PROJECT MANUAL

EXTERIOR RESTORATION
at
15 and 21 THE GREEN
(KIRK-SHORT BUILDINGS)
15 and 21 The Green
Dover, DE 19901

for

Division of Historical and Cultural Affairs
Dover, Delaware

Project Manager
State of Delaware
Office of Management and Budget
Division of Facilities Management
540 South DuPont Highway
Suite 1, Tom Collins Building
Dover, DE 19901

State of Delaware Contract Number: MC2006000083

Architect
Bernardon Haber Holloway Architects LLC
123 Justison St., Suite 101
Wilmington, DE 19801

Structural Engineer
Baker, Ingram & Associates
1050 S. State St.
Dover, DE 19901

Consulting Restoration Architect
Frens and Frens LLC
120 South Church Street
West Chester, PA 19382

MEP Engineer
Furlow Associates
1206 Society Dr.
Claymont, DE 19703

Bernardon Haber Holloway Project No. 8216.11-14

Issued for Construction – February 25, 2015

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Specifications for this project are arranged in accordance with the Construction Specification Institute numbering system and format. Section numbering is discontinuous and all numbers not appearing in the Table of Contents are not used for this Project.

DOCUMENTS BOUND HEREWITH

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LIST OF DRAWING SHEETS

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INVITATION TO BID

Sealed bids for OMB/DFM Contract Number MC2006000083 – Exterior Restoration at 15 and 21 The Green will be received by the State of Delaware, Office of Management and Budget, Division of Facilities Management, in the Reception area of the Facilities Management Office in the Thomas Collins Building, 540 South DuPont Highway, Suite 1 (Third Floor), Dover DE 19901 until 10:00 AM local time on April 9, 2015, at which time they will be publicly opened and read aloud in the Conference Room. Bidder bears the risk of late delivery. Any bids received after the stated time will be returned unopened.

Project involves the exterior restoration of the north and west sides of the building, including refurbishment of wood windows, brick repointing, replication of the wood cornice, painting, installation of storm windows, demolition of a portion of a small addition at the rear of the building, new asphalt shingle and SBS modified bitumen roofs, demolition of roofing and plumbing fixtures, and structural repairs to the wood floor and wall framing.

Attention is called to the construction schedule as detailed in the Bid Documents.

A **MANDATORY** Pre-Bid Meeting will be held on March 18, 2015 at 1:00 PM at 15 and 21 The Green, Dover, DE 19901 for the purpose of reviewing the scope of services and to answer questions. Representatives of each party to any Joint Venture must attend this meeting. **ATTENDANCE OF THIS MEETING IS A PREREQUISITE FOR BIDDING ON THIS CONTRACT.**

Sealed bids shall be addressed to the Division of Facilities Management, 540 South DuPont Highway, Suite 1 (Third Floor), Dover DE 19901. The outer envelope should clearly indicate: **"OMB/DFM CONTRACT No. MC2006000083 – EXTERIOR RESTORATION AT 15 AND 21 THE GREEN - SEALED BID - DO NOT OPEN."**

Contract documents may be obtained at the office of _Bernardon Haber Holloway Architects LLC_upon receipt of $100.00 per set/non-refundable. Checks are to be made payable to "Bernardon Haber Holloway Architects LLC".

Construction documents will be available for review at the following locations: Bernardon Haber Holloway Architects LLC; Delaware Contractors Association; Associated Builders and Contractors.

Bidders will not be subject to discrimination on the basis of race, creed, color, sex, sexual orientation, gender identity or national origin in consideration of this award, and Minority Business Enterprises, Disadvantaged Business Enterprises, Women-Owned Business Enterprises and Veteran-Owned Business Enterprises will be afforded full opportunity to submit bids on this contract. Each bid must be accompanied by a bid security equivalent to ten percent of the bid amount and all additive alternates. The successful bidder must post a performance bond and payment bond in a sum equal to 100 percent of the contract price upon execution of the contract. The Owner reserves the right to reject any or all bids and to waive any informalities therein. The Owner may extend the time and place for the opening of the bids from that described in the advertisement, with not less than two calendar days notice by certified delivery, facsimile machine or other electronic means to those bidders receiving plans.

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INSTRUCTIONS TO BIDDERS

TABLE OF ARTICLES

ARTICLE 1: GENERAL

1.1 DEFINITIONS

1.1.1 Whenever the following terms are used, their intent and meaning shall be interpreted as follows:

1.2 STATE: The State of Delaware.

1.3 AGENCY: Contracting State Agency as noted on cover sheet.

1.4 DESIGNATED OFFICIAL: The agent authorized to act for the Agency.

1.5 BIDDING DOCUMENTS: Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement for Bid, Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders (if any), General Conditions, Supplementary General Conditions, General Requirements, Special Provisions (if any), the Bid Form (including the Non-collusion Statement), and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, as well as the Drawings, Specifications (Project Manual) and all Addenda issued prior to execution of the Contract.

1.6 CONTRACT DOCUMENTS: The Contract Documents consist of the, Instructions to Bidders, Supplementary Instructions to Bidders (if any), General Conditions, Supplementary General Conditions, General Requirements, Special Provisions (if any), the form of agreement between the Owner and the Contractor, Drawings (if any), Specifications (Project Manual), and all addenda.

1.7 AGREEMENT: The form of the Agreement shall be AIA Document A101, Standard Form of Agreement between Owner and Contractor where the basis of payment is a STIPULATED SUM. In the case of conflict between the instructions contained therein and the General Requirements herein, these General Requirements shall prevail.

1.8 GENERAL REQUIREMENTS (or CONDITIONS): General Requirements (or conditions) are instructions pertaining to the Bidding Documents and to contracts in general. They contain, in summary, requirements of laws of the State; policies of the Agency and instructions to bidders.

1.9 SPECIAL PROVISIONS: Special Provisions are specific conditions or requirements peculiar to the bidding documents and to the contract under consideration and are supplemental to the General Requirements. Should the Special Provisions conflict with the General Requirements, the Special Provisions shall prevail.

1.10 ADDENDA: Written or graphic instruments issued by the Owner/Architect prior to the execution of the contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

1.11 BIDDER OR VENDOR: A person or entity who formally submits a Bid for the material or Work contemplated, acting directly or through a duly authorized representative who meets the requirements set forth in the Bidding Documents.

1.12 SUB-BIDDER: A person or entity who submits a Bid to a Bidder for materials or labor, or both for a portion of the Work.

1.13 BID: A complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

1.14 BASE BID: The sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids (if any are required to be stated in the bid).

1.15 ALTERNATE BID (or ALTERNATE): An amount stated in the Bid, where applicable, to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents is accepted.

1.16 UNIT PRICE: An amount stated in the Bid, where applicable, as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

1.17 SURETY: The corporate body which is bound with and for the Contract, or which is liable, and which engages to be responsible for the Contractor's payments of all debts pertaining to and for his acceptable performance of the Work for which he has contracted.

1.18 BIDDER'S DEPOSIT: The security designated in the Bid to be furnished by the Bidder as a guaranty of good faith to enter into a contract with the Agency if the Work to be performed or the material or equipment to be furnished is awarded to him.

1.19 CONTRACT: The written agreement covering the furnishing and delivery of material or work to be performed.

1.20 CONTRACTOR: Any individual, firm or corporation with whom a contract is made by the Agency.

1.21 SUBCONTRACTOR: An individual, partnership or corporation which has a direct contract with a contractor to furnish labor and materials at the job site, or to perform construction labor and furnish material in connection with such labor at the job site.

1.22 CONTRACT BOND: The approved form of security furnished by the contractor and his surety as a guaranty of good faith on the part of the contractor to execute the work in accordance with the terms of the contract.

ARTICLE 2: BIDDER'S REPRESENTATIONS

2.1 PRE-BID MEETING

2.1.1 A pre-bid meeting for this project will be held at the time and place designated. Attendance at this meeting is a pre-requisite for submitting a Bid, unless this requirement is specifically waived elsewhere in the Bid Documents.

2.2 By submitting a Bid, the Bidder represents that:

2.2.1 The Bidder has read and understands the Bidding Documents and that the Bid is made in accordance therewith.

2.2.2 The Bidder has visited the site, become familiar with existing conditions under which the Work is to be performed, and has correlated the Bidder's his personal observations with the requirements of the proposed Contract Documents.

2.2.3 The Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception.

2.3 JOINT VENTURE REQUIREMENTS

2.3.1 For Public Works Contracts, each Joint Venturer shall be qualified and capable to complete the Work with their own forces.

2.3.2 Included with the Bid submission, and as a requirement to bid, a copy of the executed Joint Venture Agreement shall be submitted and signed by all Joint Venturers involved.

2.3.3 All required Bid Bonds, Performance Bonds, Material and Labor Payment Bonds must be executed by both Joint Venturers and be placed in both of their names.

2.3.4 All required insurance certificates shall name both Joint Venturers.

2.3.5 Both Joint Venturers shall sign the Bid Form and shall submit a valid Delaware Business License Number with their Bid.

2.3.6 Both Joint Venturers shall include their Federal E.I. Number with the Bid.

2.3.7 In the event of a mandatory Pre-bid Meeting, each Joint Venturer shall have a representative in attendance.

2.3.8 Due to exceptional circumstances and for good cause shown, one or more of these provisions may be waived at the discretion of the State.

2.4 ASSIGNMENT OF ANTITRUST CLAIMS

2.4.1 As consideration for the award and execution by the Owner of this contract, the Contractor hereby grants, conveys, sells, assigns and transfers to the State of Delaware all of its right, title and interests in and to all known or unknown causes of action it presently has or may now or hereafter acquire under the antitrust laws of the United States and the State of Delaware, relating to the particular goods or services purchased or acquired by the Owner pursuant to this contract.

ARTICLE 3: BIDDING DOCUMENTS

3.1 COPIES OF BID DOCUMENTS

3.1.1 Bidders may obtain complete sets of the Bidding Documents from the Architectural/Engineering firm designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein.

3.1.2 Bidders shall use complete sets of Bidding Documents for preparation of Bids. The issuing Agency nor the Architect assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

3.1.3 Any errors, inconsistencies or omissions discovered shall be reported to the Architect immediately.

3.1.4 The Agency and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall report any errors, inconsistencies, or ambiguities discovered to the Architect.

3.2.2 Bidders or Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Architect at least seven days prior to the date for receipt of Bids. Interpretations, corrections and changes to the Bidding Documents will be made by written Addendum. Interpretations, corrections, or changes to the Bidding Documents made in any other manner shall not be binding.

3.2.3 The apparent silence of the specifications as to any detail, or the apparent omission from it of detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and only material and workmanship of the first quality are to be used. Proof of specification compliance will be the responsibility of the Bidder.

3.2.4 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all permits, labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work.

3.2.5 The Owner will bear the costs for all impact and user fees associated with the project.

3.3 SUBSTITUTIONS

3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of quality, required function, dimension, and appearance to be met by any proposed substitution. The specification of a particular manufacturer or model number is not intended to be proprietary in any way. Substitutions of products for those named will be considered, providing that the Vendor certifies that the function, quality, and performance characteristics of the material offered is equal or superior to that specified. It shall be the Bidder's responsibility to assure that the proposed substitution will not affect the intent of the design, and to make any installation modifications required to accommodate the substitution.

3.3.2 Requests for substitutions shall be made in writing to the Architect at least ten days prior to the date of the Bid Opening. Such requests shall include a complete description of the proposed substitution, drawings, performance and test data, explanation of required installation modifications due the substitution, and any other information necessary for an evaluation. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval shall be final. The Architect is to notify Owner prior to any approvals.

3.3.3 If the Architect approves a substitution prior to the receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding.

3.3.4 The Architect shall have no obligation to consider any substitutions after the Contract award.

3.4 ADDENDA

3.4.1 Addenda will be mailed or delivered to all who are known by the Architect to have received a complete set of the Bidding Documents.

3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

3.4.3 No Addenda will be issued later than 4 days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which extends the time or changes the location for the opening of bids.

3.4.4 Each bidder shall ascertain prior to submitting his Bid that they have received all Addenda issued, and shall acknowledge their receipt in their Bid in the appropriate space. Not acknowledging an issued Addenda could be grounds for determining a bid to be non-responsive.

ARTICLE 4: BIDDING PROCEDURES

4.1 PREPARATION OF BIDS

4.1.1 Submit the bids on the Bid Forms included with the Bidding Documents.

4.1.2 Submit the original Bid Form for each bid. Bid Forms may be removed from the project manual for this purpose.

4.1.3 Execute all blanks on the Bid Form in a non-erasable medium (typewriter or manually in ink).

4.1.4 Where so indicated by the makeup on the Bid Form, express sums in both words and figures, in case of discrepancy between the two, the written amount shall govern.

4.1.5 Interlineations, alterations or erasures must be initialed by the signer of the Bid.

4.1.6 BID ALL REQUESTED ALTERNATES AND UNIT PRICES, IF ANY. If there is no change in the Base Bid for an Alternate, enter "No Change". The Contractor is responsible for verifying that they have received all addenda issued during the bidding period. Work required by Addenda shall automatically become part of the Contract.

4.1.7 Make no additional stipulations on the Bid Form and do not qualify the Bid in any other manner.

4.1.8 Each copy of the Bid shall include the legal name of the Bidder and a statement whether the Bidder is a sole proprietor, a partnership, a corporation, or any legal entity, and each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current Power of Attorney attached, certifying agent's authority to bind the Bidder.

4.1.9 Bidder shall complete the Non-Collusion Statement form included with the Bid Forms and include it with their Bid.

4.1.10 In the construction of all Public Works projects for the State of Delaware or any agency thereof, preference in employment of laborers, workers or mechanics shall be given to bona fide legal citizens of the State who have established citizenship by residence of at least 90 days in the State.

4.1.11 Each bidder shall include in their bid a copy of a valid Delaware Business License.

4.2 BID SECURITY

4.2.1 All bids shall be accompanied by a deposit of either a good and sufficient bond to the agency for the benefit of the agency, with corporate surety authorized to do business in this State, the form of the bond and the surety to be approved by the agency, or a security of the

bidder assigned to the agency, for a sum equal to at least 10% of the bid plus all add alternates, or in lieu of the bid bond a security deposit in the form of a certified check, bank treasurer's check, cashier's check, money order, or other prior approved secured deposit assigned to the State. The bid bond need not be for a specific sum, but may be stated to be for a sum equal to 10% of the bid plus all add alternates to which it relates and not to exceed a certain stated sum, if said sum is equal to at least 10% of the bid. The Bid Bond form used shall be the standard OMB form (attached).

4.2.2 The Agency has the right to retain the bid security of Bidders to whom an award is being considered until either a formal contract has been executed and bonds have been furnished or the specified time has elapsed so the Bids may be withdrawn or all Bids have been rejected.

4.2.3 In the event of any successful Bidder refusing or neglecting to execute a formal contract and bond within 20 days of the awarding of the contract, the bid bond or security deposited by the successful bidder shall be forfeited.

4.3 SUBCONTRACTOR LIST

4.3.1 As required by Delaware Code, Title 29, section 6962(d)(10)b, each Bidder shall submit with their Bid a completed List of Sub-Contractors included with the Bid Form. NAME ONLY ONE SUBCONTRACTOR FOR EACH TRADE. A Bid will be considered non-responsive unless the completed list is included.

4.3.2 Provide the Name and Address for each listed subcontractor. Addresses by City, Town or Locality, plus State, will be acceptable.

4.3.3 It is the responsibility of the Contractor to ensure that their Subcontractors are in compliance with the provisions of this law. Also, if a Contractor elects to list themselves as a Subcontractor for any category, they must specifically name themselves on the Bid Form and be able to document their capability to act as Subcontractor in that category in accordance with this law.

4.4 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

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

A. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex or national origin. The Contractor will take affirmative action to ensure the applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, sex or national origin. Such action 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 contracting agency setting forth this nondiscrimination clause.

B. The 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 race, creed, color, sex or national origin."

4.5 PREVAILING WAGE REQUIREMENT

4.5.1 Wage Provisions: In accordance with Delaware Code, Title 29, Section 6960, renovation projects whose total cost shall exceed $15,000, and $100,000 for new construction, the minimum wage rates for various classes of laborers and mechanics shall be as determined by the Department of Labor, Division of Industrial Affairs of the State of Delaware.

4.5.2 The prevailing wage shall be the wage paid to a majority of employees performing similar work as reported in the Department's annual prevailing wage survey or in the absence of a majority, the average paid to all employees reported.

4.5.3 The employer shall pay all mechanics and labors employed directly upon the site of work, unconditionally and not less often than once a week and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the specifications, regardless of any contractual relationship which may be alleged to exist between the employer and such laborers and mechanics.

4.5.4 The scale of the wages to be paid shall be posted by the employer in a prominent and easily accessible place at the site of the work.

