: Furnish lumber with grade stamp of inspection agency to show compliance with grading rules, and identifying grading agency, grade, species, moisture content and mill.

D. Provide lumber sizes as required by PS 20, unless otherwise shown.
   1. Provide dressed lumber, S4S.
   2. Provide seasoned lumber with 15% maximum moisture content.

2.2 MISCELLANEOUS LUMBER

A. General: Provide wood for support or attachment of other work including cant strips, bucks, nailers, blocking, furring, grounds, stripping and similar members of sizes and shapes shown.

B. Grade: Construction Grade lumber of western or southern species.

2.3 PLYWOOD PANELS

A. Plywood Standards: Comply with PS 1 "U.S. Product Standard for Construction and Industrial Plywood" for plywood construction panels and, for products not made under PS 1 provisions, with APA PRP-108.
   1. Composite wood manufacturer's product data for each composite wood product used indicating that the bonding agent contains no urea formaldehyde.
   2. Adhesive manufacturer's product data for each adhesive used indicating that the adhesive contains no urea formaldehyde.
      a. Low VOC: All adhesives shall comply with South Coast Air Quality Management District (SCAQMD) Rule #1168.

B. Trademark: Factory-mark each construction panel with APA trademark to show compliance with grade requirements.

C. Plywood Backing Panels: For mounting electrical, telephone, or other equipment, provide fire-retardant-treated plywood panels with grade designation, APA C-D PLUGGED EXPOSURE 1, in thickness indicated, or, if not otherwise indicated, not less than 1/2 inch or as required.

2.4 MISCELLANEOUS MATERIALS

A. Fasteners and Anchorages: Provide size, type, material and finish complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers, anchors and connectors of the size and type recommended by the manufacturer for each use indicated including recommended nails.
1. Where rough carpentry work is exposed to weather, within exterior construction (such as roofing and exterior masonry and wall construction, or in area of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A 153).
2. Provide galvanized steel connectors, minimum 16 gage, of type and size as recommended by manufacturer for uses indicated.
3. At all wood preservative treated wood use stainless steel, type 304, fasteners and anchors.

B. Building Paper: ASTM D 226, Type I; asphalt saturated organic felt, non-perforated, 15-lb. type.

2.5 WOOD TREATMENT BY PRESSURE PROCESS

A. Preservative Treatment: Comply with applicable requirements of AWPA Standards C2 (Lumber) and C9 (Plywood) and of AWPB Standards listed below. Mark each treated item with the AWPB Quality Mark.

1. Pressure-treat above-ground items with water-borne preservatives to comply with AWPB LB-2. After treatment, kiln-dry lumber and plywood to 15% maximum moisture content. Treat the following:
   a. Wood cants, nailers, curbs, blocking and stripping in connection with exterior wall construction roofing, flashing and waterproofing.
   b. Wood sills, blocking, furring, stripping and similar concealed members in contact with masonry or concrete.

2. Complete fabrication of treated items prior to treatment, where possible. Coat field cut surfaces with heavy brush coat of same chemical used for treatment and to comply with AWPA M4.

B. Fire-Retardant Treatment: Treat all interior wood and wood products indicated or required by Code to be fire-retardant, using methods accepted by the New Jersey Building Code. Identify treated lumber with appropriate marking.

1. Nonbearing partitions where the required fire-resistance rating is 2 hours or less.
2. Nonbearing exterior walls where no fire rating is required.
3. Roof construction, including girders, trusses, framing and decking.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Discard defective materials. Set carpentry work to required levels and lines, with members plumb and true to line and cut and fitted.

B. Securely attach carpentry work as required by specified standards. Countersink nail heads on exposed carpentry work and fill holes.

C. Use fasteners of size to not penetrate members to exposed side or into finish materials. Make tight connections; install fasteners without splitting of wood; predrill as required.

D. Provide concealed blocking, sheet metal grounds and additional items as necessary and as indicated on the Drawings.
3.2 WOOD GROUNDS, NAILERS, SLEEPERS, AND BLOCKING

A. Provide where shown for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.

B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated. Where possible, anchor to concrete and masonry during their installation.

C. Provide permanent grounds of dressed, preservative treated, key-beveled lumber not less than 1-1/2 inch wide and of thickness to match finish material. Remove temporary grounds when no longer required.

3.3 INSTALLATION OF PLYWOOD PANELS


B. Fastening Methods: Anchor to wall construction. Using anchors and fasteners appropriate to the substrate construction. At gypsum board construction fasten to studs. At masonry construction use masonry anchors.

END OF SECTION 061000
SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Work Included: The Work of this Section shall include, but not be limited to, the following:

1. Exterior and interior joint sealants including as specified and as shown on the Drawings.

1.03 RELATED SECTIONS

A. Refer to the Contract Documents for related Specifications Sections which interface with, and are affected by the Work of this Section, provide all required coordination to ensure completion of the Work of this Section and the Work of other Sections affected by this Work.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer’s technical data for each product required, including instructions for preparation and application.

1. Manufacturers’ product data for interior sealants, including printed statement of VOC content.

B. Samples: Submit manufacturer's standard bead samples consisting of strips of actual products showing full range of colors available.

C. Test Reports: Submit joint sealer-substrate test results to verify compatibility of proposed joint sealants with substrates.

D. Certificates: Submit certificates from manufacturers that their products comply with specifications and are suitable for the use indicated.

E. Mock-Ups: Install in-place samples of sealants as directed by Architect. Do not proceed with work until Mock-ups are accepted by Architect.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: One who has successfully completed within the last 5 years at least 5 similar joint sealant applications?

B. Source for Materials: Obtain joint sealer materials from a single manufacturer for each different product.

C. Preconstruction Field Tests: Prior to installation of joint sealants, field-test adhesion to joint substrates as recommended in ASTM C 1193.

1. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.
1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original unopened containers with labels indicating manufacturer, expiration date, and other pertinent data.

B. Store and handle materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.07 PROJECT CONDITIONS

A. Environmental Conditions: Do not install joint sealants when air and surface temperatures are outside the limits permitted by joint sealer manufacturer, or when joint substrates are wet or dirty.

B. Joint Widths: Do not proceed with installation of joint sealants when joint widths are not as allowed by joint sealer manufacturer.

1.08 WARRANTY

A. Submit a warranty to repair or replace defective joint sealer materials or workmanship; including staining, loss of adhesion, loss of cohesion, cracking or discoloration, for a period of 5 years from the date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, joint fillers and related materials that are compatible with one another and with joint substrates, as demonstrated by testing and field experience.

B. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Architectural sealants shall have a VOC content of 250 g/L or less.
2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 250 g/L or less.
3. Sealants and sealant primers for nonporous substrates shall have a VOC content of 775 g/L or less.

C. Colors: Provide colors of joint sealants as selected by the Architect, from manufacturer's full range of colors.

2.02 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealant Standard: Comply with ASTM C 920.

B. One-Part Non-Acid-Curing Silicone Sealant: Type S; Grade NS; Class 25; Medium modulus and complying with the following requirements:

1. Uses: For all exterior vertical joints except as otherwise indicated.
2. Additional Capability: When tested per ASTM C 719, to withstand 50 percent increase and decrease of joint width.
3. Basis of design product: subject to compliance with requirements, provide the following one-part non-acid-curing silicone sealant:
a. "Dow Corning 790"; Dow Corning Corp., or equivalent.

4. Color to be selected from the manufacturer’s full line of colors.

C. One-Part Mildew-Resistant Silicone Sealant: Type S; Grade NS; Class 25; Uses: Non-traffic, formulated with fungicide for sealing interior joints with nonporous substrates at vertical and horizontal surfaces of ceramic tile in toilets, kitchens and between plumbing fixtures and tile.

1. Basis of design product: subject to compliance with requirements, provide the following mildew-resistant sealant.
   a. "Dow Corning 786"; Dow Corning Corp., or equivalent.

2. Color to be selected from the manufacturer’s full line of colors.

D. Two-Part Pourable Urethane Sealant: Type M; Grade P; Class 25; Uses: Traffic, for floor joints and exterior pavements.

1. Basis of design product: subject to compliance with requirements, provide the following product:

2. Color to be selected from the manufacturer’s full line of colors.

2.03 LATEX JOINT SEALANTS

A. Acrylic-Emulsion Sealant: One part, nonsag sealant complying with ASTM C 834, paintable and recommended for interior, non-wet areas, applications with joint movement of not more than plus or minus 5 percent. Subject to compliance with requirements, provide the following:

1. "Chem-Calk 600"; Bostik Construction Products Div., or equivalent.