4.5.5 Every contract based upon these specifications shall contain a stipulation that sworn payroll information, as required by the Department of Labor, be furnished weekly. The Department of Labor shall keep and maintain the sworn payroll information for a period of 6 months from the last day of the work week covered by the payroll.

4.6 SUBMISSION OF BIDS

4.6.1 Enclose the Bid, the Bid Security, and any other documents required to be submitted with the Bid in a sealed opaque envelope. Address the envelope to the party receiving the Bids. Identify with the project name, project number, and the Bidder's name and address. If the Bid is sent by mail, enclose the sealed envelope in a separate mailing envelope with the notation "BID ENCLOSED" on the face thereof. The State is not responsible for the opening of bids prior to bid opening date and time that are not properly marked.

4.6.2 Deposit Bids at the designated location prior to the time and date for receipt of bids indicated in the Advertisement for Bids. Bids received after the time and date for receipt of bids will be marked "LATE BID" and returned.

4.6.3 Bidder assumes full responsibility for timely delivery at location designated for receipt of bids.

4.6.4 Oral, telephonic or telegraphic bids are invalid and will not receive consideration.

4.6.5 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids, provided that they are then fully in compliance with these Instructions to Bidders.

4.7 MODIFICATION OR WITHDRAW OF BIDS

4.7.1 Prior to the closing date for receipt of Bids, a Bidder may withdraw a Bid by personal request and by showing proper identification to the Architect. A request for withdraw by letter or fax, if the Architect is notified in writing prior to receipt of fax, is acceptable. A fax directing a modification in the bid price will render the Bid informal, causing it to be ineligible for consideration of award. Telephone directives for modification of the bid price shall not be permitted and will have no bearing on the submitted proposal in any manner.

4.7.2 Bidders submitting Bids that are late shall be notified as soon as practicable and the bid shall be returned.

4.7.3 A Bid may not be modified, withdrawn or canceled by the Bidder during a thirty (30) day period following the time and date designated for the receipt and opening of Bids, and Bidder so agrees in submitting their Bid. Bids shall be binding for 30 days after the date of the Bid opening.

ARTICLE 5: CONSIDERATION OF BIDS

5.1 OPENING/REJECTION OF BIDS

5.1.1 Unless otherwise stated, Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids will be made available to Bidders.

5.1.2 The Agency shall have the right to reject any and all Bids. A Bid not accompanied by a required Bid Security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

5.1.3 If the Bids are rejected, it will be done within thirty (30) calendar day of the Bid opening.

5.2 COMPARISON OF BIDS

5.2.1 After the Bids have been opened and read, the bid prices will be compared and the result of such comparisons will be made available to the public. Comparisons of the Bids may be based on the Base Bid plus desired Alternates. The Agency shall have the right to accept Alternates in any order or combination.

5.2.2 The Agency reserves the right to waive technicalities, to reject any or all Bids, or any portion thereof, to advertise for new Bids, to proceed to do the Work otherwise, or to abandon the Work, if in the judgment of the Agency or its agent(s), it is in the best interest of the State.

5.2.3 An increase or decrease in the quantity for any item is not sufficient grounds for an increase or decrease in the Unit Price.

5.2.4 The prices quoted are to be those for which the material will be furnished F.O.B. Job Site and include all charges that may be imposed during the period of the Contract.

5.2.5 No qualifying letter or statements in or attached to the Bid, or separate discounts will be considered in determining the low Bid except as may be otherwise herein noted. Cash or separate discounts should be computed and incorporated into Unit Bid Price(s).

5.3 DISQUALIFICATION OF BIDDERS

5.3.1 An agency shall determine that each Bidder on any Public Works Contract is responsible before awarding the Contract. Factors to be considered in determining the responsibility of a Bidder include:

A. The Bidder's financial, physical, personnel or other resources including Subcontracts;

B. The Bidder's record of performance on past public or private construction projects, including, but not limited to, defaults and/or final adjudication or admission of violations of the Prevailing Wage Laws in Delaware or any other state;

C. The Bidder's written safety plan;

D. Whether the Bidder is qualified legally to contract with the State;

E. Whether the Bidder supplied all necessary information concerning its responsibility; and,

F. Any other specific criteria for a particular procurement, which an agency may establish; provided however, that, the criteria be set forth in the Invitation to Bid and is otherwise in conformity with State and/or Federal law.

5.3.2 If an agency determines that a Bidder is nonresponsive and/or nonresponsible, the determination shall be in writing and set forth the basis for the determination. A copy of

the determination shall be sent to the affected Bidder within five (5) working days of said determination.

5.3.3 In addition, any one or more of the following causes may be considered as sufficient for the disqualification of a Bidder and the rejection of their Bid or Bids.

5.3.3.1 More than one Bid for the same Contract from an individual, firm or corporation under the same or different names.

5.3.3.2 Evidence of collusion among Bidders.

5.3.3.3 Unsatisfactory performance record as evidenced by past experience.

5.3.3.4 If the Unit Prices are obviously unbalanced either in excess or below reasonable cost analysis values.

5.3.3.5 If there are any unauthorized additions, interlineation, conditional or alternate bids or irregularities of any kind which may tend to make the Bid incomplete, indefinite or ambiguous as to its meaning.

5.3.3.6 If the Bid is not accompanied by the required Bid Security and other data required by the Bidding Documents.

5.3.3.7 If any exceptions or qualifications of the Bid are noted on the Bid Form.

5.4 ACCEPTANCE OF BID AND AWARD OF CONTRACT

5.4.1 A formal Contract shall be executed with the successful Bidder within twenty (20) calendar days after the award of the Contract.

5.4.2 Per Section 6962(d)(13) a., Title 29, Delaware Code, "The contracting agency shall award any public works contract within thirty (30) days of the bid opening to the lowest responsive and responsible Bidder, unless the Agency elects to award on the basis of best value, in which case the election to award on the basis of best value shall be stated in the Invitation To Bid."

5.4.3 Each Bid on any Public Works Contract must be deemed responsive by the Agency to be considered for award. A responsive Bid shall conform in all material respects to the requirements and criteria set forth in the Contract Documents and specifications.

5.4.4 The Agency shall have the right to accept Alternates in any order or combination, and to determine the low Bidder on the basis of the sum of the Base Bid, plus accepted Alternates.

5.4.5 The successful Bidder shall execute a formal contract, submit the required Insurance Certificate, and furnish good and sufficient bonds, unless specifically waived in the General Requirements, in accordance with the General Requirement, within twenty (20) days of official notice of contract award. Bonds shall be for the benefit of the Agency with surety in the amount of 100% of the total contract award. Said Bonds shall be conditioned upon

the faithful performance of the contract. Bonds shall remain in affect for period of one year after the date of substantial completion.

5.4.6 If the successful Bidder fails to execute the required Contract and Bond, as aforesaid, within twenty (20) calendar days after the date of official Notice of the Award of the Contract, their Bid guaranty shall immediately be taken and become the property of the State for the benefit of the Agency as liquidated damages, and not as a forfeiture or as a penalty. Award will then be made to the next lowest qualified Bidder of the Work or readvertised, as the Agency may decide.

5.4.7 Each bidder shall supply with its bid its taxpayer identification number (i.e., federal employer identification number or social security number) and a copy of its Delaware business license, and should the vendor be awarded a contract, such vendor shall provide to the agency the taxpayer identification license numbers of such subcontractors. Such numbers shall be provided on the later of the date on which such subcontractor is required to be identified or the time the contract is executed. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

5.4.8 The Bid Security shall be returned to the successful Bidder upon the execution of the formal contract. The Bid Securities of unsuccessful bidders shall be returned within thirty (30) calendar days after the opening of the Bids.

ARTICLE 6: POST-BID INFORMATION

6.1 CONTRACTOR'S QUALIFICATION STATEMENT

6.1.1 Bidders to whom award of a Contract is under consideration shall, if requested by the Agency, submit a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a statement has been previously required and submitted.

6.2 BUSINESS DESIGNATION FORM

6.2.1 Successful bidder shall be required to accurately complete an Office of Management and Budget Business Designation Form for Subcontractors.

ARTICLE 7: PERFORMANCE BOND AND PAYMENT BOND

7.1 BOND REQUIREMENTS

7.1.1 The cost of furnishing the required Bonds, that are stipulated in the Bidding Documents, shall be included in the Bid.

7.1.2 If the Bidder is required by the Agency to secure a bond from other than the Bidder's usual sources, changes in cost will be adjusted as provide in the Contract Documents.

7.1.3 The Performance and Payment Bond forms used shall be the standard OMB forms (attached).

7.2 TIME OF DELIVERY AND FORM OF BONDS

7.2.1 The bonds shall be dated on or after the date of the Contract.

7.2.2 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix a certified and current copy of the power of attorney.

ARTICLE 8: FORM OF AGREEMENT BETWEEN AGENCY AND CONTRACTOR

8.1 Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment is a Stipulated Sum.

END OF INSTRUCTIONS TO BIDDERS

EXTERIOR RESTORATION at
15 & 21 THE GREEN
15 & 21 THE GREEN, DOVER, DE 19901
CONTRACT NUMBER MC2006000083

BID FORM

For Bids Due: TBD

To: State of Delaware
Office of Management and Budget
Division of Facilities Management
Thomas Collins Building
540 South DuPont Highway, Suite 1
Dover, Delaware 19901

Name of Bidder: _____

Delaware Business License No.:_____ **Taxpayer ID No.:** _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

(Other License Nos.): _____

Phone No.: ( ) _____ - _____ **Fax No.:** ( ) _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____

($_____)

EXTERIOR RESTORATION at
15 & 21 THE GREEN
15 & 21 THE GREEN, DOVER, DE 19901
CONTRACT NUMBER MC2006000083

BID FORM

ALTERNATES

Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

1. Alternate 1: State amount to be added to the Base Bid to install insulation at floor cavity of first floor where indicated on drawings.

   Add/Deduct: _____

   ($ _____)

   Additional number of days to complete Alternate 1 bid work: _____

EXTERIOR RESTORATION at
15 & 21 THE GREEN
15 & 21 THE GREEN, DOVER, DE 19901
CONTRACT NUMBER MC2006000083

BID FORM

UNIT PRICES

Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

	DEDUCT	ADD
UNIT PRICE No. 1: NONE REQUESTED	$ _____	$ _____

EXTERIOR RESTORATION at
15 & 21 THE GREEN
15 & 21 THE GREEN, DOVER, DE 19901
CONTRACT NUMBER MC2006000083

BID FORM

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for thirty (30) days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within _____calendar days of the Notice to Proceed.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address: _____
_____
_____

Witness: _____ By: _____
(Authorized Signature)

(SEAL)

_____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Security
(Others as Required by Project Manuals)

EXTERIOR RESTORATION at
15 & 21 THE GREEN
15 & 21 THE GREEN, DOVER, DE 19901
CONTRACT NUMBER MC2006000083

BID FORM

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

	Subcontractor Category	Subcontractor	Address (City & State)	Subcontractors tax payer ID # or Delaware Business license #
1.	Demolition			
2.	Millwork			
3.	Masonry			
4.	Roofing			
5.	Metal Flashing & Trim			
6.	Exterior Wood Painting			
7.	Joint Sealants			

EXTERIOR RESTORATION at
15 & 21 THE GREEN
15 & 21 THE GREEN, DOVER, DE 19901
CONTRACT NUMBER MC2006000083

BID FORM

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date to the Office of Management and Budget, Division of Facilities Management.

All the terms and conditions of the Exterior Restoration at 15 and 21 The Green have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

E-MAIL: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____day of _____ 20_____

My Commission expires _____NOTARY PUBLIC _____

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____ _____of _____ in the County of _____ _____and State of _____as **Principal**, and _____ _____ of _____ in the County of _____ and State of _____ as **Surety**, legally authorized to do business in the State of Delaware ("**State**"), are held and firmly unto the **State** in the sum of _____ _____ Dollars ($_____), or _____ percent not to exceed _____ _____ Dollars ($_____) of amount of bid on Contract No. _____, to be paid to the **State** for the use and benefit of _____ (***insert State agency name***) for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bonded **Principal** who has submitted to the _____ (***insert State agency name***) a certain proposal to enter into this contract for the furnishing of certain material and/or services within the **State**, shall be awarded this Contract, and if said **Principal** shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the _____ _____ (***insert State agency name***) this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____ seal and dated this _____day of _____ in the year of our Lord two thousand and _____ (20____).

SEALED, AND DELIVERED IN THE
Presence of

_____
Name of Bidder (Organization)

Corporate Seal

By: _____
Authorized Signature

Attest:_____

_____
Title

_____
Name of Surety

Witness:_____

By: _____

_____
Title

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STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR A101-2007

The contract to be utilized on this project shall be the "Standard Form of Agreement Between Owner and Contractor" AIA Document A101-2007.

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AIA® Document A101™ – 2007

Standard Form of Agreement Between Owner and Contractor
where the basis of payment is a Stipulated Sum

AGREEMENT made as of the day of in the year
(In words, indicate day, month and year)

BETWEEN the Owner:
(Name, address and other information)

and the Contractor:
(Name, address and other information)

for the following Project:
(Name, location, and detailed description)

The Architect:
(Name, address and other information)

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

TABLE OF ARTICLES

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than ( ) days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Portion of Work	Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be ($), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 4.3 Unit prices, if any:
(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price Per Unit

§ 4.4 Allowances included in the Contract Sum, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Price

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the day of the same month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than ( ) days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported

by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of ( ). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;

.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of ( );

.3 Subtract the aggregate of previous payments made by the Owner; and

.4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

.1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)

.2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:
(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:
(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

[X] Arbitration pursuant to Section 15.4 of AIA Document A201–2007

[ ] Litigation in a court of competent jurisdiction

[ ] Other *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

per annum

§ 8.3 The Owner's representative:
(Name, address and other information)

§ 8.4 The Contractor's representative:
(Name, address and other information)

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 9.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)
Title of Specifications exhibit:
(Table deleted)
§ 9.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)
Title of Drawings exhibit:
(Table deleted)
§ 9.1.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

.1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

.2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

Type of insurance or bond	Limit of liability or bond amount ($ 0.00)

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
(Printed name and title)	*(Printed name and title)*

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SUPPLEMENT TO AGREEMENT BETWEEN OWNER AND CONTRACTOR A101-2007

The following supplements modify the "Standard Form of Agreement Between Owner and Constructor," AIA Document A101-2007. Where a portion of the Standard Form of Agreement is modified or deleted by the following, the unaltered portions of the Standard Form of Agreement shall remain in effect.

ARTICLE 5: PAYMENTS

5.1 PROGRESS PAYMENTS

5.1.3 Delete paragraph 5.1.3 in its entirety and replace with the following:

"Provided that a valid Application for Payment is received by the Architect that meets all requirements of the Contract, payment shall be made by the Owner not later than 30 days after the Owner receives the valid Application for Payment."

ARTICLE 6: DISPUTE RESOLUTION

6.2 BINDING DISPUTE RESOLUTION

Check Other – and add the following sentence:

"Any remedies available in law or in equity."

ARTICLE 8: MISCELLANEOUS PROVISIONS

8.2 Insert the following:

"Payments are due 30 days after receipt of a valid Application for Payment. After that 30 day period, interest may be charged at the rate of 1% per month not to exceed 12% per annum."

8.5 Delete paragraph 8.5 in its entirety and replace with the following:

"The Contractor's representative shall not be changed without ten days written notice to the Owner."

END OF SUPPLEMENT TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

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STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET

PERFORMANCE BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS, that we, _____, as principal ("**Principal**"), and _____, a _____ corporation, legally authorized to do business in the State of Delaware, as surety ("**Surety**"), are held and firmly bound unto the _____ ("**Owner**") (***insert State agency name***), in the amount of _____ ($_____), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole, firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 20__.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. _____ dated the _____ day of _____, 20__ (the "Contract"), which Contract is incorporated herein by reference, shall well and truly provide and furnish all materials, appliances and tools and perform all the work required under and pursuant to the terms and conditions of the Contract and the Contract Documents (as defined in the Contract) or any changes or modifications thereto made as therein provided, shall make good and reimburse **Owner** sufficient funds to pay the costs of completing the Contract that **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

Surety, for value received, hereby stipulates and agrees, if requested to do so by **Owner**, to fully perform and complete the work to be performed under the Contract pursuant to the terms, conditions and covenants thereof, if for any cause **Principal** fails or neglects to so fully perform and complete such work.

Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other

transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

Surety hereby stipulates and agrees that no modifications, omissions or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: _____

Witness or Attest: Address: _____

_____ By: _____(SEAL)
Name: Name:
Title:

(Corporate Seal)

SURETY

Name: _____

Witness or Attest: Address: _____

_____ By: _____ (SEAL)
Name: Name:
Title:

(Corporate Seal)

STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET

PAYMENT BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS, that we, _____, as principal ("**Principal**"), and _____, a _____ corporation, legally authorized to do business in the State of Delaware, as surety ("**Surety**"), are held and firmly bound unto the _____ ("**Owner**") (*insert State agency name*), in the amount of _____ ($_____), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 20__.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. _____dated the _____ day of _____, 20__ (the "Contract"), which Contract is incorporated herein by reference, shall well and truly pay all and every person furnishing materials or performing labor or service in and about the performance of the work under the Contract, all and every sums of money due him, her, them or any of them, for all such materials, labor and service for which **Principal** is liable, shall make good and reimburse **Owner** sufficient funds to pay such costs in the completion of the Contract as **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

Surety hereby stipulates and agrees that no modifications, omission or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: _____

Witness or Attest: Address: _____

_____ By: _____(SEAL)
Name: Name:
Title:

(Corporate Seal)

SURETY

Name: _____

Witness or Attest: Address: _____

_____ By: _____(SEAL)
Name: Name:
Title:

(Corporate Seal)

AIA® Document G702™ – 1992

Application and Certificate for Payment

TO OWNER: **PROJECT:** BHH

APPLICATION NO: 001
PERIOD TO:
CONTRACT FOR: General Construction
CONTRACT DATE:
PROJECT NOS: / /

Distribution to:
OWNER: ☐
ARCHITECT: ☐
CONTRACTOR: ☐
FIELD: ☐
OTHER: ☐

FROM CONTRACTOR: **VIA ARCHITECT:**

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM	$	0.00
2. Net change by Change Orders	$	0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2)	$	0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)	$	0.00
5. RETAINAGE:		
a. 0 % of Completed Work (Column D + E on G703)	$	0.00
b. 0 % of Stored Material (Column F on G703)	$	0.00
Total Retainage (Lines 5a + 5b or Total in Column I of G703)	$	0.00
6. TOTAL EARNED LESS RETAINAGE (Line 4 Less Line 5 Total)	$	0.00
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)	$	0.00
8. CURRENT PAYMENT DUE	$	0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)	$	0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	$ 0.00	$ 0.00
Total approved this Month	$ 0.00	$ 0.00
TOTALS	$ 0.00	$ 0.00
NET CHANGES by Change Order	$ 0.00	

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: _____

State of:

County of:

Subscribed and sworn to before me this day of

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 this 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.

AMOUNT CERTIFIED ..... $ 0.00

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

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

AIA® Document G703™ – 1992

Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO: 001
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED FROM PREVIOUS APPLICATION (D + E)	WORK COMPLETED THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
	GRAND TOTAL	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	0.00 %	$ 0.00	$ 0.00

STATE OF DELAWARE

DIVISION OF FACILITIES MANAGEMENT

GENERAL CONDITIONS

TO THE

CONTRACT

The General Conditions of this Contract are as stated in the American Institute of Architects Document AIA A201 (2007 Edition) entitled General Conditions of the Contract for Construction and is part of this project manual as if herein written in full.

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SUPPLEMENTARY GENERAL CONDITIONS A201-2007

The following supplements modify the "General Conditions of the Contract for Construction," AIA Document A201-2007. Where a portion of the General Conditions is modified or deleted by the Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

TABLE OF ARTICLES

ARTICLE 1: GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

Delete the last sentence in its entirety and replace with the following:

"The Contract Documents also include Advertisement for Bid, Instructions to Bidder, sample forms, the Bid Form, the Contractor's completed Bid and the Award Letter."

Add the following Paragraph:

1.1.1.1 In the event of conflict or discrepancies among the Contract Documents, the Documents prepared by the State of Delaware, Division of Facilities Management shall take precedence over all other documents.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add the following Paragraphs:

1.2.4 In the case of an inconsistency between the Drawings and the Specifications, or within either document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Architect's interpretation.

1.2.5 The word "PROVIDE" as used in the Contract Documents shall mean "FURNISH AND INSTALL" and shall include, without limitation, all labor, materials, equipment, transportation, services and other items required to complete the Work.

1.2.6 The word "PRODUCT" as used in the Contract Documents means all materials, systems and equipment.

1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

Delete Paragraph 1.5.1 in its entirety and replace with the following:

"All pre-design studies, drawings, specifications and other documents, including those in electronic form, prepared by the Architect under this Agreement are, and shall remain, the property of the Owner whether the Project for which they are made is executed or not. Such documents may be used by the Owner to construct one or more like Projects without the approval of, or additional compensation to, the Architect. The Contractor, Subcontractors, Sub-subcontractors and Material or Equipment Suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or Material and Equipment Supplier on other Projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and Architect's consultants.

The Architect shall not be liable for injury or damage resulting from the re-use of drawings and specifications if the Architect is not involved in the re-use Project. Prior to re-use of construction documents for a Project in which the Architect is not also involved, the Owner will remove from such documents all identification of the original Architect, including name, address and professional seal or stamp."

Delete Paragraph 1.5.2 in its entirety.

ARTICLE 2: OWNER

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

To Subparagraph 2.2.3 – Add the following sentence:

"The Contractor, at their expense shall bear the costs to accurately identify the location of all underground utilities in the area of their excavation and shall bear all cost for any repairs required, out of failure to accurately identify said utilities."

Delete Subparagraph 2.2.5 in its entirety and substitute the following:

2.2.5 The Contractor shall be furnished free of charge up to five (5) sets of the Drawings and Project Manuals. Additional sets will be furnished at the cost of reproduction, postage and handling.

ARTICLE 3: CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

Amend Paragraph 3.2.2 to state that any errors, inconsistencies or omissions discovered shall be reported to the Architect and Owner immediately.

Delete the third sentence in Paragraph 3.2.3.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Add the following Paragraphs:

3.3.2.1 The Contractor shall immediately remove from the Work, whenever requested to do so by the Owner, any person who is considered by the Owner or Architect to be incompetent or disposed to be so disorderly, or who for any reason is not satisfactory to the Owner, and that person shall not again be employed on the Work without the consent of the Owner or the Architect.

3.3.4 The Contractor must provide suitable storage facilities at the Site for the proper protection and safe storage of their materials. Consult the Owner and the Architect before storing any materials.

3.3.5 When any room is used as a shop, storeroom, office, etc., by the Contractor or Subcontractor(s) during the construction of the Work, the Contractor making

use of these areas will be held responsible for any repairs, patching or cleaning arising from such use.

3.4 LABOR AND MATERIALS

Add the Following Paragraphs:

3.4.4 Before starting the Work, each Contractor shall carefully examine all preparatory Work that has been executed to receive their Work. Check carefully, by whatever means are required, to insure that its Work and adjacent, related Work, will finish to proper contours, planes and levels. Promptly notify the General Contractor/Construction Manager of any defects or imperfections in preparatory Work which will in any way affect satisfactory completion of its Work. Absence of such notification will be construed as an acceptance of preparatory Work and later claims of defects will not be recognized.

3.4.5 Under no circumstances shall the Contractor's Work proceed prior to preparatory Work proceed prior to preparatory Work having been completely cured, dried and/or otherwise made satisfactory to receive this Work. Responsibility for timely installation of all materials rests solely with the Contractor responsible for that Work, who shall maintain coordination at all times.

3.5 WARRANTY

Add the following Paragraphs:

3.5.1 The Contractor will guarantee all materials and workmanship against original defects, except injury from proper and usual wear when used for the purpose intended, for two years after Acceptance by the Owner, and will maintain all items in perfect condition during the period of guarantee.

3.5.2 Defects appearing during the period of guarantee will be made good by the Contractor at his expense upon demand of the Owner, it being required that all work will be in perfect condition when the period of guarantee will have elapsed.

3.5.3 In addition to the General Guarantee there are other guarantees required for certain items for different periods of time than the two years as above, and are particularly so stated in that part of the specifications referring to same. The said guarantees will commence at the same time as the General Guarantee.

3.5.4 If the Contractor fails to remedy any failure, defect or damage within a reasonable time after receipt of notice, the Owner will have the right to replace, repair, or otherwise remedy the failure, defect or damage at the Contractor's expense.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following Paragraphs:

3.11.1 During the course of the Work, the Contractor shall maintain a record set of drawings on which the Contractor shall mark the actual physical location of all piping, valves, equipment, conduit, outlets, access panels, controls, actuators, including all appurtenances that will be concealed once construction is complete, etc., including all invert elevations.

3.11.2 At the completion of the project, the Contractor shall obtain a set of reproducible drawings from the Architect, and neatly transfer all information outlined in 3.11.1 to provide a complete record of the as-built conditions.

3.11.3 The Contractor shall provide two (2) prints of the as-built conditions, along with the reproducible drawings themselves, to the Owner and one (1) set to the Architect. In addition, attach one complete set to each of the Operating and Maintenance Instructions/Manuals.

3.17 In the second sentence of the paragraph, insert "indemnify" between "shall" and "hold".

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.2 ADMINISTRATION OF THE CONTRACT

Delete the first sentence of Paragraph 4.2.7 and replace with the following:

The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples for the purpose of checking for conformance with the Contract Documents.

Delete the second sentence of Paragraph 4.2.7 and replace with the following:

The Architect's action will be taken with such reasonable promptness as to cause no delay in the Work in the activities of the Owner, Contractor or separate Contractors, while allowing sufficient time in the Owner's professional judgment to permit adequate review.

Add the following Paragraph:

4.2.10.1 There will be no full-time project representative provided by the Owner or Architect on this project.

Add to Paragraph 4.2.13 "and in compliance with all local requirements." to the end of the sentence

ARTICLE 5: SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

Delete Paragraph 5.2.3 in its entirety and replace with the following:

5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the

Owner or Architect has no reasonable objection, subject to the statutory requirements of 29 Delaware Code § 6962(d)(10)b.3 and 4.

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

Delete Paragraph 6.1.4 in its entirety.

6.2 MUTUAL RESPONSIBILITY

6.2.3 In the second sentence, strike the word "shall" and insert the word "may".

ARTICLE 7: CHANGES IN THE WORK

(SEE ARTICLE 7: CHANGES IN WORK IN THE GENERAL REQUIREMENTS)

ARTICLE 8: TIME

8.2 PROGRESS AND COMPLETION

Add the following Paragraphs:

8.2.1.1 Refer to Specification Section SUMMARY OF WORK for Contract time requirements.

8.2.4 If the Work falls behind the Progress Schedule as submitted by the Contractor, the Contractor shall employ additional labor and/or equipment necessary to bring the Work into compliance with the Progress Schedule at no additional cost to the Owner.

8.3 DELAYS AND EXTENSION OF TIME

8.3.1 Strike "arbitration" and insert "remedies at law or in equity".

Add the following Paragraph:

8.3.2.1 The Contractor shall update the status of the suspension, delay, or interruption of the Work with each Application for Payment. (The Contractor shall report the termination of such cause immediately upon the termination thereof.) Failure to comply with this procedure shall constitute a waiver for any claim for adjustment of time or price based upon said cause.

Delete Paragraph 8.3.3 in its entirety and replace with the following:

8.3.3 Except in the case of a suspension of the Work directed by the Owner, an extension of time under the provisions of Paragraph 8.3.1 shall be the Contractor's sole remedy in the progress of the Work and there shall be no

payment or compensation to the Contractor for any expense or damage resulting from the delay.

Add the following Paragraph:

8.3.4 By permitting the Contractor to work after the expired time for completion of the project, the Owner does not waive their rights under the Contract.

ARTICLE 9: PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Add the following Paragraphs:

9.2.1 The Schedule of Values shall be submitted using AIA Document G702, Continuation Sheet to G703.

9.2.2 The Schedule of Values is to include a line item for Project Closeout Document Submittal. The value of this item is to be no less than 1% of the initial contract amount.

9.3 APPLICATIONS FOR PAYMENT

Add the following Paragraph:

9.3.1.3 Application for Payment shall be submitted on AIA Document G702 "Application and Certificate for Payment", supported by AIA Document G703 "Continuation Sheet". Said Applications shall be fully executed and notarized.

Add the following Paragraphs:

9.3.4 Until Closeout Documents have been received and outstanding items completed the Owner will pay 95% (ninety-five percent) of the amount due the Contractor on account of progress payments.

9.3.5 The Contractor shall provide a current and updated Progress Schedule to the Architect with each Application for Payment. Failure to provide Schedule will be just cause for rejection of Application for Payment.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

Add the following to 9.5.1:

.8 failure to provide a current Progress Schedule;
.9 a lien or attachment is filed;
.10 failure to comply with mandatory requirements for maintaining Record Documents.

9.6 PROGRESS PAYMENTS

Delete Paragraph 9.6.1 in its entirety and replace with the following:

9.6.1 After the Architect has approved and issued a Certificate for Payment, payment shall be made by the Owner within 30 days after Owner's receipt of the Certificate for Payment.

9.7 FAILURE OF PAYMENT

In first sentence, strike "seven" and insert "thirty (30)". Also strike "binding dispute resolution" and insert "remedies at law or in equity".

9.8 SUBSTANTIAL COMPLETION

To Subparagraph 9.8.3 - Add the following sentence:

"If the Architect is required to make more than 2 inspections of the same portion of work, the Contractor shall be responsible for all costs associated with subsequent inspections including but not limited to any Architect's fees."

9.8.5 In the second sentence, strike "shall" and insert "may".

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

Add the following Paragraphs:

10.1.1.1.1 Each Contractor shall develop a safety program in accordance with the Occupational Safety and Health Act of 1970. A copy of said plan shall be furnished to the Owner and Architect prior to the commencement of that Contractor's Work.

10.1.2 Each Contractor shall appoint a Safety Representative. Safety Representatives shall be someone who is on site on a full time basis. If deemed necessary by the Owner or Architect, Contractor Safety meetings will be scheduled. The attendance of all Safety Representatives will be required. Minutes will be recorded of said meetings by the Contractor and will be distributed to all parties as well as posted in all job offices/trailers etc.

10.2 SAFETY OF PERSONS AND PROPERTY

Add the following Paragraph:

10.2.4.1 As required in the Hazardous Chemical Act of June 1984, all vendors supplying any material that may be defined as hazardous must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a caution warning on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in foreseeable emergency situations. Material Safety Data Sheets shall be provided directly to the Owner, along with the shipping slips that include those products.

10.3 HAZARDOUS MATERIALS

Delete Paragraph 10.3.3 in its entirety.

Delete Paragraph 10.3.6 in its entirety.

ARTICLE 11: INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.4 Strike "the Owner" immediately following "(1)" and strike "and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations."

11.2 OWNER'S LIABILITY INSURANCE

Delete Paragraph 11.2 in its entirety.

11.3 PROPERTY INSURANCE

Delete Paragraph 11.3 in its entirety and replace with the following:

11.3 The State will not provide Builder's All Risk Insurance for the Project. The Contractor and all Subcontractors shall provide property coverage for their tools and equipment, as necessary. Any mandatory deductible required by the Contractor's Insurance shall be the responsibility of the Contractor.

11.4 PERFORMANCE BOND AND PAYMENT BOND

11.4.1 Add the following sentence: "The bonds will conform to those forms approved by the Office of Management and Budget."

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.2.2 AFTER SUBSTANTIAL COMPLETION

Add the following Paragraph:

12.2.2.1.1 At any time during the progress of the Work, or in any case where the nature of the defects will be such that it is not expedient to have corrected, the Owner, at its option, will have the right to deduct such sum, or sums, of money from the amount of the Contract as it considers justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.

12.2.2.1 Strike "one" and insert "two".

12.2.2.2 Strike "one" and insert "two".

12.2.2.3 Strike "one" and insert "two".

12.2.5 In second sentence, strike "one" and insert "two".

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

Strike "except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4."

13.6 INTEREST

Strike "the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located." Insert "30 days of presentment of the authorized Certificate of Payment at the annual rate of 12% or 1% per month.

13.7 TIME LIMITS ON CLAIMS

Strike the last sentence.

Add the following Paragraph:

13.8 CONFLICTS WITH FEDERAL STATUTES OR REGULATIONS

13.8.1 If any provision, specifications or requirement of the Contract Documents conflict or is inconsistent with any statute, law or regulation of the government of the United State of America, the Contractor shall notify the Architect and Owner immediately upon discovery.

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

Delete Paragraph 14.4.3 in its entirety and replace with the following:

14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and cost incurred by reason of such termination along with reasonable overhead.

ARTICLE 15: CLAIMS AND DISPUTES

15.1.2 Throughout the Paragraph strike "21" and insert "45".

15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

Delete Paragraph 15.1.6 in its entirety.

15.2 INITIAL DECISION

Delete Paragraph 15.2.5 in its entirety and replace with the following:

15.2.5 The Architect will approve or reject Claims by written decision, which shall state the reasons therefore and shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Architect shall be subject to mediation and other remedies at law or in equity.