B. Color to be selected from the manufacturer’s full line of colors.

2.04 MISCELLANEOUS JOINT SEALANTS

A. Butyl-Polyisobutylene Sealant: Manufacturer’s standard, solvent-release-curing, butyl-polyisobutylene sealant complying with AAMA 809.2, for concealed metal to metal joints.

2.05 JOINT SEALANT BACKING

A. General: Provide backings which are non-staining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer.

B. Plastic Foam Joint-Fillers: Preformed, compressible, resilient, non-waxing, non-extruding strips of plastic foam of material indicated below, and of size, shape and density to control sealant depth.

1. Either flexible, open cell polyurethane foam or non-gassing, closed-cell polyethylene foam, unless otherwise indicated.
C. Tubing Joint-Fillers: Neoprene, EPDM or silicone tubing complying with ASTM D 1056, non-absorbent to water and gas, resilient at temperatures down to -26 deg F., of size and shape to provide a secondary seal.

D. Bond-Breaker Tape: Polyethylene tape or other plastic tape to prevent bond between sealant and materials at back of joint. Provide self-adhesive tape where applicable.

2.06 MISCELLANEOUS MATERIALS

A. Primer: Provide type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates, as determined from preconstruction joint sealer-substrate and field tests.

B. Cleaners: Provide non-staining cleaner of type acceptable to manufacturer of sealant and sealant backing materials.

C. Masking Tape: Provide non-staining, non-absorbent type compatible with joint sealants and to surfaces adjacent to joints.

D. Accessory Materials for Fire-Stopping Sealants: Provide accessory materials required for installation of fire-stopping sealants.

PART 3 - EXECUTION

3.01 INSPECTION

A. Inspect joints to receive joint sealants for compliance with requirements. Report conditions detrimental to joint sealant work. Proceed after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealer manufacturers and the following requirements:

1. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including water.
2. Clean porous joint substrate surfaces to produce a clean, sound substrate. Remove loose particles remaining from cleaning.
3. Remove laitance and form release agents from concrete.
4. Clean non-porous surfaces with cleaners which are not harmful to substrates or leave residues that may affect joint sealants.

B. Joint Priming: Prime all joint substrates to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond; not on adjoining surfaces.

C. Masking Tape: Mask adjoining surfaces which might be permanently stained or damaged by sealant or by cleaning required to remove sealant. Remove tape immediately after tooling without disturbing joint.

3.03 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint sealer manufacturers' printed installation instructions, except where more stringent requirements apply.

B. Elastomeric Sealant Installation Standard: Comply with ASTM C 1193 for use of joint sealants as applicable to conditions indicated.
C. Installation of Sealant Backings: Install sealant backings to produce the shapes and depths of sealants for optimum performance.
   1. Do not leave gaps between ends of joint-fillers.
   2. Do not stretch, twist, puncture or tear joint-fillers.
   3. Do not use absorbent joint-fillers which are wet.
   4. Install bond breaker tape where required to prevent third-side adhesion of sealant to back of joint.
   5. Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.

D. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting joint substrates, completely filling joints and providing uniform, cross-sectional shapes and depths for optimum sealant movement. Mask adjacent surfaces if necessary.

E. Tooling of Nonsag Sealants: Tool sealants to form smooth, uniform beads to eliminate air pockets and to ensure adhesion of sealant with sides of joint. Remove excess sealants from adjacent surfaces. Provide concave joint configuration per Figure 6A in ASTM C 1193.

F. Installation of Preformed Foam Sealants: Comply with manufacturer's directions, to produce seal continuity at ends, turns, and joints.

3.04 FIELD QUALITY CONTROL

A. Testing Service: Owner will engage a qualified independent testing agency to perform field testing indicated below. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

B. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
   1. Extent of Testing: Test completed and cured sealant joints as follows:
      a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
      b. Perform one test for each 1000 feet of joint length thereafter or one test per each floor per elevation.
      a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
   3. Inspect tested joints and report on the following:
      a. Whether sealants filled joint cavities and are free of voids.
      b. Whether sealant dimensions and configurations comply with specified requirements.
      c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.
   4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether
joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.

5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

C. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.05 CLOSURE OF WORK

A. Coordinate the work of this Section with Special Inspections. Work shall remain open until completion of both inspections.

3.06 CLEANING

A. Clean off excess sealants or sealant smears as work progresses by methods and materials approved by manufacturers of joint sealants. Remove masking tape when no longer required.

3.07 PROTECTION

A. Protect joint sealants from contamination or damage, so that they are without deterioration or damage at time of Substantial Completion.

B. Remove damaged or defective joint sealants and reseal joints to match original work.

END OF SECTION 079200
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes

1. Standard hollow metal doors and frames.

1.3 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.4 COORDINATION

A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.

B. Shop Drawings: Include the following:

1. Elevations of each door type.
2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of anchorages, joints, field splices, and connections.
7. Details of accessories.
8. Details of moldings, removable stops, and glazing.
9. Details of conduit and preparations for power, signal, and control systems.

C. Samples for Verification:

1. For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches.
2. For "Doors" and "Frames" subparagraphs below, prepare Samples approximately 8 by 10 inches to demonstrate compliance with requirements for quality of materials and construction:
   a. Doors: Show vertical-edge, top, and bottom construction; core construction; and hinge and other applied hardware reinforcement. Include separate section showing glazing if applicable.
b. Frames: Show profile, corner joint, floor and wall anchors, and silencers. Include separate section showing fixed glazing if applicable.

D. Schedule: Provide a schedule of hollow-metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final Door Hardware Schedule.

1.6 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each type of hollow-metal door and frame assembly, for tests performed by a qualified testing agency.

1.7 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow-metal work from single source from single manufacturer.

B. Quality Standard: In addition to requirements specified, comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".

C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.

D. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Management and Coordination" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow-metal work palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.

1. Provide additional protection to prevent damage to factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow-metal work vertically under cover at Project site with head up. Place on minimum 4-inch- high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

1.9 PROJECT CONDITIONS

A. Field Measurements: Where required verify actual dimensions of openings by field measurements before fabrication.

1.10 COORDINATION

A. Coordinate installation of anchorages for stainless-steel frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
1.11 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Ceco Door Products; an Assa Abloy Group company.
2. Curries Company; an Assa Abloy Group company.
3. Steelcraft; an Ingersoll-Rand company.

2.2 HOLLOW METAL DOORS

A. General: Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8 and ANSI/NAAMM HMMA 867.

2.3 STANDARD HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.4 FRAME ANCHORS

A. Jamb Anchors:
1. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch-diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch, and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.5 DOOR AND FRAME MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

D. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.
1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

G. Glazing: Comply with requirements in Division 08 Section "Glazing."

H. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.6 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.

C. Hollow-Metal Doors:

1. Fire Door Cores: As required to provide fire-protection and temperature-rise ratings indicated.


3. Top Edge Closures: Close top edges of doors with inverted closures of same material as face sheets.

4. Bottom Edge Closures: Close bottom edges of doors with end closures or channels of same material as face sheets.

5. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.

6. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge strap for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware."

D. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.

2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.

   a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.

3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
4. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.

5. Jamb Anchors: Provide number and spacing of anchors as follows:

   a. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

      1) Three anchors per jamb up to 60 inches high.
      2) Four anchors per jamb from 60 to 90 inches high.
      3) Five anchors per jamb from 90 to 96 inches high.
      4) Five anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.

   b. Compression Type: Not less than two anchors in each frame.

   c. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.

6. Door Silencers: Drill stops to receive door silencers as follows. Keep holes clear during construction.

   a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.

   b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

E. Fabricate concealed stiffeners and edge channels from either cold- or hot-rolled steel sheet.

F. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

   1. Reinforce doors and frames to receive non-templated, mortised, and surface-mounted door hardware.

   2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

   3. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.
G. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.

1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.
2. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
3. Provide loose stops and moldings on inside of hollow-metal work.
4. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

2.7 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

2.8 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Prior to installation and with installation spreaders in place, adjust and securely brace stainless-steel door frames for squareness, alignment, twist, and plumb to the following tolerances:

1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
2. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
3. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.