Delete Paragraph 15.2.6 and its subparagraphs in their entirety.

15.3 MEDIATION

15.3.1 Strike "binding dispute resolution" and insert "any or all remedies at law or in equity".

15.3.2 In the first sentence, delete "administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedure in effect on the date of the Agreement," Strike "binding dispute resolution" and insert "remedies at law and in equity".

15.4 ARBITRATION

Delete Paragraph 15.4 and its sub-sections in its entirety.

END OF SUPPLEMENTARY GENERAL CONDITIONS

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STATE OF DELAWARE
DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL AFFAIRS
OFFICE OF LABOR LAW ENFORCEMENT
PHONE: (302) 451-3423

Mailing Address:
225 CORPORATE BOULEVARD
SUITE 104
NEWARK, DE 19702

Located at:
225 CORPORATE BOULEVARD
SUITE 104
NEWARK, DE 19702

PREVAILING WAGES FOR **BUILDING CONSTRUCTION** EFFECTIVE MARCH 14, 2014

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
ASBESTOS WORKERS	21.87	26.94	39.20
BOILERMAKERS	65.47	33.22	48.83
BRICKLAYERS	48.08	48.08	48.08
CARPENTERS	50.91	50.91	40.47
CEMENT FINISHERS	31.52	29.11	21.20
ELECTRICAL LINE WORKERS	43.49	37.29	28.44
ELECTRICIANS	62.10	62.10	62.10
ELEVATOR CONSTRUCTORS	77.78	40.93	30.55
GLAZIERS	65.60	65.60	20.15
INSULATORS	51.48	51.48	51.48
IRON WORKERS	59.62	59.62	59.62
LABORERS	39.75	39.75	39.75
MILLWRIGHTS	63.53	63.53	50.10
PAINTERS	44.94	44.94	44.94
PILEDRIVERS	69.32	37.64	30.45
PLASTERERS	21.60	28.55	17.50
PLUMBERS/PIPEFITTERS/STEAMFITTERS	60.20	45.65	47.28
POWER EQUIPMENT OPERATORS	58.31	58.31	24.13
ROOFERS-COMPOSITION	22.35	19.07	17.63
ROOFERS-SHINGLE/SLATE/TILE	17.59	17.50	16.45
SHEET METAL WORKERS	63.24	63.24	63.24
SOFT FLOOR LAYERS	47.12	47.12	47.12
SPRINKLER FITTERS	52.73	52.73	52.73
TERRAZZO/MARBLE/TILE FNRS	52.50	52.50	45.45
TERRAZZO/MARBLE/TILE STRS	60.28	60.28	52.63
TRUCK DRIVERS	27.90	26.64	20.03

CERTIFIED: 1/14/15 BY: _____
ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

NOTE: THESE RATES ARE PROMULGATED AND ENFORCED PURSUANT TO THE PREVAILING WAGE REGULATIONS ADOPTED BY THE DEPARTMENT OF LABOR ON APRIL 3, 1992.

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE (302) 451-3423.

NON-REGISTERED APPRENTICES MUST BE PAID THE MECHANIC'S RATE.

PROJECT: 15-21 The Green Phase 2 Restoration, Kent County

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DELAWARE

PREVAILING WAGE

REGULATIONS

STATE OF DELAWARE
DEPARTMENT OF LABOR
OFFICE OF LABOR LAW ENFORCEMENT
225 PENCADER BLVD., STE. 104
NEWARK, DE 19702
(302) 451-3423

Adopted: April 3, 1992
Amended: July 1, 1993
Amended: September 15,1993
Amended: December 28,1994
Amended: October 15, 1995
Amended: January 9, 1998
Amended: December 12, 2000
Amended: July 11, 2001
Amended: October 13, 2003

Last Edited: February 2, 2009

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REGULATIONS
PREVAILING WAGES

Pursuant to 29 Del.C. §8503(7), the Department of Labor, State of Delaware, hereby promulgates the following rules and regulations to implement the provisions of 29 Del.C. §6960, "Wage provisions in public construction contracts." These regulations supersede Regulations PW101, entitled "Regulations Concerning Apprentices and Supportive Service Program Trainees Employed on State Projects" (adopted April 11, 1978 and repealed April 5, 1992) and "Delaware Prevailing Wage Regulations" (adopted April 5, 1992 as amended September 15, 1993).

I. INTRODUCTION

The prevailing wage law states that the specifications for every contract or aggregate of contracts relating to a public works project in excess of $100,000 for new construction (including painting and decorating) or $15,000 for alteration, repair, renovation, rehabilitation, demolition or reconstruction (including painting and decorating of building or works) to which this State or any subdivision thereof is a party and for which the State appropriated any part of the funds and which requires or involves the employment of mechanics and/or laborers shall contain a provision stating the minimum wages to be paid various classes of laborers and mechanics which shall be based upon the wages that will be determined by the Delaware Department of Labor, Division of Industrial Affairs, to be prevailing in the county in which the work is to be performed.

II. ADMINISTRATION

The prevailing wage law assigns to the Department of Labor the responsibility for predetermining wage rates prevailing for the corresponding classes of laborers and mechanics employed on projects similar to the contract work in the counties where the work is to be performed. The Secretary of Labor has delegated the prescribed functions of the Department to the Administrator of the Office of Labor Law Enforcement of the Division of Industrial Affairs. The Office of Labor Law Enforcement has responsibility for enforcing and determining the prevailing rates, and ensuring that prevailing wages are paid in accordance with the provisions of the law.

Enforcement responsibility includes the conducting of investigations regarding compliance with the law; settling, adjusting and adjudicating, by informal means, cases involving the payment of prevailing wages; coordinating the enforcement activities of the various State agencies having contract compliance and enforcement responsibilities; requiring the withholding of payments to employers who have failed to pay prevailing wages; and recommending the commencement of legal proceedings against those failing to comply with the law.

III. CONCEPTS AND DEFINITIONS

This section presents definitions and explanations to provide a basic understanding of elements inherent in collecting wage data and issuing wage determinations, and enforcing prevailing rates.

A. **Activity Covered.** 29 Del.C. §6960 applies to every contract or aggregate of contracts relating to a public works project in excess of $100,000 for new construction (including painting or decorating) or $15,000 for alteration, repair, renovation, rehabilitation, demolition or reconstruction (including painting and decorating of building or works) to which this State or any subdivision thereof is a party and for which the State appropriated any part of the funds and which requires or involves the employment of mechanics and/or laborers.

B. **"Building" or "Work".** The terms "building" or "work" generally include construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work. The terms include without limitation, buildings, structures, and improvements of all types, such as bridges, dams, plants, highways, parkways, streets, tunnels, sewers, mains, power lines, pumping stations, heavy generators, railways, airports, terminals, docks, piers, wharves, buoys, jetties, breakwaters, levees, canals, dredging, shoring, rehabilitation and reactivation of plants, scaffolding, drilling, blasting, excavating, clearing, and landscaping. The manufacture or furnishing of materials, articles, supplies or equipment is not a "building" or "work" within the meaning of the regulations unless conducted at the site of such a building or work.

C. **Laborers and Mechanics**. The terms "laborer" and "mechanic" include at least those workers whose duties are manual or physical in nature (including those workers who use tools or who are performing the work of a trade), as distinguished from mental or managerial. The term "laborer" or "mechanic" includes apprentices and Supportive Service Program (SSP) trainees. The term does not apply to workers whose duties are primarily administrative, executive, or clerical, rather than manual. Persons employed in a bona fide executive, administrative, or professional capacity are not deemed to be laborers or mechanics. Working foremen who devote more than twenty (20) percent of their time during a workweek to mechanic or laborer duties are deemed to be laborers and mechanics for the time so spent.

The terms "laborers" and "mechanics" do not apply to watchmen, guards, dispatchers, or weighmasters. The following classifications of workers are recognized by the Department:

Asbestos Workers
Boilermakers
Bricklayers
Carpenters
Cement Finishers
Electrical Line Worker
Electricians
Elevator Constructors
Glaziers
Insulators
Iron Workers
Laborers
Millwrights
Painters

Pile Driver
Plasterers
Plumbers/Pipefitters/Steamfitters
Power Equipment Operators
Roofers – Composition
Roofers – Shingle, Slate and Tile
Sheet Metal Workers
Soft Floor Layers
Sprinkler Fitters
Terrazzo/Marble/Tile Setters
Terrazzo/Marble/Tile Finishers
Truck Drivers

Definitions for each classification are contained in a separate document entitled "Classifications of Workers Under Delaware's Prevailing Wage Law." Workers shall be classified by the Department of Labor with the advice of the Prevailing Wage Advisory Council members. Classification determinations shall be recorded by the Department as they are made and shall be published annually.

Laborers and mechanics are to be paid the appropriate wage rates for the classification of work actually performed, without regard to skill.

D. **Apprentices and Supportive Service Program Trainees**.

1. **Definitions.** As used in this section:
   a. The term **"apprentice"** means persons who are indentured and employed in a bona fide apprenticeship program and individually registered by the program sponsor with the Delaware Department of Labor.
   b. The term **"apprenticeship agreement"** means a written agreement between an apprentice
   c. and either his/her employer or a joint apprenticeship committee which contains the terms and conditions of the employment and training of the apprentice.
   d. The term **"apprenticeship program"** means a complete plan of terms and conditions for the employment and training of apprentices.
   e. The term **"joint apprenticeship committee"** means a local committee equally representative of employers and employees which has been established by a group of employers with a bona fide bargaining agent or agents to direct the training of apprentices with whom it has made agreements.
   f. The term **"SSP Trainee"** or **"trainee"** means a participant in the "Supportive Service Program" mandated by the Federal Highway Administration for federally aided state highway projects.
   g. The term **"registration"** means the approval by the Department of Labor of an apprenticeship program or agreement as meeting the basic standards adopted by the Bureau of Apprenticeship and Training, United States Department of Labor. The term "registration" for SSP Trainees means the individual registration of a participant in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.
2. **Employment of Apprentices and SSP Trainees on State Projects.**
   a. Apprentices and SSP Trainees will be permitted to work as such on State contracts in excess of $100,000 for new construction or $15,000 for alteration, repair, renovation, rehabilitation, demolition or reconstruction only when they are registered with the Department of Labor or an approved SSP Training

Program. **b.** The mechanic's rate on all such State contracts is that rate determined by the Department of Labor. The percentage of the mechanic's rate that the registered apprentice or SSP Trainee receives will be the percentage that the apprentice or trainee qualifies for under the terms of the individual's formal Apprenticeship/Trainee agreement.

b. Any person employed at an apprentice or trainee wage rate who is not registered as above, shall be paid the wage rate determined by the Department of Labor for the classification of work (s)he actually performed.

c. The ratio of apprentices to mechanics on the site of any work covered by 29 Del.C. §6960 in any craft classification may not be greater than the ratio permitted to the contractor for the entire workforce under the registered apprenticeship program. Any apprentice performing work on the job site in excess of the ratio permitted under the registered program must be paid not less than the wage rate that the applicable wage determination specifies for the work (s)he actually performs.

d. Entitlement to mechanic's wages shall be based upon seniority in the apprenticeship program or (in the case of equal seniority) seniority on the job site.

3. Records.

a. Every employer who employs an apprentice or SSP trainee under this part must keep the records required by Title 19, Delaware Code, Chapters 9 and 11, including designation of apprentices or trainees on the payroll. In addition, every employer who employs apprentices or SSP trainees shall preserve the agreements under which the individuals were employed.

b. Every joint apprenticeship committee or SSP Program sponsor shall keep a record of the cumulative amount of work experience gained by the apprentice or trainee.

c. Every joint apprenticeship committee shall keep a list of the employers to whom the apprentice was assigned and the period of time (s)he worked for each. Every SSP Program sponsor shall keep a list of the projects to which the trainee was assigned and the period of time (s)he worked on each.

d. The records required by paragraphs (a), (b), and (c) of this section shall be maintained and preserved for at least three (3) years from the termination of the apprenticeship or training period. Such records shall be kept safe and accessible at the place or places of employment or at a central location where such records are customarily maintained. All records shall be available at any time for inspection and copying by the Department of Labor.

E. **Working Foremen**. 29 Del.C. §6960 does not apply to (and therefore survey data are not collected for) workers whose duties are primarily administrative, executive or clerical, rather than manual. However, working foremen who devote more than twenty (20) percent of their time during a workweek to mechanic or laborer duties are laborers and mechanics for the time so spent and data will be collected for the hours spent as laborers or mechanics.

F. **Helpers**. Helper classifications are not recognized by the Department of Labor. All laborers and mechanics are to be paid the appropriate wage rate for the classification of work actually performed, without regard to skill.

G. **Construction Projects**. In the wage determination process, the term "project" refers to construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work away from the site of the work and consists of all construction necessary to complete a facility regardless of the number of contracts involved so long as all contracts awarded are closely related in the purpose, time and

place. For example, demolition or site clearing work preparatory to construction is considered a part of the project.

1. **Character Similar**. 29 Del.C. §6960 requires the predetermination of wage rates which are prevailing on projects of a "character similar to the construction work." As a general rule, the Department identifies projects by end use type and classifies them into three major categories:
   a. **Building Construction**. Building construction generally is the construction of sheltered enclosures with walk-in access for the purpose of housing persons, machinery, equipment, or supplies. It includes all construction of such structures, the installation of utilities and the installation of equipment, both above and below grade level as well as incidental grading, utilities and paving. Additionally, such structures need not be "habitable" to be building construction. The installation of heavy machinery and/or equipment shall not change the project's character as a building. Examples: Alterations and additions to nonresidential buildings; Apartment buildings (5 stories and above); Arenas (enclosed); Auditoriums; Automobile parking garages; Banks and financial buildings; Barracks; Churches; Hospitals; Hotels; Industrial buildings; Institutional buildings; Libraries; Mausoleums; Motels; Museums; Nursing and convalescent facilities; Office buildings; Outpatient clinics; Passenger and freight terminal buildings; Police stations; Post offices; City halls; Civic centers; Commercial buildings; Court houses; Detention facilities; Dormitories; Farm buildings; Fire stations; Power plants; Prefabricated buildings; Remodeling buildings; Renovating buildings; Repairing buildings; Restaurants; Schools; Service stations; Shopping centers; Stores; Subway stations; Theaters; Warehouses; Water and sewage treatment plants (building only).
   b. **Heavy Construction**. Heavy projects are those that are not properly classified as either "building" or "highway". Unlike these classifications, heavy construction is not a homogeneous classification. Examples of Heavy construction: Antenna towers; Bridges (major bridges designed for commercial navigation); Breakwaters; Caissons (other than building or highway); Canals; Channels; Channel cut-offs; Chemical complexes or facilities (other than buildings); Cofferdams; Coke ovens; Dams; Demolition (not incidental to construction); Dikes; Docks; Drainage projects; Dredging projects; Electrification projects (outdoor); Flood control projects; Industrial incinerators (other than building); Irrigation projects; Jetties; Kilns; Land drainage (not incidental to other construction); Land leveling (not incidental to other construction); Land reclamation; Levees; Locks, Waterways; Oil refineries; Pipe lines; Ponds; Pumping stations (pre-fabricated drop-in units); Railroad construction; Reservoirs; Revetments; Sewage collection and disposal lines; Sewers (sanitary, storm, etc.); Shoreline maintenance; Ski tows; Storage tanks; Swimming pools (outdoor); Subways (other than buildings); Tipples; Tunnels; Unsheltered piers and wharves; Viaducts (other than highway); Water mains; Waterway construction; Water supply lines (not incidental to building); Water and sewage treatment plants (other than buildings); Wells.
   c. **Highway Construction**. Highway projects include the construction, alteration or repair of roads, streets, highways, runways, taxiways, alleys, trails, paths, parking areas, greenway projects and other similar projects not incidental to building or heavy construction. Examples: Alleys; Base courses; Bituminous treatments; Bridle paths; Concrete pavement; Curbs; Excavation and

embankment (for road construction); Fencing (highway); Grade crossing elimination (overpasses or underpasses); Parking lots; Parkways; Resurfacing streets and highways; Roadbeds; Roadways; Shoulders; Stabilizing courses; Storm sewers incidental to road construction; Street Paving; Guard rails on highway; Highway signs; Highway bridges (overpasses; underpasses; grade separation); Medians; Surface courses; Taxiways; Trails.

d. **Multiple Categories**. In some cases a project includes construction items that in themselves encompass different categories of construction. Generally, a project is considered mixed and a "multiple schedule" used if the construction items are substantial in relation to project cost, i.e. more than twenty (20) percent. Only one schedule is used if construction items are "incidental" in function to the overall character of a project (e.g., paving of parking lots or an access road on a building project), and if there is not a substantial amount of construction in the second category.

2. **Site of Work**. A basic characteristic of the construction industry is the continual shift in the site of employment. 29 Del.C. §6960 provides that prevailing wages are to be paid to "...all mechanics and laborers employed directly upon the site of the work ..." (emphasis added). The site of the work is limited to the physical place or places where the construction called for in the contract will remain when work on it has been completed.

H. **Prevailing Wage Rates.** Every contract and the specifications for every contract to which section 6960 applies are required to contain a provision stating the minimum wages to be paid various classes of laborers and mechanics. These rates are to be based upon the wages that the Department of Labor determines to be prevailing for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the county in which the work is to be performed, as reported in the Department's annual prevailing wage survey. The prevailing wage shall be the wage paid to a majority of employees performing similar work as reported in the Department's annual prevailing wage survey or, in the absence of a majority, the weighted average wage paid to all employees reported.

I. **Wages.** The term "wages" means the basic hourly rate of pay plus fringe benefits as defined below.

J. **Fringe Benefits.** Fringe benefits may be considered in determining whether an employer has met his/her prevailing wage obligations. As a general rule, any fringe benefit may be considered as long as the employer is not legally required to provide it. Therefore, benefits such as health, welfare or retirement benefits, vacation, holiday pay or sick leave pay could be considered fringe benefits. Employer payments for unemployment insurance, workers' compensation, FICA, etc. (which are required by law) would not be considered fringe benefits.

In order to be considered a valid fringe benefit, payments must be made either in cash, or contributed to an irrevocable escrow account at least once each month. "Irrevocable" means that the benefit may not be forfeited. However, a benefit plan can be considered by the Department provided that payments to the plan are made irrevocably by the employer, even though certain employees may forfeit their individual rights to the benefits under certain prescribed conditions. Thus, if payments are made by the employer, and no return of those payments is possible, the plan would be acceptable, even though individual employees might not receive the benefits under certain situations. Benefits forfeited by such employees remain in an escrow account for the use of the other employees.

The actual cost of the benefit to the employer is the basis for evaluating the value of the fringe benefit. Administration costs are not considered fringe benefits. The cost of the benefits must be apportioned between employment on both public and private projects. Thus, the total value of the benefit would be divided by the total amount of time worked. This will result in benefit per unit of time which would be equally applicable to public and private employment projects. Example: an employee works two weeks (80 hours) on a public project and two weeks (80 hours) on a private project. The employer pays $160 for the employee's health insurance for the month. The value of the benefit is $l.00 per hour. The employer is not permitted to apply the entire premium to the public project alone.

K. **Peak Week**. In determining prevailing wages, the Department utilizes a "peak week" survey concept to ensure that wage and fringe benefit data obtained from employers reflects for each classification, the payroll period during which the greatest number of workers in each classification is used on a project. The survey solicits the number of employees and wages paid at each given rate during the peak week. The contractor or reporting organization selects the week (between July l to December 31 of the previous year) during which the greatest number of each classification of laborers and mechanics was working. Peak weeks may be different for each classification of worker.

L. **Wage Determinations**. A "wage determination" is the listing of wages (including fringe benefits) for each classification of laborers and mechanics, which the Administrator has determined to be prevailing in a given county and type of construction. Wage determinations are issued annually.

M. **Maintenance Work.** To "maintain" means to preserve or keep in an existing state or condition to prevent a decline, lapse, or cessation from that state or condition. Wages paid to workers performing maintenance work shall not be used in determining prevailing wage rates.

N. **Area**. The term "area" in determining wage rates under 29 Del.C. §6960 shall mean the county of the State in which the work is to be performed. The term "area" in determining classifications of workers under 29 Del.C. §6960 shall mean the State of Delaware.

O. **Secretary**. "Secretary" means the Secretary of Labor for the State of Delaware.

P. **Administrator**. "Administrator" means the Administrator of the Office of Labor Law Enforcement for the Delaware Department of Labor, Division of Industrial Affairs.

Q. **Department**. "Department" means the Delaware Department of Labor.

IV. DETERMINING PREVAILING WAGES

The Department of Labor shall conduct an annual survey for obtaining and compiling wage rate information and shall encourage the voluntary submission of wage data by contractors, contractors' associations, labor organizations, public officials and other interested parties, reflecting wage rates paid to laborers and mechanics on various types of construction in the area.

A. **Scope of Task**. State directed and assisted construction activity is not restricted to any geographic sector of the state or to any particular type of construction. As a result, data collection methods employed by the Department for gathering prevailing wage information must be capable of determining patterns of wage compensation, including fringe benefits, for virtually all classifications of construction workers in at least the three major types of construction, within each of the three counties in Delaware. And,

since the objective is determining "prevailing" wages, the collection of data must be completed within a relatively brief time frame.

B. **Data to be Collected.** Operation of the prevailing wage program necessitates an annual effort by the Department to obtain, compile and analyze wage rate information. This section explores the nature of the data and the means of collection.

1. **What Information.** Wage rates are issued for each classification of laborer and mechanic that will likely be employed in State funded or assisted construction in a certain type of construction. Information on wages paid, therefore, must be collected and tabulated on the basis of distinct job classifications and construction categories. The survey reporting form used by the Department to collect wage and fringe information, "Report of Construction Wage Rates", provides for reporting data which includes the contractor's name and address, telephone number, project description and location, the highest number of workers employed in each classification during the peak week of the survey period (which shall be within the period July l to December 31 of the year preceding the request for data) and the wage rate, including bona fide fringe benefits, paid to each worker.
2. **Geographic Scope.** A prime objective of the prevailing wage law is to protect local rates of pay and 29 Del.C. §6960 stipulates that the "area" for the determination of wage rates is to be the county in which the work is performed.

V. THE SURVEY

The purpose of prevailing wage surveys is to collect information on wage and fringe benefit rates paid to mechanics and laborers working on construction projects of a similar character in a predetermined geographic area and calendar period. The Department attempts to give each contractor equal opportunity to be included in the final data base from which the prevailing rates are derived. The Department shall conduct the survey in accordance with the following steps:

A. Plan the Survey.

The Department shall begin the survey preparation process no later than November of each year. Forms will be printed and supplies (envelopes, postage, etc.) will be ordered in preparation for the survey mailing. The Department will request from the Division of Unemployment Insurance a computer printout (with two sets of address labels) of the names and addresses of all employers in the following Standard Industrial Classification (SIC) Codes, who reported workers during the calendar year in which the request is made:

- 1522 Residential Buildings, Other Than Single-Family [The Department will specify that buildings under five stories should not be reported]
- 1541 Industrial Buildings and Warehouses
- 1542 Nonresidential Buildings, Other Than Industrial Buildings and Warehouses
- 1611 Highway and Street Construction, Except Elevated Highways
- 1622 Bridge, Tunnel, and Elevated Highway Construction
- 1623 Water, Sewer, Pipeline, and Communications and Power Line Construction
- 1629 Heavy Construction, Not Elsewhere Classified
- 1711 Plumbing, Heating and Air Conditioning
- 1721 Painting and Paper Hanging
- 1731 Electrical Work

- 1741 Masonry, Stone Setting, and Other Stone Work
- 1742 Plastering, Drywall, Acoustical, and Insulation Work
- 1743 Terrazzo, Tile, Marble, and Mosaic Work
- 1751 Carpentry Work
- 1752 Floor Laying and Other Floor Work, Not Elsewhere Classified
- 1761 Roofing, Siding, and Sheet Metal Work
- 1771 Concrete Work
- 1781 Water Well Drilling
- 1791 Structural Steel Erection
- 1793 Glass and Glazing Work
- 1794 Excavation Work
- 1795 Wrecking and Demolition Work
- 1796 Installation or Erection of Building Equipment, Not Elsewhere Classified
- 1799 Special Trade Contractors, Not Elsewhere Classified

The Department will begin to assemble the survey packets in mid-December of each year in preparation for the early January mailing.

B. Conduct the Survey.

On or before January 7th of each year, survey forms will be mailed to every employer identified by the Division of Unemployment Insurance as having employed workers in the SIC Codes listed above during the calendar year preceding the collection of data. Completed survey forms must be received by the Department or postmarked no later than February 8 of the survey year in order to be used in determining prevailing rates for that year. All other forms not complying with this deadline shall not be included. In the event that February 8th falls on a Saturday, Sunday, or legal holiday, the deadline for submitting survey forms shall be the next Department business day following the February 8th deadline.

By January 10th of each year, the Department shall notify the Delaware Contractor's Association, the Building Trades Council of Delaware, the Associated Builders and Contractors, the Delaware State AFL-CIO, the Secretary of the Department of Administrative Services, the Secretary of the Department of Transportation and the Roofing Contractors Association that the annual survey is being conducted. The notification shall contain a copy of the list of employers to whom survey forms were mailed and shall invite the addressees to submit the names and addresses of any employers whose names do not appear on the list. The notification shall also contain blank survey forms for the organizations' use.

C. Conduct Follow-Up.

On or before February 1st of each year, the Department shall mail a second notice to all employers who failed to respond to the first request for data. A second copy of the Department's master mailing list (indicating the employers who responded) shall be sent to the organizations listed in the preceding paragraph so that they can encourage the voluntary participation of their members.

D. Clarify and Analyze Data.

The data clarification process is to begin immediately upon receipt of survey responses. Each survey response is reviewed to determine completeness, appropriateness, and accuracy of data.

E. Code and Record Data.

Survey responses are to be coded as follows:

- "A" Survey response is usable (i.e., it is timely, complete, appropriate, and accurate)
- "B" Employer reports no employees during survey period
- "C" Survey response is incomplete
- "D" Survey response is not applicable
- "E" Survey request not deliverable at address used/Respondent not identified on survey form/Information is not usable

Data from usable responses are to be recorded weekly in a summary ledger which contains a breakdown of each classification of worker for each type of construction for each county. Survey responses coded "A" shall be filed by county and type of construction. Survey responses coded "B", "D", and "E" shall be kept in files separate from the usable responses.

Respondents who submit code "C" survey responses (incomplete) shall be contacted by telephone by the Department. The Department will give the respondent an opportunity to supply the missing information. Failure to submit the missing information prior to the publication of the Prevailing Wage Determination (see Regulation VI.C.) will result in a disqualification of the survey response (to the extent that it is not usable).

The master mailing list shall be coded weekly to show the identity of survey participants as well as the number and types of responses.

All survey responses and documents are to be retained by the Department for a period of three years.

F. Determine Adequacy of Data.

At the conclusion of the survey period, the Department will review the survey ledger to determine the adequacy of data in each classification in each type of construction in each county. Data will be considered adequate if the worker classification contains the wages of ten or more employees. Classification data not meeting the above criteria will be added to the previous year's survey data for the same classification. If the data still do not reflect the wages paid to at least ten workers, the data will be considered inadequate.

G. Compute Prevailing Wage Rates.

The Department will enter usable data (from the summary ledgers) in the computer. If a majority (i.e., more than 50% of the workers reported in a particular category are paid at the same rate, that rate shall be the prevailing wage rate for the classification. For example:

Laborers / New Castle County / Building Construction

Workers	Rate of Pay	[including benefits]
50 @	$17.25	= Majority
39 @	$16.75	
10 @	$17.55	
99		

The prevailing wage rate = $17.25

In the absence of a majority, the computer will determine the average (mean) of the wages paid, weighted by the numbers of workers paid at each rate. For example:

Laborers/New Castle County/Building Construction

Workers	Rate of Pay	[including benefits]
25 @	$15.50	= $387.50
25 @	17.25	= 431.25
39 @	16.75	= 653.25
10 @	17.55	= 175.50
99		$1,647.50

$1,647.50 ÷ 99 workers = $16.64 prevailing rate

H. Determine Wage Rates for Classes of Workers For Which Inadequate Data Are Received.

The Department is required by law to determine wages to be paid to all classes of workers employed on public projects. For that reason, the Department must have a means by which it can determine rates for which no data or inadequate data were received. If no data are received for a given classification, or if inadequate data are received (i.e., fewer than 10 workers reported in a given classification), the previous year's prevailing rates shall be reissued.

VI. ISSUING WAGE DETERMINATIONS.

A. Publication of Preliminary Determination: On or before February 15th of each year, the Department shall publish a "Preliminary Determination of Prevailing Wage Rates." In the event that February 15th falls on a Saturday, Sunday, or legal holiday, the Department shall issue the preliminary results on the next Department business day following February 15th.

B. Appeals: From February 15th to February 25th, the Administrator of the Office of Labor Law Enforcement will consider protests and inquiries relating to the preliminary results. An interested person seeking review or reconsideration of a wage determination must present a request in writing accompanied by a statement with any supporting data or other pertinent information.

Requests for reconsideration must be substantive and specific in order to be considered by the Department. For example: A request stating that, "the highway rates don't look right", would not be considered substantive or specific. However, a request stating that, "residential rates appear to have been erroneously included for carpenters in New Castle County Building Construction" would be considered substantive and specific.

From February 25th to March 1st, the Department will attempt to gather information necessary to resolve objections and requests for reconsideration. However, no appeals, objections, or requests will be considered if received by the Department after the February 25th deadline. The Department will respond in writing to all interested persons who submit a written request for review.

An appeal from the Administrator's decision must be made in writing and received by the Secretary of Labor within five calendar days from the date of the postmark on the Administrator's decision. The Secretary or his/her designee shall render a final decision in writing.

C. **Issuance of Determination:** On or before March 15th of each year, the Department shall publish its annual "Prevailing Wage Determination." The Determination shall be valid for a period of one year or until subsequent rates or amendments are issued by the Department.

   Public agencies (covered by the provisions of 29 Del.C. §6960) are required to use the rates which are in effect on the date of the publication of specifications for a given project. “Date of publication” means the date on which the specifications are made available to interested persons (as specified in the published bid notice). In the event that a contract is not executed within one hundred and twenty (120) days from the earliest date the specifications were published, the rates in effect at the time of the execution of the contract shall be the applicable rates for the project.

D. **Post Determination Actions:** Wage determinations will be modified only for the purpose of correcting errors. Determinations will not be modified to include survey data received after the close of the survey period.

   1. **Amendment to Correct Errors of Inadvertence**
      Amendments may be issued to correct inadvertent errors in the written text of a wage determination. The sole purpose is to correct wage schedules so that the wage determination will accurately and fully reflect the actual rates prevailing in the locality at the time the wage determination was issued. Such amendments (which may be issued at any time) are used to correct errors due to transposition of rates and other clerical mistakes made in processing the schedule; they are not used to correct errors in judgment. Contracts which have already been awarded will not be affected by such amendments. Amendments issued more than ten (10) days prior to a bid opening must be used. Amendments issued less than ten (10) days prior to a bid opening may be disregarded.
   2. **Amendment to Correct Errors in Survey Data**
      Amendments which affect the validity of a wage determination may be issued to correct errors in rates resulting from erroneous information submitted by survey participants.

      When the Department of Labor is notified in writing that a survey participant has submitted erroneous data (with regard to wages, fringe benefits, characterization of project, classification of workers, or county in which the work was performed), the Department shall determine the validity of the data. Corrections, if warranted, shall be made in the form of amended determinations at the end of each calendar quarter (beginning with the date the wage determination was issued). Contracts which have already been awarded will not be affected by such amendments. Amendments issued more than ten (10) days prior to a bid opening must be used. Amendments issued less than ten days prior to a bid opening may be disregarded.
   3. **Incorrect Wage Determinations: Before Contract Award**
      If notification is received from the Department of Labor any time prior to the contract award that the bid documents contain the wrong wage schedule, such schedule or wage determination shall no longer be valid and may not be used - without regard to whether the bid opening has occurred.

If the bid documents contain no wage schedule, it is the contractor's (or subcontractor's) responsibility to contact the Department of Labor for the correct wage schedule. Such requests must be in writing. Responses to such requests will be in writing. Any contractor or subcontractor found using an incorrect wage schedule will be required to pay the correct wages based upon the proper classification of work as determined by the Department of Labor.

4. **Lack of Valid Wage Determination: After Contract Award**
   If a contract is awarded without a wage determination or awarded with an incorrect wage determination, the contractor is responsible for the payment of the appropriate prevailing wage rates as determined by the Department of Labor.
5. **Additional Classifications**
   Any class of laborers or mechanics which is not listed in the applicable wage determination but which is to be employed under the contract is to be classified by the Department of Labor in accordance with the procedures set forth in Part III, Section C, of these regulations.
6. **Determination of Wages for Classifications for Which No Rates Are Published**
   Whenever a public project requires the services of a laborer or mechanic for which no rate has been published, the Department shall be notified in writing and shall determine the worker classification (from among the 26 classifications recognized by the Department of Labor) and the rate to be paid. The rate shall be determined as follows:
   a. baseline rate in each county, the Department of Labor will determine the relationship between the "Building Construction" rates and the rates of the type of construction for which the rate is sought. To determine the relationship, (which is to be expressed as a percentage), the Department will use only those rates which were determined by data received in the relevant survey.
   b. The Department will compare only those classifications for which corresponding rates were determined.
   c. The total of the corresponding rates will be determined for each type of construction. The Heavy or Highway total will be divided by the Building rate to find what percentage of the Heavy or Highway rate to the Building rate.
   d. The Department of Labor will multiply the Building rate for the requested classification of worker by the percentage determined in "c" to establish the applicable prevailing wage rate.