C. Plumbness: Plus or minus 1/16 inch, measured at jambs on a perpendicular line from head to floor

D. Drill and tap doors and frames to receive non-templated, mortised, and surface-mounted door hardware.
3.3 INSTALLATION

A. General: Install hollow-metal work plumb, rigid, properly aligned, and securely fastened in place. Comply with Drawings and manufacturer's written instructions.

B. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 and 866 as required by standards specified.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
   a. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
   b. Install frames with removable stops located on secure side of opening.
   c. Remove temporary braces necessary for installation only after frames have been properly set and secured.
   d. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
   e. Field apply bituminous coating to backs of frames that will be filled with grout containing antifreezing agents.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.

   a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.

3. In-Place Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.

4. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

   a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
   b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
   c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
   d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

C. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Steel Doors:

   a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
   b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
   c. At Bottom of Door: 3/4 inch plus or minus 1/32 inch.
   d. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow-metal work immediately after installation.
C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

D. Factory-Finish Touchup: Clean abraded areas and repair with same material used for factory finish according to manufacturer's written instructions.

E. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 08 1113
SECTION 083600 - SECTIONAL OVERHEAD DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Insulated Sectional Overhead Doors.

1.2 RELATED SECTIONS
A. Section 042000 - Unit Masonry Assemblies: Prepared opening in masonry. Execution requirements for placement of anchors in masonry wall construction.
B. Section 079200 - Joint Sealers: Perimeter sealant and backup materials.
C. Section 087100 - Door Hardware: Cylinder locks.
D. Section 099100 - Paints and Coatings: Field painting.

1.3 REFERENCES

1.4 DESIGN / PERFORMANCE REQUIREMENTS
A. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

1.5 SUBMITTALS
A. Submit under provisions of Section 013100.
B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
C. Shop Drawings: Indicate plans and elevations including opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
D. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
E. Operation and Maintenance Data.

1.6 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
B. Installer Qualifications: Authorized representative of the manufacturer with minimum five years documented experience.
C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.
1.7 DELIVERY, STORAGE, AND HANDLING
   A. Store products in manufacturer's unopened labeled packaging until ready for installation.
   B. Protect materials from exposure to moisture until ready for installation.
   C. Store materials in a dry, ventilated weathertight location.

1.8 PROJECT CONDITIONS
   A. Pre-Installation Conference: Convene a pre-installation conference just prior to commencement of field operations, to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

1.9 WARRANTY
   A. Warranty: Manufacturer’s limited door and operators System warranty for 10 years against delamination of polystyrene foam from steel face and all other components for 1 year and covered under General Conditions of Contract.

PART 2 PRODUCTS

2.1 MANUFACTURERS
   A. Acceptable Manufacturer:
      1. Basis of Design: Overhead Door Corporation, 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 5 9-7100. Fax: (972) 90-1499.
      2. Clopay Building Products Company, 8585 Duke Blvd. ASD; Mason, OH 45040-3101; Toll Free Tel: 800-526-4301
      3. Raynor Worldwide, P.O. Box 448, 1101 East River Road, Dixon, IL 61021-0448 USA, 800-472-9667
      4. Or approved equal
   B. Requests for substitutions will be considered in accordance with provisions of Section 016300.

2.2 INSULATED SECTIONAL OVERHEAD DOORS
   A. Insulated Steel Sectional Overhead Doors: 470 Series Insulated Steel Doors by Overhead Door Corporation. Units shall have the following characteristics:
      1. Door Assembly: Rigid steel construction; fully insulated on the inside face with continuous steel backing on the inside face. Fabricated with steel end stiles and tongue and groove sections.
         a. Panel Thickness: 2 inches (51 mm).
         b. Exterior Surface: Ribbed.
         c. Exterior Steel: 26 gauge, hot-dipped galvanized with an embossed simulated wood grain texture.
         d. Interior Steel: 29 gauge, hot-dipped galvanized
         e. Springs: 25,000 cycles.
         f. Insulation: Polystyrene.
         g. Thermal Values:
            1) Polystyrene - R-value of 9.83; U-value of 0.102.
      2. Finish and Color: Two coat baked-on polyester. Color as follows:
         a. As selected from manufacturer's standard
3. Windload Design: Provide to meet the Design/Performance requirements specified.


5. Lock:
   a. Interior mounted slide lock.
   b. Interior mounted slide lock with interlock switch for automatic operator.
   c. Keyed lock.
   d. Keyed lock with interlock switch for automatic operator.
   e. Locking mechanism designed to maintain security for exterior while permitting break out when impacted from the inside.

6. Weatherstripping:
   a. Flexible bulb-type strip at bottom section.
   b. Flexible Jamb seals.
   c. Flexible Header seal.

7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.


10. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
   a. Entrapment Protection: Required for momentary contact, includes radio control operation.
      1) Pneumatic sensing edge up to 18 feet (5.5 m) wide. Constant contact only complying with UL 325/2010.
      2) Electric sensing edge monitored to meet UL 325/2010.
      3) Photoelectric sensors monitored to meet UL 325/2010.
   b. Operator Controls:
      1) Push-button operated control stations with open, close, and stop buttons.
      2) Key operated control stations with open, close, and stop buttons.
      3) Push-button and key operated control stations with open, close, and stop buttons.
      4) Flush mounting.
      5) Surface mounting.
      6) Interior location.
      7) Exterior location.
      8) Both interior and exterior location.
   c. Special Operation:
      1) Pull switch.
      2) Vehicle detector operation.
      3) Radio control operation.
      4) Card reader control.
      5) Photocell operation.
      6) Door timer operation.
      7) Commercial light package.
      8) Explosion and dust ignition proof control wiring.
PART 3 EXECUTION

3.1 EXAMINATION
A. Do not begin installation until openings have been properly prepared.
B. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.
C. Verify electric power is available and of correct characteristics.
D. If preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION
A. Clean adjacent surfaces thoroughly prior to installation.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION
A. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions.
B. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.
C. Anchor assembly to wall construction and building framing without distortion or stress.
D. Securely brace door tracks suspended from structure. Secure tracks to structural members only.
E. Fit and align door assembly including hardware.
F. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.

3.4 CLEANING AND ADJUSTING
A. Adjust door assembly to smooth operation and in full contact with weatherstripping.
B. Clean doors, frames, glass and polycarbonate according to manufacturer’s instructions.
C. Remove temporary labels and visible markings. Do not remove polycarbonate care and maintenance label required to maintain warranty.

3.5 PROTECTION
A. Do not permit construction traffic through overhead door openings after adjustment and cleaning.
B. Protect installed products until completion of project.
C. Touch-up, damaged coatings and finishes and repair minor damage before Substantial Completion.

END OF SECTION 083600

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SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

   A. Section includes:

       1. Mechanical and electrified door hardware for:

           a. Swinging doors.

   B. Exclusions: Unless specifically listed in hardware sets, hardware is not specified in this section for:

           1. Windows
           2. Cabinets (casework), including locks in cabinets
           3. Signage
           4. Toilet accessories
           5. Overhead doors

   C. Related Sections:

           1. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
           2. Division 09 sections for touchup finishing or refinishing of existing openings modified by this section.

1.3 REFERENCES

   A. Fire/Life Safety

       1. NFPA - National Fire Protection Association

           a. NFPA 70 – National Electric Code
           b. NFPA 80 - Standard for Fire Doors and Fire Windows
           d. NFPA 105 - Smoke and Draft Control Door Assemblies


   B. UL - Underwriters Laboratories

       1. UL 10B - Fire Test of Door Assemblies
       2. UL 10C - Positive Pressure Test of Fire Door Assemblies
       3. UL 1784 - Air Leakage Tests of Door Assemblies
       4. UL 305 - Panic Hardware
C. Accessibility
1. ADA - Americans with Disabilities Act.

D. DHI - Door and Hardware Institute
1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Key Systems and Nomenclature

E. ANSI - American National Standards Institute
1. ANSI/BHMA A156.1 - A156.29, and ANSI A156.31 - Standards for Hardware and Specialties

1.4 SUBMITTALS

A. General:
1. Submit in accordance with Conditions of Contract and Division 01 requirements.
2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
3. Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, “EXAMINATION” article, herein.

B. Action Submittals:
1. Product Data: Product data including manufacturers’ technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
   a. Wiring Diagrams: For power, signal, and control wiring and including:
      1) Details of interface of electrified door hardware and building safety and security systems.
      2) Schematic diagram of systems that interface with electrified door hardware.
      3) Point-to-point wiring.
      4) Risers.
3. Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.
   a. Samples will be returned to supplier in like-new condition. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
4. Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door
and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:

a. Door Index; include door number, heading number, and Architects hardware set number.
b. Opening Lock Function Spreadsheet: List locking device and function for each opening.
c. Type, style, function, size, and finish of each hardware item.
d. Name and manufacturer of each item.
e. Fastenings and other pertinent information.
f. Location of each hardware set cross-referenced to indications on Drawings.
g. Explanation of all abbreviations, symbols, and codes contained in schedule.
h. Mounting locations for hardware.
i. Door and frame sizes and materials.
j. Name and phone number for local manufacturer's representative for each product.
k. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include how door will operate on egress, ingress, and fire and smoke alarm connection.
   1) Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.

5. Key Schedule:

a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
b. Use ANSI A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
   1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory prepared for door hardware installation.

C. Informational Submittals:

1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
2. Product Certificates for electrified door hardware, signed by manufacturer:
   a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.

3. Certificates of Compliance:
a. Certificates of compliance for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.
b. Installer Training Meeting Certification: Letter of compliance, signed by Contractor, attesting to completion of installer training meeting specified in “QUALITY ASSURANCE” article, herein.
c. Electrified Hardware Coordination Conference Certification: Letter of compliance, signed by Contractor, attesting to completion of electrified hardware coordination conference, specified in “QUALITY ASSURANCE” article, herein.

4. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by qualified testing agency, for door hardware on doors located in accessible routes.

5. Warranty: Special warranty specified in this Section.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
   a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
   b. Catalog pages for each product.
   c. Name, address, and phone number of local representative for each manufacturer.
   d. Parts list for each product.
   e. Final approved hardware schedule, edited to reflect conditions as-installed.
   f. Final keying schedule
   g. Copies of floor plans with keying nomenclature
   h. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
   i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.5 QUALITY ASSURANCE

A. Product Substitutions: Comply with product requirements stated in Division 01 and as specified herein.

B. Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
4. Coordination Responsibility: Coordinate installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.
   a. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.

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C. Installer Qualifications: Qualified tradesmen, skilled in application of commercial grade hardware with record of successful in-service performance for installing door hardware similar in quantity, type, and quality to that indicated for this Project.

D. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:

1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
2. Can provide installation and technical data to Architect and other related subcontractors.
3. Can inspect and verify components are in working order upon completion of installation.
5. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.

E. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated.
2. Manufacturers that perform electrical modifications and that are listed by testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

F. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release latch. Locks do not require use of key, tool, or special knowledge for operation.

G. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in "REFERENCES" article, herein.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of wrist and that operate with force of not more than 5 lbf (22.2 N).
2. Maximum opening-force requirements:
   a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
   b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
   c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
3. Bevel raised thresholds with slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
4. Adjust door closer sweep periods so that, from open position of 70 degrees, door will take at least 3 seconds to move to 3 inches (75 mm) from latch, measured to leading edge of door.

K. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01.

2. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
   a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
   b. Preliminary key system schematic diagram.
   c. Requirements for key control system.
   d. Requirements for access control.
   e. Address for delivery of keys.

L. Pre-installation Conference: Conduct conference at Project site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Inspect and discuss preparatory work performed by other trades.
3. Inspect and discuss electrical roughing-in for electrified door hardware.
4. Review sequence of operation for each type of electrified door hardware.
5. Review required testing, inspecting, and certifying procedures.

M. Coordination Conferences:

1. Installation Coordination Conference: Prior to hardware installation, schedule and hold meeting to review questions or concerns related to proper installation and adjustment of door hardware.
   a. Attendees: Door hardware supplier, door hardware installer, Contractor.
   b. After meeting, provide letter of compliance to Architect, indicating when meeting was held and who was in attendance.

2. Electrified Hardware Coordination Conference: Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.
   a. Attendees: electrified door hardware supplier, doors and frames supplier, electrified door hardware installer, electrical subcontractor, Owner, Architect and Contractor.
   b. After meeting, provide letter of compliance to Architect, indicating when coordination conference was held and who was in attendance.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
1. Deliver each article of hardware in manufacturer’s original packaging.

C. Project Conditions:

1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
2. Provide secure lock-up for door hardware delivered to Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

D. Protection and Damage:

1. Promptly replace products damaged during shipping.
2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

E. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

F. Deliver keys to Owner by registered mail or overnight package service.

1.7 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 03.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner’s security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

E. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

F. Direct shipments not permitted, unless approved by Contractor.

1.8 WARRANTY

A. Special Warranty: Manufacturer’s standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Years from date of Substantial Completion, for durations indicated.

   a. Closers:
1) Mechanical: 30 years.

b. Locksets:
   1) Mechanical: 3 years.
   2) Electrified: 1 year.

c. Continuous Hinges: Lifetime warranty.
d. Key Blanks: Lifetime

2. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

1.9 MAINTENANCE

A. Maintenance Tools:

1. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Approval of products from manufacturers indicated as "Acceptable Manufacturer" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer’s product.

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<tr>
<th>Item</th>
<th>Scheduled Manufacturer</th>
<th>Acceptable Manufacturer</th>
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<td>HPC, Lund</td>
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B. Hand of Door: Drawings show direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.

C. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.2 MATERIALS

A. Fasteners

1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
4. Install hardware with fasteners provided by hardware manufacturer.

B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.3 HINGES

A. Provide five-knuckle, ball bearing hinges.

1. Manufacturers and Products:

B. Requirements:

1. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
   a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
   b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
2. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high  
b. Interior: Heavy weight, steel, 5 inches (127 mm) high

3. 2 inches or thicker doors:
 a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high  
b. Interior: Heavy weight, steel, 5 inches (127 mm) high

4. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.

5. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.

6. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 a. Steel Hinges: Steel pins  
b. Non-Ferrous Hinges: Stainless steel pins  
c. Out-Swinging Exterior Doors: Non-removable pins  
d. Out-Swinging Interior Lockable Doors: Non-removable pins  
e. Interior Non-lockable Doors: Non-rising pins

7. Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.

8. Doors 36 inches (914 mm) wide or less furnish hinges 4-1/2 inches (114 mm) high; doors greater than 36 inches (914 mm) wide furnish hinges 5 inches (127 mm) high, heavy weight or standard weight as specified.

9. Provide hinges with electrified options as scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component.

10. Provide mortar guard for each electrified hinge specified, unless specified in hollow metal frame specification.

11. Provide spring hinges where specified. Provide two spring hinges and one bearing hinge per door leaf for doors 90 inches (2286 mm) or less in height. Provide one additional bearing hinge for each 30 inches (762 mm) of additional door height.

2.4 CONTINUOUS HINGES

A. Aluminum Geared

1. Manufacturers:
 a. Scheduled Manufacturer: Ives.  

2. Requirements:
 a. Provide aluminum geared continuous hinges conforming to ANSI A156.25, Grade 2.  
b. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.  
c. Provide nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.  
d. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.  
e. On fire-rated doors, provide aluminum geared continuous hinges that are classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
f. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware.
g. Install hinges with fasteners supplied by manufacturer.
h. Provide hinges with symmetrical hole pattern.

2.5 CYLINDRICAL LOCKS

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product: Best 9K Series

B. Requirements:
   1. Provide cylindrical locks conforming to ANSI A156.2 Series 4000, Grade 1. Cylinders: Refer to "KEYING" article, herein.
   2. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2 inch latch throw. Provide proper latch throw for UL listing at pairs.
   3. Provide locksets with thru-bolts, and no exposed screws.
   4. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
   5. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
   6. Provide electrified options as scheduled in the hardware sets.
   7. Lever Trim: Solid cast levers without plastic inserts, and wrought roses on both sides.
      a. Lever Design: Best 15D.
      b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

2.9 AUXILIARY LOCKS

A. Deadlocks:
   1. Manufacturers and Products:
      a. Scheduled Manufacturer and Product: Best 48H series

   2. Requirements:
      a. Provide mortise deadlock series conforming to ANSI A156 and function as specified. Cylinders: Refer to "KEYING" article, herein.
      b. Provide deadlocks with standard 2-3/4 inches (70 mm) backset. Provide deadbolt with full 1 inch (25 mm) throw, constructed of stainless steel.
      c. Provide manufacturer's standard strike.
2.10 EXIT DEVICES

A. Manufacturers and Products:


2. Acceptable Manufacturers and Products: Sargent 80 series, Precision Apex series

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1, and UL listed for Panic Exit= or Fire Exit Hardware. Cylinders: Refer to “KEYING” article, herein.

2. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or= aluminum, plated to standard architectural finishes to match balance of door hardware.

3. Touchpad: Extend minimum of one half of door width. Match exit device finish, stainless= steel for US26, US26D, US28, US32, and US32D finishes; and for all other finishes,= provide compatible finish to exit device. Provide compression springs in devices, latches,= and outside trims or controls; tension springs also acceptable.

4. Provide exit devices with deadlatching feature for security and for future addition of alarm= kits and/or other electrified requirements.

5. Provide exit devices with manufacturer’s approved strikes.

6. Provide exit devices cut to door width and height. Locate exit devices at height= recommended by exit device manufacturer, allowable by governing building codes, and= approved by Architect.

7. Mount mechanism case flush on face of doors, or provide spacers to fill gaps behind= devices. Where glass trim or molding projects off face of door, provide glass bead kits.

8. Provide cylinder or hex-key dogging (as indicated) at non-fire-rated exit devices, unless= specified less dogging.

9. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled= as keyed removable mullion that is removed by use of a keyed cylinder, which is self- locking when re-installed.

10. Where lever handles are specified as outside trim for exit devices, provide heavy-duty= lever trims with forged or cast escutcheon plates. Provide vandal-resistant or= freewheeling levers.

   a. Lever Style: Match lever style of locksets.

   b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide= on levers on exterior (secure side) of doors serving rooms considered to be= hazardous.

11. Provide UL labeled fire exit hardware for fire rated openings.

12. Provide factory drilled weep holes for exit devices used in full exterior application, highly= corrosive areas, and where noted in hardware sets.

13. Provide electrified options as scheduled.
2.11 CYLINDERS

A. Manufacturer:
   1. Scheduled Manufacturer: Best Key System, No Substitute

B. Requirements: Provide cylinders/cores complying with the following requirements.
   1. Furnished by same manufacturer as locks.
   2. Cylinders/cores compliant with ANSI/BHMA A156.5; latest revision, Section 12, Grade 1; permanent cylinders; cylinder face finished to match lockset, manufacturer’s series as indicated.

C. Full-sized cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.
   1. Conventional cylinder with interchangeable core (SFIC) core with keyway compatible with existing system.
   2. Keying:

D. Manufacturer-keyed permanent cylinders/cores, configured into existing keying system per “KEYING” article herein.

E. Nickel silver bottom pins.
   1. Identification:

F. Mark permanent cylinders/cores and keys with applicable blind code per DHI publication "Keying Systems and Nomenclature" for identification. Blind code marks shall not include actual key cuts.

G. Identification stamping provisions must be approved by the Architect and Owner.

H. Construction Keying System.

I. 3 construction control keys and extractor tool, if required.

J. 12 construction change (day) keys.
   1. Owner or Owner’s Representative will void operation of temporary construction keys.

K. Replaceable Construction Cores.
   1. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.

L. 12 construction change (day) keys.
   1. Owner or Owner’s Representative will replace temporary construction cores with permanent cores.
2.12 KEYING

A. Keying System: Factory registered, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Keying System: Existing system maintained by Owner or Owners representative, incorporating decisions made at keying conference.

C. Keying Requirements – General
   1. Permanent cylinders/cores keyed by the manufacturer according to the following key system.

D. Keying system tied into existing system as directed by the Owner.
   1. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements shall be cause for replacement of cylinders/cores involved at no additional cost to Owner.

E. Keys
   1. Material: Nickel silver; minimum thickness of .092-inch (2.3mm)
   2. Identification:

F. Coordinate with cylinder/core and key identification requirements above.

G. Stamp keys with Owner’s unique key system facility code as established by the manufacturer, key symbol and embossed or stamped with “DO NOT DUPLICATE” along with the “PATENTED” or patent number to enforce the patent protection.

H. Failure to comply with stamping requirements shall be cause for replacement of keys involved at no additional cost to Owner.
   1. Quantity: Furnish in the following quantities.
      a. Change (Day) Keys: 3 per cylinder/core.
      b. Permanent Control Keys: 3.
2.14 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: LCN 4010/4110/4020 series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder.
3. Cylinder Body: 1-1/2 inch (38 mm) diameter.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves with separate adjustment for latch speed, general speed, and backcheck.
7. Provide closers with a solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.16 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer: Ives.

B. Requirements:

1. Provide push plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick and beveled 4 edges. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
2. Provide push bars of solid bar stock, diameter and length as scheduled. Provide push bars of sufficient length to span from center to center of each stile. Where required, mount back to back with pull.
3. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
4. Provide flush pulls as scheduled. Where required, provide back-to-back mounted model.
5. Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
6. Provide pull plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick, beveled 4 edges, and prepped for pull. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
7. Provide wire pulls of solid bar stock, diameter and length as scheduled.
8. Provide decorative pulls as scheduled. Where required, mount back to back with pull.
2.17 PROTECTION PLATES

A. Manufacturers:
   1. Scheduled Manufacturer: Ives.

B. Requirements:
   1. Provide kick plates, mop plates, and armor plates minimum of 0.050 inch (1 mm) thick as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
   2. Sizes of plates:
      a. Kick Plates: 8 inches (254 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
      b. Mop Plates: 8 inches (102 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
      c. Armor Plates: 34 inches (914 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

2.18 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:
   1. Scheduled Manufacturers: Glynn-Johnson
   2. Acceptable Manufacturers: Rixson, Sargent

B. Requirements:
   1. Provide heavy duty concealed mounted overhead stop or holder as specified for exterior and interior vestibule single acting doors.
   2. Provide heavy duty concealed mounted overhead stop or holder as specified for double acting doors.
   3. Provide heavy or medium duty and concealed or surface mounted overhead stop or holder for interior doors as specified. Provide medium duty surface mounted overhead stop for interior doors and at any door that swings more than 140 degrees before striking wall, open against equipment, casework, sidelights, and where conditions do not allow wall stop or floor stop presents tripping hazard.
   4. Where overhead holders are specified provide friction type at doors without closer and positive type at doors with closer.
2.19 DOOR STOPS AND HOLDERS
   A. Manufacturers:
      1. Scheduled Manufacturer: Ives.
   
   B. Provide door stops at each door leaf:
      1. Provide wall stops wherever possible. Provide convex type where mortise type locks are
         used and concave type where cylindrical type locks are used.
      2. Where a wall stop cannot be used, provide universal floor stops for low or high rise
         options.
      3. Where wall or floor stop cannot be used, provide medium duty surface mounted
         overhead stop.

2.20 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING
   A. Manufacturers:
   
   B. Requirements:
      1. Provide thresholds, weatherstripping (including door sweeps, seals, astragals) and
         gasketing systems (including smoke, sound, and light) as specified and per architectural
         details. Match finish of other items.
      2. Size of thresholds:
         a. Saddle Thresholds: 1/2 inch (13 mm) high by jamb width by door width
         b. Bumper Seal Thresholds: 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door
            width
      3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient
         or flexible seal strip is easily replaceable and readily available.

2.21 SILENCERS
   A. Manufacturers:
      1. Scheduled Manufacturer: Ives.
   
   B. Requirements:
      1. Provide "push-in" type silencers for hollow metal or wood frames.
      2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for
         each pair frame.

2.23 COAT HOOKS
   A. Acceptable manufacturers and products: Ives, Burns, Rockwood.
   
   B. Provide coat hooks as specified.
2.24 FINISHES

A. Finish: BHMA 626/652 (US26D); except:

1. Hinges at Exterior Doors: BHMA 630 (US32D)
2. Continuous Hinges: BHMA 628 (US28)
4. Protection Plates: BHMA 630 (US32D)
5. Overhead Stops and Holders: BHMA 630 (US32D)
6. Door Closers: Powder Coat to Match
7. Wall Stops: BHMA 630 (US32D)
8. Latch Protectors: BHMA 630 (US32D)
9. Weatherstripping: Clear Anodized Aluminum
10. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Where on-site modification of doors and frames is required:

1. Remove existing hardware being replaced, tag, and store according to contract documents.
2. Field modify and prepare existing door and frame for new hardware being installed.
3. When modifications are exposed to view, use concealed fasteners, when possible.
4. Prepare hardware locations in accordance with:

   a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
   b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
   c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.
3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

   2. Custom Steel Doors and Frames: HMMA 831.

B. Install each hardware item in compliance with manufacturer’s instructions and recommendations, using only fasteners provided by manufacturer.