   Hypothetical example:

   A plumber's rate is needed for a New Castle County Highway project. The Department of Labor has not published a rate for this classification. The Department of Labor will determine the relationship between New Castle County Highway rates and Building rates, comparing only corresponding rates which were actually determined by the relevant survey (rates carried forward from previous years due to lack of sufficient data are not to be used).

	N.C.C. Building	N.C.C. Highway
Bricklayers	$ 19.65	$ 12.29
Carpenters	$ 23.37	$ 21.69
Cement Finishers	$ 23.55	$ 15.52
Laborers	$ 13.62	$ 10.60
Power Equipment Operator	$ 22.94	$ 15.77

Truck Drivers	$ 15.15	$ 13.75
	$118.28	$ 89.62

$89.62 ÷ 118.28 = 75.77%
The plumber's rate for New Castle County Building is $26.54. $26.54 x 75.77% = $20.11
The plumber's rate for New Castle County Highway = $20.11

The same method can be used between the corresponding types of construction when the Building Construction rates do not contain a rate for the requested classification of worker; i.e., Heavy Construction rates in Sussex County can be compared with Heavy Construction rates in New Castle.

VII. ENFORCEMENT

The authority to enforce the prevailing wage rates derives from 29 Del.C. §6960(b) which states: "The Department of Labor shall investigate all claims that the prevailing wage rates as provided for under this section are not being or have not been paid."

A. **DUTIES OF CONTRACTORS**.

Every contractor and subcontractor on a public project shall:

1. Post in a prominent and accessible place at the site of the work, a legible copy of the applicable prevailing wage determination issued by the Department. The notice must remain posted during the life of the contract and must be supplemented in its entirety whenever amended wage rate determinations are issued by the Department.
2. Pay all mechanics and laborers employed directly upon the site of the work, unconditionally and not less often than once a week and without subsequent deduction or rebate on any account, the full amounts accrued at the time of payment, computed at wage rates not less than those stated in the prevailing wage rate determination.
   a. Laborers or mechanics performing work in more than one occupation shall be compensated at least the rate specified for each occupation for the time actually worked therein.
   b. An employer shall not pay or permit any worker to accept wages less than the prevailing rate of wages as determined by the Department;
   c. Every employer performing work on a public project shall furnish weekly payroll reports to the Department of Labor on forms provided (upon request) by the Department. Payroll reports shall be mailed or delivered by the employer to the Department within one week from the last work day covered by the report. Failure to complete each and every section of the report (including the requirement that the form be notarized) will constitute a failure to submit sworn payroll information as required by the Department.
   d. An employer shall not, at any time during the project, pay less than the prevailing rate of wages for each hour worked, regardless of the rate of pay being paid at any other time.
   e. An employer shall not pay less than the prevailing rate of wages by docking pay, docking time, or deducting pay for any purpose unless provided for by law including the Wage Payment and Collection Act of the State of Delaware (19 Del.C. §1107).
   f. A person shall not, either for himself/herself or any other person, request, demand, or receive, either before or after an employee is engaged, that such employee pay back, return, donate, contribute, or give any part or all of said employee's wages, salary, or thing of value, to any person, upon the statement, representation, or understanding that failure to comply with such request or demand will prevent

such employee from procuring or retaining employment. This paragraph does not apply to any agent or representative of a duly constituted labor organization acting in the collection of dues or assessments of such organization as permitted by law.

g. A person shall not, directly or indirectly, aid, request, or authorize any person to sign a release for any claim of wages with the intent to avoid payment of the prevailing wage rates.

3. Keep the following records for a period of three years:
   a. The name and address of each employee;
   b. The social security number of each employee;
   c. daily log for each individual employed upon the site of construction. The log must list (in general terms) the tasks performed by each employee and the amount of time spent performing each task. (examples, “hung drywall”, “wired lighting fixtures”, etc.);
   d. Each employee's basic hourly rate of pay (If an employee performs public project work in more than one trade, the employer's record must reflect the hourly rate paid for each type of work performed; If an employee performs both prevailing wage work and non-prevailing wage work, the records must reflect the rates paid for each.)
   e. The number of hours worked in each occupation on the project in the applicable pay schedule, the number of hours worked in each day, and the total number of hours worked each week;
   f. The amount of wages paid each employee;
   g. The amount of wages paid each employee as fringe benefit payments;
   h. The amount of any deductions withheld from each employee's wages; and
   i. An accurate description of the nature of the deductions withheld from each employee's wages. (Fringe benefit deductions must be supported by a written fringe benefit policy as required by the Wage Payment and Collection Act.)

B. **INVESTIGATION**

A complaint may be filed with the Department by any employee upon a public project or any interested party. The complaint shall be in writing. Upon receipt of a complaint or upon its own motion the Department shall initiate an investigation.

1. The Department shall notify the employer that a complaint has been filed and/or that an investigation has been initiated. The Department may request (or subpoena, if necessary) records, documents, or testimony necessary to make a determination as to the validity of the complaint or the employer's compliance with the law.
2. Upon finding that an employer has not paid or is not paying the correct prevailing wage rates, the Department of Labor shall notify the employer of the violations by certified mail and make an effort to obtain compliance.
3. Upon failure to obtain compliance within fifteen (15) days of receipt of said certified mail, the Department may direct the contracting agency and/or the prime contractor to withhold payments to the employer (in an amount equal to the prevailing wage deficiencies, as determined by the Department) which are to be remitted to the Department for distribution upon resolution of the matter. In addition, the Secretary may terminate all rights of the employer to proceed with the work under the contract and the employer shall be responsible for all damages resulting therefrom.
4. If the dispute between the Department and the employer pertains to the classification of workers as determined by the Office of Labor Law Enforcement, the determination shall be reviewable by the Secretary or his/her designee and shall be reversed only upon a finding of abuse of discretion. Such appeals from the Office of Labor Law

Enforcement's decision must be made in writing and must be received by the Secretary within fifteen (15) days from receipt of the Department's certified letter.

C. **HEARINGS**

A hearing shall be held only in cases involving the termination of rights to proceed with the work under the public construction contract.

D. HEARING PRACTICES AND PROCEDURES

1. **SCOPE OF RULES**

   These rules shall govern the conduct of hearings initiated by the Department of Labor pursuant to 29 Del.C. §6960(d) to terminate all rights of the contractor or subcontractor to proceed with work under a public construction contract for failure to pay prevailing wage rates.

2. **INITIATION OF HEARING**

   The Secretary of Labor may initiate a hearing by notifying the contractor or subcontractor by registered mail that said contractor or subcontractor is alleged to have violated 29 Del.C. §6960. The notice shall give 20 days prior notice to all parties as follows:

   a. The notice shall describe the subject matter of the proceedings;
   b. The notice shall give the date, time and place the hearing will be held;
   c. The notice shall cite the law or regulation giving the Department authority to act;
   d. The notice shall inform the party of his/her right to present evidence, to be represented by counsel, and to appear personally or by other representative; and
   e. The notice shall inform the parties that the Department will reach its decision based upon the evidence received.

3. **CONDUCT OF HEARING**

   a. The hearing may be conducted by the Secretary of Labor or by a hearing officer designated for that purpose by the Secretary.
   b. In connection with such hearing, the Secretary or hearing officer may:
      1. Issue subpoenas for witnesses and other sources of evidence, either on the Department's initiative or at the request of any party;
      2. Administer oaths to witnesses;
      3. Exclude plainly irrelevant, immaterial, insubstantial, cumulative and privileged evidence;
      4. Limit unduly repetitive proof, rebuttal and cross-examination;
      5. Hold prehearing conferences for the settlement or simplification of issues by consent, for the disposal of procedural requests or disputes and to regulate and to expedite the course of the hearing.
   c. The conduct of hearing shall not be bound by technical rules of evidence pursuant to 19 Del.C. §105(8).
   d. The burden of proof shall be upon the Department. (If the records maintained by the employer do not provide sufficient information to determine the exact amount of wages owed, the Department may make a determination based on available evidence.)
   e. A record from which a verbatim transcript can be prepared shall be made of all hearings in contested cases. Transcripts shall be made at the request and expense of the requesting party.

4. **PROPOSED ORDERS**

   a. Whenever a hearing officer presides over a hearing (s)he shall prepare a proposed order for the consideration of the Secretary which shall include:

1. A brief summary of the evidence and recommended findings of fact based upon the evidence;
2. Recommended conclusions of law; and
3. Recommended decision.

b. When the proposed order is submitted to the Secretary, a copy shall be delivered to each of the other parties who shall have 10 days to submit in writing to the Secretary exceptions, comments and arguments respecting the proposed order.

5. **RECORD**

With respect to each case, all notices, correspondences between the agencies and the parties, all exhibits, documents in testimony admitted into evidence and all recommended orders, summary of evidence and findings of all interlocutory and final orders of the agency shall be included in the agency's record of the case and shall be retained by the agency for three (3) years.

6. DECISION; FINAL ORDER

a. The Secretary shall make his/her decision based upon the entire record of the case and upon summaries and recommendations of the hearing officer.

b. Every case decision of the Secretary shall be incorporated in a final order which shall include, where appropriate:
   1. A brief summary of the evidence;
   2. Findings of fact based upon the evidence;
   3. Conclusions of law;
   4. Any other conclusion required by the law or the Department of Labor;
   5. A concise statement of the Department of Labor's determination or action on the case.

c. Every final order shall be authenticated by the signature of the Secretary.

d. Every final order shall immediately be mailed or delivered to each party, to the contracting agency, and each other person requesting it.

e. Every final order may be amended or modified by the same procedure used for the initial adoption of the order.

7. **INFORMAL DISPOSITION**

Informal disposition may be made of any matter set for hearing by stipulation, agreed settlement, consent order, or default.

VIII. SUBSEQUENT MODIFICATION OF REGULATIONS

The Secretary may, upon his/her own motion or upon the written request of any interested person setting forth reasonable grounds therefore, revoke or modify these regulations, after an opportunity has been given to interested persons to present their views on proposed changes. These regulations shall take effect in accordance with the requirements of the Administrative Procedures Act which is found at 29 Del. C. Chapter 101.

SO ORDERED, this 13th day of October, 2003.

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Harold E. Stafford
Secretary of Labor

These Regulations were originally adopted April 3, 1992 and became effective on May 4, 1992.

Amended: July 1, 1993
Amended: September 15, 1993
Amended: December 28, 1994
Amended: October 15, 1995
Amended: January 9, 1998
Amended: December 12, 2000
Amended: June 14, 2001
Amended: October 13, 2003

CLASSIFICATION OF WORKERS

UNDER

DELAWARE'S

PREVAILING WAGE LAW

STATE OF DELAWARE
DEPARTMENT OF LABOR
OFFICE OF LABOR LAW ENFORCEMENT
225 CORPORATE BLVD., STE 104
NEWARK, DE 19702
(302) 451-3423

Adopted: April 3, 1992
Amended: July 1, 1993
Amended: September 15, 1993
Amended: December 28, 1994
Amended: August 15, 1996
Amended: September 15, 1997
Amended: July 10, 1998
Amended: June 24, 1999
Amended: July 11, 2001
Amended: October 30, 2003

Last Edited: February 2, 2009

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ASBESTOS WORKER

Removes asbestos from ceilings, walls, beams, boilers, and other structures, following hazardous waste handling guidelines: Removes asbestos pipes. Assembles scaffolding and seals off work area, using plastic sheeting and duct tape. Positions mobile decontamination unit or portable showers at entrance of work area. Builds connecting walkway between mobile unit or portable showers and work area, using handtools, lumber, nails, plastic sheeting, and duct tape. Positions portable air evacuation and filtration system inside work area. Sprays chemical solution over asbestos covered surfaces, using tank with attached hose and nozzle, to soften asbestos. Cuts and scrapes asbestos from surfaces, using knife and scraper. Shovels asbestos into plastic disposal bags and seals bags, using duct tape. Cleans work area of loose asbestos, using vacuum, broom, and dust pan. Places asbestos in disposal bags and seals bags, using duct tape. Dismantles scaffolding and temporary walkway, using handtools, and places plastic sheeting and disposal bags into transport bags. Seals bags, using duct tape, and loads bags into truck.

Applies asbestos, aluminum, pulpwood fiber, plastic panels, brick veneer, or porcelainized metal siding to building exteriors to provide decorative or insulating surfaces: Attaches tar paper, building paper, or other material to building surface, using nails or adhesive cement to provide insulating base. Fastens wood or metal laths to surface, using screws or nails. Fits and fastens siding material to laths, using rule, measuring tape, handtools, power tools, nails, screws, or bolts. Cuts and trims material to shape when fitting siding around windows or corners, using knife, shears, or portable power saw. Waterproofs surface by filling joints or cracks with caulking compound, using putty knife, trowel, or caulking gun. May apply precut siding or may cut material to size and shape at work site. May attach siding to surface of building, using adhesive cement. May attach siding by interlocking pieces through tabs provided at edges, following sequence indicated by numbers printed on reverse of each piece.

BOILERMAKER

Assembles, analyzes defects in, and repairs boilers, pressure vessels, tanks, and vats in field, following blueprints and using handtools and portable power tools and equipment: Locates and marks reference points for columns or plates on foundation, using master straightedge, squares, transit, and measuring tape, and applying knowledge of geometry. Attaches rigging or signals crane operator to lift parts to specified position. Aligns structures or plate sections to assemble boiler frame, tanks, or vats, using plumb bobs, levels, wedges, dogs, or turnbuckles. Hammers, flame- cuts, files, or grinds irregular edges of sections or structural parts to facilitate fitting edges together. Bolts or arc-welds structures and sections together. Positions drums and headers into supports and bolts or welds supports to frame. Aligns water tubes and connects and expands ends to drums and headers, using tube expander. Bells, beads with power hammer, or welds tube ends to ensure leak proof joints. Bolts or welds casing sections, uptakes, stacks, baffles, and such fabricated parts as chutes, air heaters, fan stands, feeding tube, catwalks, ladders, coal hoppers and safety hatch to frame, using wrench. Installs manholes, handholes, valves, gauges, and feedwater connection in drums to complete assembly of water tube boilers. Assists in testing assembled vessels by pumping water or gas under specified pressure into vessel and observing instruments for evidence of leakage. Repairs boilers or tanks in field by unbolting or flame cutting defective sections or tubes, straightening plates, using torch or jacks, installing new tubes, fitting and welding new

sections and replacing worn lugs on bolts. May rivet and caulk sections of vessels, using pneumatic riveting and caulking hammers. May line firebox with refractory brick and asbestos rope and blocks. May fabricate such parts as stacks, uptakes, and chutes to adapt boiler to premises in which it is installed.

Assembles boilers, tanks, vats, and pressure vessels according to blueprint specifications, using power tools and handtools: Reads blueprint to determine location and relationship of parts. Connects firetubes to heads or watertubes to drums and headers of boilers, by expanding and belling ends, using tube expander and beading ends, using power hammer. Drills and taps holes for installation of studs, using portable drill. Tightens bolts to assemble frames, using hand or power wrenches. Mounts casings of watertube boilers, or attaches davit heads, burners, or furnace casing to firetube boilers, using wrenches. Bolts or screws accessories, such as manholes, handholes, fans, gauges, and valves to vessel, using handtools or power wrenches. Replaces defective parts, using power wrenches, prying bars, or handtools. May install and repair refractory brick. May thread and install stay bolts, using pipe wrench and dies. May remove and replace rivets and caulk seams to repair riveted shells and structures, using pneumatic chisel, riveter, and caulking hammer. May cut out defective parts, using acetylene torch.

BRICKLAYER

Lays building materials, such as brick, structural tile, and concrete cinder, glass, gypsum, and terra cotta block to construct or repair walls, partitions, arches, sewers, and other structures: Lays brick pavers for sidewalks. Measures distance from reference points and marks guidelines on working surface to lay out work. Spreads soft bed (layer) of mortar that serves as base and binder for block, using trowel. Applies mortar to end of block and positions block in mortar bed. Taps block with trowel to level, align, and embed in mortar, allowing specified thickness of joint. Removes excess mortar from face of block, using trowel. Finishes mortar between brick with pointing tool or trowel. Breaks bricks to fit spaces too small for whole brick, using edge of trowel or brick hammer. Determines vertical and horizontal alignment of courses, using plumb bob, gaugeline (tightly stretched cord), and level. Fastens brick or terra cotta veneer to face of structures, with tie wires embedded in mortar between bricks, or in anchor holes in veneer brick. May weld metal parts to steel structural members. May apply plaster to walls and ceiling using trowel, to complete repair work.