C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

H. Lock Cylinders: Install construction cores to secure building and areas during construction period.

   1. Replace construction cores with permanent cores as indicated in keying section.

K. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

L. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Closers shall not be visible in corridors, lobbies and other public spaces unless approved by Architect.

M. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

N. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

O. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

P. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

Q. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

R. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
3.4 FIELD QUALITY CONTROL

A. Architectural Hardware Consultant: Engage qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

   1. Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

   1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DEMONSTRATION

A. Provide training for Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Division 01 Section "Demonstration and Training."

END OF SECTION 087100
SECTION 09 9100 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Work Included: The Work of this Section shall include but not be limited to the following:

1. Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. Colors will be selected from manufacturer's full range of standard colors.
2. Walls, ceilings, doors, frames, wood trim, stairs, ladders and all other exposed elements.
3. Exposed pipes.
4. Exposed Ducts.
5. Exposed Conduit.
7. Exposed steel.
8. Primed metal equipment.

B. Work Not Included:

1. Pre-Finished Items: Do not include painting when shop or factory finishing is specified for such items as elevator, and mechanical and electrical equipment.
2. Concealed Surfaces: Painting is not required on surfaces in concealed and generally inaccessible areas such as pipe spaces, duct shafts and elevator shafts.
3. Finished Metal Surfaces: Anodized aluminum, stainless steel, and similar finished metals will not require painting.
4. Operating Parts: Moving parts of mechanical and electrical devices, motor and fan shafts will not require painting.

C. Labels: Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material.

B. Samples: Submit samples for review of each required color and texture. Identify materials used on samples.

1. Submit paint samples on 12 x 12-inch hardboard. Resubmit samples until they are acceptable.
2. Apply full-coat finish samples on at least 60 sq. ft. of wall and ceiling areas, where directed, until required sheen, color and texture are obtained under finished lighting. Do not proceed with painting until samples are approved.
C.  Mock-ups:

1.  Mock-up typical painted areas, including walls, doors, railings etc., extent and location as directed by the Architect.

1.4  QUALITY ASSURANCE

A.  Single Source Responsibility:  Provide primers produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

B.  Coordination of Work:  Review other Sections of these specifications for shop primers, to ensure compatibility of total coatings system.  Upon request from other trades, furnish information on finish materials, to ensure that compatible prime coats are used.

C.  Applicator:  A firm with not less than 5 years of successful experience in the application of specified materials.

1.5  DELIVERY AND STORAGE

A.  Deliver materials in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

1.  Name or title of material.
2.  Fed. Spec. number, if applicable.
3.  Manufacturer's name, stock number and date of manufacture.
4.  Contents by volume, for major pigment and vehicle constituents.
5.  Thinning and application instructions.
6.  Color name and number.

B.  Store materials not in actual use in tightly covered containers.  Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue.

1.  Protect paint materials from freezing where necessary.  Keep storage area neat and orderly.  Remove oily rags and waste daily.  Ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from use of paints.

1.6  JOB CONDITIONS

A.  Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees Fahrenheit and 90 degrees Fahrenheit, unless otherwise permitted by paint manufacturer's instructions.

B.  Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees Fahrenheit and 95 degrees Fahrenheit, unless otherwise permitted by paint manufacturer's instructions.

C.  Do not apply paint when relative humidity exceeds 85%; or to damp or wet surfaces; unless otherwise permitted by paint manufacturer.
PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Benjamin Moore and Co.
2. PPG Industries, Pittsburgh Paints.
3. The Sherwin-Williams Company.
4. Tnemec.

B. Proprietary names of colors or materials are not intended to imply that products of named manufacturers are required to the exclusion of equivalent products of other manufacturers.

2.2 MATERIALS

A. Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

B. VOC Content of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:

1. Flat Paints, Coatings, and Primers: VOC content of not more than 50 g/L.
2. Non-flat Paints, Coatings, and Primers: VOC content of not more than 150 g/L.
3. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
4. Floor Coatings: VOC not more than 100 g/L.
5. Flat Topcoat Paints: VOC content of not more than 50 g/L.
6. Nonflat Topcoat Paints: VOC content of not more than 150 g/L.
7. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
8. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
9. Zinc-Rich Industrial Maintenance Primers: VOC content of not more than 340 g/L.
10. Pre-Treatment Wash Primers: VOC content of not more than 420 g/L.

C. Chemical Components of Field-Applied Interior Paints and Coatings: Provide topcoat paints and anti-corrosive and anti-rust paints applied to ferrous metals that comply with the following chemical restrictions; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:

1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
2. Restricted Components: Paints and coatings shall not contain any of the following:
   a. Acrolein.
   b. Acrylonitrile.
   c. Antimony.
   d. Benzene.
   e. Butyl benzyl phthalate.
   f. Cadmium.
g. Di (2-ethylhexyl) phthalate.
h. Di-n-butyl phthalate.
i. Di-n-octyl phthalate.
j. 1,2-dichlorobenzene.
k. Diethyl phthalate.
l. Dimethyl phthalate.
m. Ethylbenzene.
n. Formaldehyde.
o. Hexavalent chromium.
p. Isophorone.
q. Lead.
r. Mercury.
s. Methyl ethyl ketone.
t. Methyl isobutyl ketone.
u. Methylene chloride.
v. Naphthalene.
w. Toluene (methyl benzene).
x. 1,1,1-trichloroethane.
y. Vinyl chloride.

D. Primers and Undercoaters: Provide primers and undercoaters recommended by the finish coating manufacturer for suitability with the substrate and compatibility with finish coats.

E. Color Pigments: Pure, non-fading, to suit substrates and service.

2.3 PROJECTION SCREEN COATING

A. Product: Screen Goo Projection Screen Coating (High Contrast Finish Coating).

B. A water-based non-hazardous acrylic optical paint.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine areas and conditions of work and notify Contractor in writing of conditions detrimental to proper painting. Proceed with work after unsatisfactory conditions have been corrected.

B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

C. Do not paint over dirt, rust, scale, grease, moisture, or conditions detrimental to formation of a durable paint film.

3.2 SURFACE PREPARATION

A. General: Perform preparation and cleaning in accordance with paint manufacturer's instructions and as herein specified.

1. Provide barrier coats over incompatible primers or remove and reprime as required.
2. Remove hardware, accessories, lighting fixtures, and similar items not to be field-painted, or provide suitable protection. Remove items if necessary, for painting of items or adjacent surfaces.
3. Clean surfaces to be painted. Remove oil and grease prior to other cleaning. Be sure that cleaning materials do not fall onto newly-painted surfaces.


D. Ferrous Metals: Clean unfinished ferrous surfaces of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning. Touch-up defective shop-prime coats with shop primer.

E. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent.

3.3 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer's directions.

B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Remove surface film and, if necessary, strain material before using.

3.4 APPLICATION

A. General: Apply primers, undercoaters and finish paints in accordance with manufacturer's directions. Use techniques best suited for substrate and type of material being applied.

1. Provide colors, surface treatments, and finishes, as scheduled or as selected by the Architect.
2. Provide finish coats which are compatible with prime paints used.
3. Apply additional coats when undercoats show through final coat of paint, until paint film is of uniform finish, color and appearance, including edges, corners, crevices, welds, and fasteners.
4. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only.
5. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
6. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.
7. Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.
8. Sand lightly between each succeeding enamel or varnish coat.
9. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted.

B. Scheduling Painting: Apply first-coat material to surfaces that have been prepared for painting as soon as practicable after preparation. Allow sufficient time for proper drying. Do not recoat until paint feels dry and firm.

C. Minimum Coating Thickness: Apply materials to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

D. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to those items exposed in mechanical equipment rooms and in occupied spaces; this also applies to elevators.
E. Prime Coats: Apply prime coat on material which is required to be painted or finished, and which has not been prime coated by others. Recoat primed and sealed surfaces where there is evidence of defects in first coat, to assure a finish coat without defects.

F. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

G. Completed Work: Match approved samples for color and texture. Repaint work not in compliance with specified requirements.

H. Painted Signs: Provide painted signs of size, style, color and content as indicated. These signs shall be painted by a qualified sign painter.

3.5 CLEAN-UP AND PROTECTION

A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.

1. Upon completion of painting work, clean paint-splattered surfaces. Remove spattered paint by proper methods, with care not to scratch or otherwise damage finished surfaces.

B. Protection: Protect work of other trades against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting.

1. Provide "Wet Paint" signs to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
2. At completion of work of other trades, touch-up and restore all damaged or defaced surfaces.

3.6 EXTERIOR PAINT SCHEDULE

A. General: Provide the following exterior paint systems as manufactured by Tnemec Inc., or approved equal.

B. Ferrous Metal:

1. Semi-Gloss Aliphatic Acrylic Polyurethane:
   a. Surface Prep: SSPC-SP 10 for ferrous metal; omit surface preparation and primer coat if ferrous metal has been hot-dip galvanized, or shop primed with Tnemec "Poly-Ura-Prime 50-330".
   b. Primer Coat: Tnemec "Poly-Ura-Prime 50-330".
   c. Intermediate Coat: Tnemec Series 66 Epoxoline; 3.0 to 5.0 mils d.f.t.
   d. Finish Coat: Tnemec Series 73 Endura-Shield; 2.0 to 3.0 mils d.f.t.

C. Exterior Galvanized Ferrous Metal

1. First Coat: Moore IMC Acrylic Metal Primer (M04),

3.7 INTERIOR PAINT AND COATING SCHEDULE

A. General: Provide the following interior paint systems as manufactured by Benjamin Moore, or approved equal.
B. Interior Ferrous Metal:

1. Semi-Gloss:
   a. Primer: 1 coat IronClad Latex Low Lustre Metal and Wood Enamel (363) or touch-up shop primer.
   b. Finish: 2 coats Alkyd Dulamel (207).

C. Interior Concrete Block (to be painted):

1. Semi-gloss Finish/Acrylic Epoxy:
   b. Primer: Moore’s Fresh Start All-Purpose 100% Acrylic Primer, 023..
   c. Finish: 2 coats (2 mil dft each coat) Moore’s Moorcraft Super Spec 100% Acrylic Semi-Gloss Enamel, 281.

D. Interior Drywall:

1. Flat Finish / Interior Acrylic Latex (ceilings):
   a. Primer: 1 coat Fresh Start® High-Hiding All Purpose Primer (046).
   b. Finish: 2 coats Waterborne Ceiling Paint (508).

2. Eggshell Finish/Vinyl Acrylic Latex:
   a. Primer: 1 coat Regal FirstCoat (216).
   b. Finish: 2 coats Regal AquaVelvet (319).

3. Semi-Gloss Finish/Vinyl Acrylic Latex:
   a. Primer: 1 coat Regal FirstCoat (216).
   b. Finish: 2 coats Regal AquaGlo (333).

4. Dry Erase Coating, a two component, waterbased polyurethane.
   a. Level 5 gypsum board finish.
   b. Surface preparation per manufacturer’s requirements.
   c. Primer: Multi-Purpose Interior Latex Primer by Sherwin Williams.
   e. Gloss coat: Dry Erase Coating (KB65C2000) by Sherwin Williams.
   a. Surface preparation per manufacturer’s requirements.
   b. Primer: 2 coats, High Contrast Reflective Coating.
   c. Finish: 2 coats High Contrast Finish Coating.

E. Wood:
   1. Semi-Gloss Finish/Vinyl Acrylic Latex:
      a. Primer: 1 coat Regal FirstCoat (216).
      b. Finish: 2 coats Regal AquaGlo (333).

F. COLORS
   1. See Interior Finish Schedule on the drawings or to be determined by the Architect.

END OF SECTION 09 9100
SECTION 131290 - PREFABRICATED PRESSBOX

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Prefabricated Press Box.

1.2 DESIGN REQUIREMENTS

A. Provide factory built, prefabricated press box capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.

B. Design Loads: Determine loads based on the following minimum design wind loads and snow loads:
   1. Wind Load: Meet the wind load requirement for Glassboro, NJ
   2. Snow Load: Meet the snow load requirement for Glassboro, New Jersey
   3. Live Load: When press box has a camera deck, meet the minimum live load applicable in New Jersey.
   4. Energy Code: Provide factory built, prefabricated press box that meets the energy code requirements for New Jersey.

C. Seismic Performance: Provide factory built, prefabricated press box capable of withstanding the effects of earthquake motions for the site according to:
   1. ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 9, "Earthquake Loads".

D. Thermal Movements: Provide factory built, prefabricated press box that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Engineering calculations are based on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

E. Electrical Devices: Devices UL listed with wiring bearing UL classification and conforming to the current NEC.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing prefabricated press boxes with a minimum documented experience of ten years.

B. Design: All prefabricated press boxes are to be built by a company regularly employing a quality assurance program by an independent third party quality control firm. The manufacturing process will include a 5-stage, 35-step, quality inspection for each system.

D. Preinstallation Meetings: Conduct meetings to verify project requirements, substrate conditions, utility connections, manufacturer's installation instructions, and warranty
requirements. Compliance with Division 1 requirements are responsibility of the contractor.

1.4 WARRANTY

A. Provide the manufacturer’s 5 year limited warranty on anodized aluminum surfaces against oxidation and the manufacturer’s 20 year limited warranty against peeling, flaking and chipping of deck and fascia when properly maintained.

B. Provide manufacturer’s warranties on all accessory items provided such as, but not limited to, air conditioning, lights, and heating units.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Southern Bleacher Company Inc., P.O. Box One, Graham, Texas 76450 (800) 433-0912

B. Acceptable Manufacturers:
   1. American Press Box, a division of Sightlines Inc, 7207 Kavanaugh Road Crestwood, KY 40014 (866) 518-2330
   3. Dant Clayton Corporation, 1500 Bernheim Lane, Louisville, KY 40210 (800) 467.3655
   4. Or approved equal.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 PRESS BOX WITH METAL STRUCTURE

A. Product Description: Type II Construction
   1. Press Box Support Structure: Independently supported on existing CMU walls but connected to rear of grandstand. Support Structure is 10 feet wide x 24 feet long.
   2. Press Box Dimensions: 10 feet wide x 24 feet long.
   4. Press Box to be of open construction, allowing inspection of electrical wiring, switches and other components without destructive disassembly.

B. Materials/Finishes
   1. Press Box Support Structure:
      a. Structural shapes meet one of the following ASTM specifications: A36, A36/A572 grade 50, A572 grade 50, A529-50, or A500 grade B.
      b. Shop connections are seal welds.
      c. After fabrication, all steel is hot-dipped galvanized to ASTM-A-123 specifications.
   2. Press Box: All materials shall be new and shall comply with ASTM specifications.
      a. Floor
         (1) Main support to be a galvanized steel floor frame sized to support structure and metal belly pan for support of insulation.
         (2) Floor to be INTERLOCK Aluminum Decking System, extruded.
aluminum alloy 6063-T6, mill finish. Attach Decking System to steel floor frame with mechanical fasteners at end of plank and at intermediate supports. (Tongue & Groove or Standard extrusion is not acceptable.)

(3) Insulation: Poly-encapsulated Formaldehyde-free fiberglass building insulation R-13, 3 1/2 inches thick. Batt or roll as manufactured by Johns Manville, or equal.

b. Wall Structure

(1) 4 inch x 4 inch x 11 gauge square tubing with maximum span of 14 feet on front wall and maximum span of 6 feet on back wall and 4 inch x 2 1/2 inch x 14 gauge steel "cees" with maximum spacing of 5 feet for all walls with siding. Spans greater than these require engineered calculations for design.
   a) Steel framing shapes to meet one of the following ASTM's: A500 Grade A or B 45 ksi, A36 50 ksi, A1011 CS Type B.

(2) Insulation: Poly-encapsulated Formaldehyde-free fiberglass building insulation R-13, 3 1/2 inches thick. Batt or roll as manufactured by Johns Manville or equal.

(3) Interior Finish

   a) 1/2 or 5/8 inch vinyl coated gypsum panels (as required), Gold Bond vinyl-surfaced Durasan.
   b) Cove Base: Vinyl 4 inches x .080.