Lays firebrick and refractory tile to build, rebuild, reline, or patch high-temperature or heating equipment, such as boilers, ovens, furnaces, converters, cupolas, ladles, and soaking pits, according to job orders and blueprints: Lays out work, using chalklines, plumb bobs, tapes, squares, and levels. Calculates angles and courses for building walls, arches, columns, corners and bottoms. Removes burned or damaged brick and cleans surface of setting, using sledgehammer, pry bar, pneumatic chipping gun, scraper and wire brush. Cuts firebrick or refractory materials to size, using brick hammer or powered abrasive saw with refractory or firebrick blade. Spreads fire-clay mortar over brick with trowel and lays brick in place. Spreads or sprays refractories over exposed bricks to protect bricks against deterioration by heat, using trowel or spray gun. Positions or bends special frame or hanger over casings to lay arches. Cuts, notches, or drills openings to provide outlets, pyrometer mountings, brackets and heating elements, using handtools. Patches or replaces firebrick linings of ladles and furnace tap holes. Constructs refractory forms for controlling quantity and flow of molten materials from furnace to rolling machines. May replace bolts, brackets, and heating elements, repair coke oven doors, weld cracks or holes in shell, or perform other repairs. May

pack insulation into shells and frames to insulate heating equipment, such as furnaces, boilers, and ovens.
Sets stone to build stone structures, such as piers, walls and abutments, or lays walks, curbstones, or special types of masonry, such as alberene (acid-resistant soapstone for vats, tanks, and floors), using mason's tools: Shapes stone preparatory to setting, using chisel hammer, and other shaping tools. Spreads mortar over stone and foundation with trowel and sets stone in place by hand or with aid of crane. Aligns stone with plumbline and finishes joints between stone with pointing trowel. May spread mortar along mortar guides to ensure joints of uniform thickness. May clean surface of finished wall to remove mortar, using muriatic acid and brush. May set cut and dressed ornamental and structural stone in buildings.

CARPENTER

Constructs, erects, installs, and repairs structures and fixtures of wood, plywood, and wallboard, using carpenter's handtools and power tools, and conforming to local building codes: Studies blueprints, sketches, or building plans for information pertaining to type of material required, such as lumber or fiberboard, and dimensions of structure or fixture to be fabricated. Selects specified type of lumber or other materials. Prepares layout, using rule, framing square, and calipers. Marks cutting and assembly lines on materials, using pencil, chalk, and marking gauge. Shapes materials to prescribed measurements, using saws, chisels, and planes. Assembles cut and shaped materials and fastens them together with nails, dowel pins, or glue. Verifies trueness of structure with plumb bob and carpenter's level. Erects framework for structures and lays subflooring. Builds stairs and lays out and installs partitions and cabinet work. Covers subfloor with building paper to keep out moisture and lays hardwood, parquet, and wood-strip-block floors by nailing floors to subfloor or cementing them to mastic or asphalt base. Applies shock-absorbing, sound-deadening, and decorative paneling to ceilings and walls. Fits and installs prefabricated window frames, doors, doorframes, weather stripping, interior and exterior trim, and finish hardware, such as locks, letterdrops, and kick plates. Constructs forms and chutes for pouring concrete. Erects scaffolding and ladders for assembling structures above ground level. May weld metal parts to steel structural members. Installs insulation (not sprayed urethane or polyurethane) in connection with carpentry work. Builds rough wooden structures, such as concrete forms, scaffolds, tunnel and sewer supports, and temporary frame shelters, according to sketches, blueprints, or oral instructions: Examines specifications to determine dimensions of structure. Measures boards, timbers, or plywood, using square, measuring tape, and ruler and marks cutting lines on materials, using pencil and scriber. Saws boards and plywood panels to required sizes. Nails cleats (braces) across boards to construct concrete-supporting forms. Braces forms in place with timbers, tie rods, and anchor bolts, for use in building concrete piers, footings, and walls. Erects chutes for pouring concrete. Cuts and assembles timbers to build trestles and cofferdams. Builds falsework to temporarily strengthen, protect, or disguise buildings undergoing construction. Erects scaffolding for buildings and ship structures and installs ladders, handrails, walkways, platforms, and gangways. Installs door and window bucks (rough frames in which finished frames are inserted) in designated positions in building framework, and braces them with boards nailed to framework. Installs subflooring in buildings. Nails plaster grounds (wood or metal strips) to studding to provide guide for plasterer. Fits and nails sheathing (first covering of boards) on outer walls and roofs of buildings.

Plans gypsum drywall installations, erects metal framing and furring channels for fastening drywalls, and installs drywall to cover walls, ceilings, soffits, shafts, and movable partitions

in residential, commercial, and industrial buildings: Reads blueprints and other specifications to determine method of installation, work procedures, and material, tool, and work aid requirements. Lays out reference lines and points for use in computing location and position of metal framing and furring channels and marks position for erecting metalwork, using chalkline. Measures, marks, and cuts metal runners, studs, and furring channels to specified size, using tape measure, straightedge and hand-and portable power-cutting tools. Secures metal framing to walls and furring channels to ceilings, using hand and portable power tools. Measures and marks cutting lines on drywall, using square, tape measure, and marking devices. Scribes cutting lines on drywall, using straightedge and utility knife and breaks board along cut lines. Fits and fastens board into specified position on wall, using screws, hand or portable power tools, or adhesive. Cuts openings into board for electrical outlets, vents or fixtures, using keyhole saw or other cutting tools. Measures, cuts, assembles and installs metal framing and decorative trim for windows, doorways, and vents. Fits, aligns, and hangs doors and installs hardware, such as locks and kickplates.

Installs plasterboard or other wallboard to ceiling and interior walls of building, using handtools and portable power tools: Installs horizontal and vertical metal or wooden studs for attachment of wallboard on interior walls, using handtools. Cuts angle iron and channel iron to specified size, using hacksaw, and suspends angle iron grid and channel iron from ceiling, using wire. Scribes measurements on wallboard, using straightedge and tape measure, and cuts wallboard to size, using knife or saw. Cuts out openings for electrical and other outlets, using knife or saw. Attaches wallboard to wall and ceiling supports, using glue, nails, screws, hammer, or powered screwdriver. Trims rough edges from wallboard to maintain even joints, using knife. Nails prefabricated metal pieces around windows and doors and between dissimilar materials to protect drywall edges. May remove plaster, drywall, or paneling during renovation project, using crowbar and hammer. Installs metal molding at corners in lieu of sealant and tape.

CEMENT FINISHER

Smoothes and finishes surfaces of poured concrete floors, walls, sidewalks, or curbs to specified textures, using handtools or power tools, including floats, trowels, and screeds: Signals concrete deliverer to position truck to facilitate pouring concrete. Moves discharge chute of truck to direct concrete into forms. Spreads concrete into inaccessible sections of forms, using rake or shovel. Levels concrete to specified depth and workable consistency, using hand held screed and floats to bring water to surface and produce soft topping. Smoothes and shapes surfaces of freshly poured concrete, using straightedge and float or power screed. Finishes concrete surfaces, using power trowel, or wets and rubs concrete with abrasive stone to impart finish. Prepares cement surfaces by using a steel shotblaster, scarifier or diamond grinder. Removes rough or defective spots from concrete surfaces, using power grinder or chisel and hammer, and patches holes with fresh concrete or epoxy compound. Molds expansion joints and edges, using edging tools, jointers, and straight edge. May sprinkle colored stone chips, powdered steel, or coloring powder on concrete to produce prescribed finish. May produce rough concrete surface, using broom. May mix cement, using hoe or concrete-mixing machine. Mixes and applies epoxy to cement. May direct subgrade work, mixing of concrete, and setting of forms.

ELECTRICAL LINE WORKER

Installs, maintains, repairs and replaces transmission and distribution power lines and circuits to conduct electrical energy outside of isolated plants and the property lines of any given property, but not electric signs, and not street electrical decorations, except when messenger or guy wire is necessary for support and when fed and controlled from the street. Directs workers in installing light poles or tower equipment, and determines whether light poles or tower equipment are properly aligned. Climbs poles and installs necessary hardware, including insulators, voltage regulators, capacitors or sectionalizers. Strings wire conductors between erected poles. Splices, solders, and insulates conductors and related wiring to join sections of power lines and, to connect transformers and electrical accessories. Constructs and installs ground wires and/or ground rods, guy wires and crossarms, including installing a brace for crossarm if needed. Installs footings for tower, if necessary.

Installs, maintains, repairs and replaces traffic signals. Assembles poles and other hardware, as well as the lighting fixture or traffic light. After the fixture is attached on the pole, directs workers in placing the pole. When the pole is set, attaches the pole with anchor bolts and then pulls and terminates cables. Cuts sensor loops in the asphalt and places sensors in the road for traffic signals. Programs control cabinets and after installation is complete, connects and tests power.

ELECTRICIAN

Plans layout, installs, and repairs wiring (low voltage and high voltage*), electrical fixtures, apparatus, and control equipment, including fiberoptic systems, alarm systems and telecommunication equipment*: Plans new or modified installations to minimize waste of materials, provide access for future maintenance, and avoid unsightly, hazardous, and unreliable wiring, consistent with specifications and local electrical codes. Prepares sketches showing location of wiring and equipment, or follows diagrams or blueprints, ensuring that concealed wiring is installed before completion of future walls, ceilings, and flooring. Measures, cuts, bends, threads, assembles, and installs electrical conduit, using tools, such as hacksaw, pipe threader, and conduit bender. Drills holes in concrete for the placement of electrical wiring. Installs pull wire in empty conduit. Pulls wiring through conduit. Splices wires by stripping insulation from terminal leads, using knife or pliers, twisting or soldering wires together, and applying tape or terminal caps. Connects wiring to lighting fixtures and power equipment, using handtools. Installs control and distribution apparatus, such as switches, relays, and circuit-breaker panels, fastening in place with screws or bolts, using handtools and power tools. Connects power cables to equipment, such as electric range or motor, and installs grounding leads. Lays PVC pipe for main feed electric line. Tests continuity of circuit to ensure electrical compatibility and safety of components, using testing instruments, such as ohmmeter, battery and buzzer, and oscilloscope. Observes functioning of installed equipment or system to detect hazards and need for adjustments, relocation, or replacement.

- **This is added as a clarification. These tasks have always been included within the description of tasks performed by Electricians.**

ELEVATOR CONSTRUCTOR

Assembles and installs electric and hydraulic freight and passenger elevators, escalators, and dumbwaiters, determining layout and electrical connections from blueprints: Studies

blueprints and lays out location of framework, counterbalance rails, motor pump, cylinder, and plunger foundations. Drills holes in concrete or structural steel members with portable electric drill. Secures anchor bolts or welds brackets to support rails and framework, and verifies alignment with plumb bob and level. Cuts prefabricated sections of framework, rails, and other elevator components to specified dimensions, using acetylene torch, power saw, and disc grinder. Installs cables, counterweights, pumps, motor foundations, escalator drives, guide rails, elevator cars, and control panels, using handtools. Connects electrical wiring to control panels and electric motors. Installs safety and control devices. Positions electric motor and equipment on top of elevator shaft, using hoists and cable slings.

GLAZIER

Installs glass in windows, skylights, store fronts, and display cases, or on surfaces, such as building fronts, interior walls, ceilings, and tabletops: Marks outline or pattern on glass, and cuts glass, using glasscutter. Breaks off excess glass by hand or with notched tool. Fastens glass panes into wood sash with glazier's points, and spreads and smoothes putty around edge of panes with knife to seal joints. Installs mirrors or structural glass on building fronts, walls, ceilings, or tables, using mastic, screws, or decorative molding. Bolts metal hinges, handles, locks, and other hardware to prefabricated glass doors. Sets glass doors into frame and fits hinges. May install metal window and door frames into which glass panels are to be fitted. May press plastic adhesive film to glass or spray glass with tinting solution to prevent light glare. May install stained glass windows. May assemble and install metal-framed glass enclosures for showers.

INSULATOR

Applies insulating material* to exposed surfaces of structures, such as air ducts, hot and cold pipes, storage tanks, and cold storage rooms; Reads blueprints and selects required insulation material (in sheet, tubular, or roll form), such as fiberglass, foam rubber, styrofoam, cork, or urethane, based on material's heat retaining or excluding characteristics. Prepares and applies fire stopping materials. Brushes adhesives on or attaches metal adhesive-backed pins to flat surfaces as necessary to facilitate application of insulation material. Measures and cuts insulation material to specified size and shape for covering flat or round surfaces, using tape measure, knife, or scissors. Fits, wraps, or attaches required insulation material around or to structure, following blueprint specifications. Covers or seals insulation with preformed plastic covers, canvas strips, sealant, or tape to secure insulation to structure, according to type of insulation used and structure covered, using staple gun, trowel, paintbrush, or caulking gun.

> ✸ **Note: Installation of insulation is also found in other classifications relating to other trades.**

IRONWORKER

Performs any combination of following duties (working as a member of a crew) to raise, place, and unite girders, columns, and other structural-steel, iron or fiber-reinforced polymers or other plastic members* to form completed structures or structure frameworks and performs any combination of following duties to raise and place girders, columns or other members when performing demolition of completed structures or structure framework if material will

be re-used: Sets up hoisting equipment for raising and placing members. Fastens members to cable of hoist, using chain, cable, or rope. Signals worker operating hoisting equipment to lift and place member. Guides member, using tab line (rope) or rides on member in order to guide it into position. Pulls, pushes, or pries members into approximate position while member is supported by hoisting device. Forces members into final position, using turnbuckles, crowbars, jacks, and handtools. Aligns rivet holes in member with corresponding holes in previously placed member by driving drift pins or handle of wrench through holes. Verifies vertical and horizontal alignment of members, using plumb bob and level. Bolts aligned members to keep them in position until they can be permanently riveted, bolted, or welded in place. Catches hot rivets tossed by rivet heater (heat treating) in bucket and inserts rivets in holes, using tongs. Bucks (holds) rivets while riveter, pneumatic, uses air-hammer to form heads on rivets. Cuts and welds members to make alterations, using oxyacetylene welding equipment.

Positions and secures steel bars in concrete forms to reinforce concrete: Determines number, sizes, shapes, and locations of reinforcing rods from blueprints, sketches, or oral instructions. Selects and places rods in forms, spacing and fastening them together, using wire and pliers. Cuts bars to required lengths, using hacksaw, bar cutters, or acetylene torch. May bend steel rods with handtools or rodbending machine. May reinforce concrete with wire mesh. May weld reinforcing bars together, using arc- welding equipment. Welds deck pans on a bridge, reinforcing supports for the concrete structure.

Erects, trims, and fits together by means of bolts and clamps, iron grills, grating, and special stairways. Erects ornamental enclosures and other ironwork not included in structural ironwork. Installs chain link fences. Fastens ironwork to walls of buildings by means of bolts, brackets or anchors. Fastens newel posts, balusters, and other parts of stairways by fastening to supports or embedding them in sockets. Forges, welds, drills, and cuts as needed. Erects precast wall panels and prestressed roof panels by bolting, clamping or welding at the bottom to footing and at the top to steel joints as needed.