(4) Exterior Finish

   a) 26 gauge prefinished R-Panel paneling as manufactured by MBCI, Signature 200 color series, or equal.
   b) Wall panels are attached with #12 TEK screws - 6" O.C. at the top, midpoint and bottom of the panels.
   c) Lap screws are placed at each end of the panels, at the intermediate supports, and at the mid point between supports (TEK #14).
   d) All fasteners to be painted same color as exterior paneling.

c. Roof Structure

(1) 4 inch x 4 inch x 11 gauge square tubing with maximum spacing of 6 feet on center and 4 inches x 2 1/2 inches x 14 gauge steel "cees" with maximum spacing of 2 feet on center.

(2) Roof: 1/8 inch fourway steel plate roof, continuous welded seams coated with acrylic metal primer as manufactured by Coronado and 36 mls of acrylink roof coating as manufactured by Isothermal Protective Coatings, or equal. Plate is welded on both sides of rafters with 1-1/2 inch long 1/8 inch fillet welds on 12 inch centers.

(3) Insulation: Poly-encapsulated Formaldehyde-free fiberglass building insulation, R-19 (minimum) 6 inches thick. Batt or roll as manufactured by Johns Manville or equal.

(4) Cornice: 26 gauge steel prefinished to match metal siding.

(5) Ceiling: 24 inch x 24 inch x 5/8 inch acoustical lay in ceiling tile with removable tiles, per 2015 IBC, applicable category per seismic zone.

d. Exterior Door(s)

(1) Full flush steel construction with hollow or polystyrene core. 18 gauge skin sheets. Dimensions: 3 feet 0 inches x 6 feet 8 inches. Color: Coordinated with press box siding color.

(2) Steel door frame (16 gauge) complete with 1/2 inch threshold and...
weather-stripping.
(3) Exterior Hardware: Yale 546F Exterior Trim, or equal. Handles shall be lever type that allow operation without tight grasping or twisting of the wrist. Keyed alike locks.
(4) Interior Hardware: Yale 2100 Exit Device, or equal. Handle shall be panic bar that allows for opening without any grasping, twisting or turning.

e. Windows:
  (1) Frame: Extruded aluminum single hung, vertical sliding unit, thermal break.
  (2) Sash: Tilt toward inside for easy cleaning.
  (3) Glazing: Clear tempered panes.
  (4) Dimensions of each unit: Dependent on compartment size. At interior wall locations or structural support locations the dimension between windows shall be no greater than 6 inches.
  (5) Finish: Electrostatically applied acrylic enamel.

f. Work Bench
  (1) 1 inch thick x 21 inch wide clear anodized aluminum work bench supported by 4 inch x 2 1/2 inch x 14 gauge steel. Countertops heights shall be constructed to allow wheelchair usage at all locations.

g. Painting: Materials equal to Coronado, or equal.
  (1) Surfaces: Exterior Door, Door Frame
    a) Primer: Applied by Door Manufacturer.
    b) Finish: 2 coats acrylic latex semi-gloss enamel applied by press box manufacturer.
  (2) Surfaces: Interior Doors (if applicable)
    a) Primer: Jones Blair Interior Exterior Oil Primer, or equal.
    b) Finish: 2 coats acrylic latex semi-gloss enamel.
  (3) Surfaces: Exterior Siding
    a) Primer: Applied by Siding Manufacturer.
    b) Finish: Applied by Siding Manufacturer.
    c) Touchup: If applicable
  (4) Surfaces: Wall and Roof Structure
    a) Primer: Coronado DTM Industrial 180-11 acrylic metal primer applied after welding, or equal.

h. Caulking: Sonneborn NP1 – Polyurethane sealant, All temperature, UV resistant, or equal. Silicone products are not acceptable.

i. Electrical
  (1) Submittal drawing shall indicate devices and circuitry.
  (2) Fixtures: 2-lamp, 58 or 64 watt fluorescent, 2’ x 4’ lay-in design as manufactured by Lithonia Lighting, or equal. Fixtures shall be located above countertop and be maximized to full length of compartment space.
  (3) Wiring to be in EMT, flexible metal conduit or surface raceway. N.E.C. breaker panel to be 100 amp flush or surface mounted on wall with 1 1/4 inch conduit stubbed out bottom of press box or 2 inch rigid conduit to be stubbed out at back wall of press box ready for service line to be connected.
  (4) Electrical outlet(s) installed per NEC shall be standard duty. All outlets shall be surface or flush mounted.
(5) Sound, Telephone, Clock, Field Communication: Empty single or double outlet boxes (as required) per N.E.C. with 3/4 inch conduit stubbed out bottom of Press Box for use of Owner. Outlet boxes to be flush mounted into wall. Any wiring completed on-site will be responsibility of such contractor for inspections. Quantity: Two will be provided. Owner shall indicate additional boxes needed.


Quantity: One. Owner shall indicate additional outlets needed.

j. Filming Area/Observation Deck (If applicable)

1. Access Options
   a) Interior: Roof hatch with OSHA-rated aluminum ladder mounted to an interior back wall.
   b) Exterior: Roof guardrailing to be 48" above walking surface around perimeter of deck attached to 5/8 inch galvanized studs to be welded to roof support structure. The guard railing to include anodized aluminum with 9 gauge galvanized vinyl coated chain link fencing fastened in place with galvanized fasteners and aluminum ties.

2.3 ACCESSORIES

A. Electrical Power Service: Provide in accordance with NEC Standards.
   1. Press box shall be of open construction, allowing the inspection of electrical wiring, switches and other components without destructive disassembly. (standard)
   2. 125 amp, 120/240 VAC, single-phase, 3-wire service with 8-16 circuit breaker panel
   3. Use copper wiring in surface mounted 1/2-inch (12.5 mm) minimum EMT conduit
   4. Provide one 120-V GFCI power duplex receptacle every 8' with tester (standard).
   5. Wiremold (Optional) Series, one and two piece, multi channel non-metallic surface mounted raceway along front wall, above or below scorer's table, outlets on 4' centers, typical.

B. Indoor Lighting Fixtures:
   1. Provide quantity of fixtures required to maintain the following illumination level:
      a. 30 foot-candles.
   2. Ceiling-mounted fluorescent light fixture(s) 48 inches (1200 mm) long with two 32-W / T-8 lamps (standard).
   3. Provide single-pole switch mounted adjacent to door to control lighting fixtures.
   4. Drop ceiling Troffer fixtures.
      a. 24" x 24" - 32-W / T-8 lamps.
   5. Exit Signs:
      a. Exit signs shall be clearly marked. In the event of electrical power outage during use or occupancy in the press box, the exit signs will illuminate.

C. Outdoor Lighting Fixtures:
   1. Provide quantity of fixtures required to maintain the following illumination level:
      a. 20 foot-candles.
   2. Hi Abuse Fixture, Linear Fluorescent 40 Watts, Lamp Quantity 2, 120 V. Length 49.38 inches, width 9.25 inches, depth 3.38 inches, cold weather, color as selected from mfr standard.
   3. Flood light, LED, Finish to be selected from MFR standard.
4. Provide single-pole switch mounted adjacent to door to control lighting fixtures.
5. Provide photoelectric controller.

D. Heating Unit: Wall-mounted, thermostatically controlled:
   1. 110V, 1500W, 5120 Btu, electric heater with fan-forced operation, Enclose heater in enameled steel cabinet.

E. Thru-wall Air Conditioning:
   1. 9,900 Btu, high mount, 110V.

F. Thru-wall Heating/Air Conditioning:
   1. 11,600/11,400 btu with electric heat 230/208V.

G. Wall Exhaust Fan:
   1. Duct diameter 10-3/8 Inches.
   2. Motor 120 V, 1625 RPM, 1.7 amps, 480 CFM.

H. Storage Drawers:
   1. Locking storage drawer, workbench mounted, 6-5/8 inches high, 20 inches deep, 17-1/4 inches wide.

2.4 FABRICATION

A. Fabricate factory built, prefabricated Press Box completely in factory.

B. Preglaze windows and doors at factory.

C. Prewire factory built, prefabricated structures and shelters at factory, ready for connection to service at Project site.

D. Separate dissimilar materials using nonconductive tape, paint, or other material not visible in finished work.

E. Fabricate factory built, prefabricated structures for crane unloading under base or welded in place concealed lifting lugs at roof that are suitable for placement of the structure on prepared foundations.

PART 3 - EXECUTION

3.1 Coordinate installation with Press Box Manufacturer. Install as per manufacturer’