✸ **Hereinafter, "member/s" refers to structural steel, iron or fiber-reinforced polymers or other plastic material.**

<u>LABORER</u>

Laborers may not assist mechanics in the performance of mechanic's work using tools peculiar to an established trade. Their work is to be confined to the following manual tasks:

- Digging and filling holes and trenches;
- Removes excess dirt or grout away by hand from augers as the auger progresses;
- Except as provided in other classifications, loading, unloading and stockpiling materials;
- Cleaning and sweeping;
- Driving stakes;
- Stripping forms;
- Ripping out material which is to be discarded;
- Ground clean-up of roof removal work. Performs roof removal work for demolition (Roof removal work for roof replacement is performed by Roofers;)
- Clearing and grubbing;
- Flagging;

- Replacing painted lines on a road with tape strips, lays strips;
- Using a tool driven by compressed air, gas, or electric power to perform such work as breaking old pavement, loosening or digging hard earth, trimming bottom and sides of trenches, breaking large rocks, driving sheeting, chipping concrete, trimming or cutting stone, caulking steel plates, or compaction of earthen backfill;
- Mopping, brushing or spreading paint or bituminous compounds over surfaces for protection. Spraying materials such as water, sand, steam, vinyl, paint or stucco through hose to clean, coat or seal surfaces;
- Tending a stationary or portable liquid asphalt kettle, starting fires (usually fuel oil) under the kettle, controlling heat applied to the kettle by regulating dials or burners, maintaining desired temperature in asphalt, regulating valves for discharge of asphalt from kettle; --Cleaning and pouring asphalt joints in concrete paving with nozzle or can; Taking care of asphalt kettle and kettle heaters;
- Operating control lever on non-powered asphalt spreader pulled behind dump truck, operating the screed on the back of an asphalt spreader;
- Distributing asphaltic road-building materials evenly over road surface by raking and brushing materials to correct thickness; may control straightedge to regulate width and depth of materials; directing "Asphalt Shovelers" when to add or take away material to fill low spots or to reduce high spots;
- Manually operating a stationary or portable batching scale that weighs out concrete materials; adjusting scales for required weight of the materials; operating controls that admit materials separately from storage hoppers to weighing bins; observing scales or indicators that show when proper amount of materials have been made; discharging materials from weighing bin into truck or other carrier or mixer; measuring materials by volume instead of weight;
- Assisting in the pouring of concrete by spreading concrete, cleaning and caring of cement mason's tools, mixing mortar used in the patching of concrete, and performing other tasks as may be directed by cement mason or plasterer; Mixing mortar for plasterers and delivering same to location where plasterer is working; setting up scaffolding as directed by foreman where necessary, and cleaning and caring for tools and equipment used in the preparation and application of plaster;
- Operating a power driven chain saw to clear areas of timber; fells trees and sometimes cuts the fallen trees into short sections to facilitate their removal;
- Operating chippers and/or stump grinders;
- Operating a device used to burn holes, etc., through concrete; (this device consists of a
- consumable aluminum- magnesium rod inside a small iron pipe; oxygen is forced through the pipe under pressure, and the end of the assembly is lighted; the concrete is melted by the intense heat of the device);
- Driving self-propelled buggy to transport concrete from mixer or source of supply to place of deposit, operating levers to dump load, operating buggy by pushing or pulling by hand between mixer or other source to site of work;
- Operating small remote control vibrating compactor (such as a “whacker”) in trenches;
- Preparing the surfaces of concrete masonry which is not to be finished (using tools other than those normally used by "Cement Masons") by patching holes and broken corners, and removing high spots and defective concrete;
- Operating a power driven, hand guided, water cooled saw which is used to cut through slabs of concrete, except as otherwise provided elsewhere;
- Cuts brick, cinder block and concrete slabs using power abrasive saw, including hand-held, table or walk-behind saw;

- Operating a machine which applies asphalt or concrete along the edge of highways or parking aprons to form a small curb;
- Using a cutting torch for demolition work on steel or other metal structures;
- Cleaning and vacuuming heating and air conditioning ductwork that does not involve any dismantling, reassembling, cutting or bending sheet metal;
- Disassembling lead ductwork for demolition;
- Removal of sheet metal ductwork for demolition;
- Fitting together, aligning and grading metal road forms for holding concrete in place on road and street surfaces; dismantling, moving and cleaning forms after concrete hardens;
- Installing preformed wire baskets by tapping hooks along the edge of the basket to keep it in place on highway projects;
- Keeping stakes and stringline set in place out in front of trenching machine so that machine will cut ditch in correct location; setting stakes so that pipelayers can fine-grade ditch and measure from the batter board down to correct depth of ditch;
- Assisting operator and handling the equipment and directing the placing of concrete or mortar that is moved by pressure or pneumatic equipment, such as gunite; may fine-grade and place wire mesh at times; may perform other related semi- skilled duties.
- Assisting brickmasons, stonemason, and blockmasons by preparing mortar mix, either by hand or machine, delivering material to masons on scaffold, operating small material moving equipment such as power buggy, hoists, mortar mix pumps and other similar equipment; erects and dismantles bricklayer scaffolds.
- Constructing a means of permanent access to water and sewer lines for maintenance purposes. Work consists of laying brick or concrete block starting form a concrete slab at bottom of ditch up to an approximate grade line near the surface of the ground; brick or block is laid in by eyesight and is normally not to a plumb line; chipped or culled brick can be used and quite often is; no effort may be made to keep mortar off the face of the brick and joints are not pointed; applies coating of concrete to interior and exterior surfaces, except where tools of the trade are involved, performs other related duties.
- Mechanically mixing mortar ingredients to proper consistency and delivering to mason on scaffold or at site of work; keeping materials supplied to mason and assisting according to directions of mason;
- Assembling large diameter metal culverts by bolting together semi-circular pieces of metal to form a complete circle, and bolting each section of this circle to similar sections which are placed adjacently, repeating these processes until the required length of culvert is formed.
- On utility projects, laying tile, concrete, or corrugated metal pipe; receiving pipe lowered from top of trench; inserting spigot end of pipe into bell end of last laid pipe; adjusting pipe to line and grade; sealing joints with cement or other sealing compound;
- On highway projects, receiving, laying connecting (by means other than welding) and sealing joints of pipes;
- Mixing plaster to be used in a machine which is designed to apply plaster to surfaces by means of a hose; handling and maintaining hose, placing and moving machine, and servicing and maintaining machine;
- Cleaning, screening and feeding sand to hopper or pot of sandblasting machine;
- Supervising and assisting in locating, loading, and firing blast holes for breaking up hard materials; enlarging bottom of drilled holes by discharging small quantities of explosives; inserting detonator in charge of explosive, attaching fuse or electric wires, the stick and detonator forming a primer, the discharge of which effects the discharge of

the remainder of the explosive; charging hole by placing explosive, including stick that contains detonator, in hole and tamping with a pole; depressing handle of blasting machine or lights fuse to fire explosive; may use prima-cord or delay caps;

- Carrying powder or other explosive to blaster or powderman and assisting by placing prepared explosive in hole, connecting lead wire to blasting machine, and performing other duties as directed;
- Attaching and assisting in the installation of guardrails (other than guardrails on bridges), guardrail posts, informational signs, and metal fencing (including barbed wire and woven wire, excluding chain link and security fencing) which is used to define right of way, medians, or driving lanes or provide safety for such areas using small hand tools such as hammer and spud wrench;
- Cleaning and preparing surfaces by the use of sandblasting equipment; sanding floors using buff machines or floor sanding machines;
- Cleaning and dressing the slopes of roadway cuts and embankments while suspended by ropes or cables using hand tools as required;
- Lowering hose-like flexible shaft of vibrator into newly poured concrete; starting power unit and holding shaft, allowing hammerhead on shaft to vibrate, thus compacting the concrete (air, electric, or gasoline operated vibrators are used);
- Operating hand guided vibratory or impact compactor, adjusting levers, throttles and other devices necessary for operation;
- Setting up and operating drilling mechanism that drills holes into concrete of rock; leveling machine by placing timbers under wheels; inserting and fastening drill steel in chuck; adjusting angle of drill tower and bolts into position; controlling drilling and speed of drill by moving levers;
- Assisting in setting up drill, assorting drill steels, and inserting drill steel into drill chuck (as Wagon, Air Track, Drill and Diamond Drillers' Tender - Outside); Lubricating drill;
- Cleans and washes windows;
- Handling the equipment and directing the placing of concrete or mortar 1 l/2" thickness or over that is moved by pneumatic equipment; may fine-grade; installing concrete around electrical conduits after pull-wires have been installed;
- Performing landscaping duties including site development, soil preparation, fertilizing, the building of garden accessories, preparation for the installation of garden sprinkler systems; operating small walking type farm equipment; duties shall not include electrical work, fencing, concrete retaining walls, or other work which is generally performed by skilled craftsmen;
- Assisting divers by performing tasks such as handling concrete hoses; handing tools to divers; delivering materials and monitoring two-way communication boxes; pouring epoxy material into piling encasements.

MILLWRIGHT

Installs machinery and equipment according to layout plans, blueprints, and other drawings in industrial establishment, using hoists, lift trucks, handtools, and power tools: Reads blueprints and schematic drawings to determine work procedures. Dismantles machines, using hammers, wrenches, crowbars, and other handtools. Moves machinery and equipment, using hoists, dollies, rollers, and trucks. Assembles and installs equipment, such as shafting, conveyors, and tram rails, using handtools and power tools. Constructs foundation for machines, using handtools and building materials, such as wood, cement, and steel. Aligns

machines and equipment, using hoists, jacks, handtools, squares, rules, micrometers, and plumb bobs. Assembles machines, and bolts, welds, rivets, or otherwise fastens them to foundation or other structures, using handtools and power tools. May operate engine lathe to grind, file, and turn machine parts to dimensional specifications. May repair and lubricate machines and equipment. May install robot and modify its program, using teach pendant. May perform installation and maintenance work as part of team of skilled trades workers.

PAINTER

Applies coats of paint, varnish, stain, enamel, or lacquer to decorate and protect interior or exterior surfaces, trimmings, and fixtures of buildings and other structures, including painting of roadway markings and lines*: Reads work order or receives instructions from supervisor regarding painting. Smoothes surfaces, using sandpaper, brushes, or steel wool, and removes old paint from surfaces, using paint remover, scraper, wire brush, or blowtorch to prepare surfaces for painting. Fills nail holes, cracks, and joints with caulk, putty, plaster, or other filler, using caulking gun and putty knife. Selects premixed paints, or mixes required portions of pigment, oil, and thinning and drying substances to prepare paint that matches specified colors. Removes fixtures, such as pictures and electric switchcovers from walls prior to painting, using screwdriver. Spreads drop cloths over floors and room furnishings, and covers surfaces, such as baseboards, door frames, and windows with masking tape and paper to protect surfaces during painting. Paints surfaces, using brushes, spray gun, or paint rollers. Simulates wood grain, marble, brick, or tile effects. Applies paint with cloth, brush, sponge, or fingers to create special effects. Erects scaffolding or sets up ladders to perform tasks above ground level. May be designated according to type of work performed as Painter, Interior Finish (construction); Painter, Maintenance (any industry); or according to type of material used as Calciminer (construction); Varnisher (construction). May also hang wallpaper and fabrics. May wash surfaces prior to painting with mildew remover, using brush.

Seals joints between plasterboard or other wallboards to prepare wall surface for painting or papering: Mixes sealing compound by hand or with portable electric mixer, and spreads compound over joints between boards, using trowel, broadknife, or spatula. Presses paper tape over joint to embed tape into compound and seal joint, or tapes joint, using mechanical applicator that spreads compound and embeds tape in one operation. Spreads and smoothes cementing material over tape, using trowel or floating machine to blend joint with wall surface. Sands rough spots after cement has dried. Fills cracks and holes in walls and ceiling with sealing compound. May countersink nails or screws below surface of wall prior to applying sealing compound, using hammer or screwdriver.

✸ **This is added as a clarification. These tasks have always been included within the description of tasks performed by Painters.**

PILE DRIVER

Performs work involving pilings or sheeting of wood, concrete, steel or plastic on wharves, piers, docks, bulkheads, jetties, wooden bridges, ferry slips and pile foundations, including boring operations for the installation of auger cast piles. Sets up and tends all pile test loads. Performs any combination of the following duties in pile driving operations to raise and place wooden or concrete piles or steel sheeting: Sets up hoisting equipment for raising and placing wooden or concrete piles or steel sheeting sections to cable of hoist, using chain, cable or

rope. Signals worker operating hoisting equipment to lift and place the wooden or concrete pile or steel sheeting section. Guides wooden or concrete pile or steel sheeting section, using tab line (rope) or rides on pile or steel sheeting to guide it into position. Pulls, pushes or pries wooden or concrete pile or steel sheeting into place while pile or sheeting is supported by hoisting equipment. Dresses and caps the pilings which have been driven, and prepares them to receive the superstructure. Performs work in connection with shoring systems replacing sheeting (krings system and lagging). Installs tie-backs for the shoring system and tests shoring system.

Perform placement of rings, shores, bracing and jacking of all piles on the underpinning of buildings, bridges, railroads and all other underpinning operations. Handles, sets, secures, cuts and drills pre-cast piles and pile caps on bridges, piers, docks and wharves. Handles, sets, secures, cuts and drills pre-cast decking on piers, docks and wharves.

Repairs deteriorated pilings by installing a pile encasement.

PLASTERER

Applies coats of plaster to interior walls, ceilings, and partitions of buildings, to produce finished surface, according to blueprints, architect's drawings, or oral instructions, using handtools and portable power tools: Directs workers to mix plaster to desired consistency and to erect scaffolds. Spreads plaster over lath or masonry base, using trowel, and smoothes plaster with darby and float to attain uniform thickness. Sprays fireproof insulation onto steel beams. Applies scratch, brown, or finish coats of plaster to wood, metal, or board lath successively. Roughens undercoat with scratcher (wire or metal scraper) to provide bond for succeeding coats of plaster. Creates decorative textures in finish coat by marking surface of coat with brush and trowel or by spattering surface with pebbles. May install lathing. May mix mortar. May install guide wires on exterior surface of buildings to indicate thickness of plaster to be applied. May install precast ornamental plaster pieces by applying mortar to back of pieces and pressing pieces into place on wall or ceiling.

Molds and installs ornamental plaster panels and trim, and runs (casts) ornamental plaster cornices and moldings by either of following methods: (1) Spreads freshly mixed plaster on table or in forms with trowel when molding and installing ornamental trim. Shapes plaster by hand, using template and cuts trim to size after plaster has hardened. Applies coat of plaster to wall and presses trim into position. (2) Nails wooden strips to wall and ceiling to serve as guide for template when casting (running) cornices or moldings. Applies plaster to wall or ceiling, using trowel. Pushes template over plaster, striking off excess plaster until desired shape and smoothness of molding is obtained.

Applies weatherproof, decorative covering of Portland cement or gypsum plaster to outside building surfaces, using handtools. Decorates final or finish coat by marking coat with sand, or with brush or trowel, or by spattering with small stones. May nail wire mesh, lath, or similar material to outside surfaces to serve as binding device to hold stucco in place. May apply stucco, using spray gun. May install guide wires on surface of buildings to indicate thickness of stucco to be applied.

PLUMBER/PIPEFITTER/STEAMFITTER

Lays out, assembles, installs, and maintains pipe systems, pipe supports, and related hydraulic and pneumatic equipment, for steam, hot water, heating, cooling, lubricating,

sprinkling, and industrial production and processing systems, applying knowledge of system operation, and following blueprints: Unloads and handles material to be used by plumbers and pipefitters under this definition; Selects type and size of pipe, and related materials and equipment, such as supports, hangers, and hydraulic cylinders, according to specifications. Inspects work site to determine presence of obstructions and to ascertain that holes cut for pipe will not cause structural weakness. Plans installation or repair to avoid obstructions and to avoid interfering with activities of other workers. Cuts pipe, using saws, pipe cutter, hammer and chisel, cutting torch, and pipe cutting machine. Threads pipe, using pipe threading machine. Bends pipe, using pipe bending tools and pipe bending machine. Assembles and installs a variety of metal and nonmetal pipes, tubes, and fittings, including iron, steel, copper, and plastic. Connects pipes, using threaded, caulked, soldered, brazed, fused, or cemented joints and handtools. Secures pipes to structure with brackets, clamps, and hangers, using handtools and power tools. Installs and maintains hydraulic and pneumatic components of machines and equipment, such as pumps and cylinders, using handtools. Installs and maintains refrigeration and air-conditioning systems, including compressors, pumps, meters, pneumatic and hydraulic controls, and piping, using handtools and power tools, and following specifications and blueprints. Increases pressure in pipe system and observes connected pressure gauge to test system for leaks. May weld pipe supports to structural steel members. May operate machinery to verify repair. May operate machinery to verify repair. May modify programs of automated machinery, such as robots and conveyors, to change motion and speed of machine, using teach pendant, control panel, or keyboard and display screen of robot controller and programmable controller. May be designated Steam Fitter when installing piping systems that must withstand high pressure.

Assembles, installs, and repairs pipes, fittings, and fixtures of heating, water, and drainage systems, according to specification and plumbing codes: Studies building plans and working drawings to determine work aids required and sequence of installations. Inspects structure to ascertain obstructions to be avoided to prevent weakening of structure resulting from installation of pipe. Locates and marks position of pipe and pipe connections and passage holes for pipes in walls and floors, using ruler, spirit level, and plumb bob. Cuts openings in walls and floors to accommodate pipe and pipe fittings, using handtools and power tools. Cuts and threads pipe, using pipe cutters, cutting torch, and pipe-threading machine. Bends pipe to required angle by use of pipe-bending machine or by placing pipe over block and bending it by hand. Assembles and installs valves, pipe fittings, and pipes composed of metals, such as iron, steel, brass, and lead, and nonmetals, such as glass, vitrified clay, and plastic, using handtools and power tools. Joins pipes by use of screws, bolts, fittings, solder, plastic solvent, and caulks joints. Fills pipe system with water or air and reads pressure gauges to determine whether system is leaking. Installs and repairs plumbing fixtures, such as sinks, commodes, bathtubs, water heaters, hot water tanks, garbage disposal units, dishwashers, and water softeners. Repairs and maintains plumbing by replacing washers in leaky faucets, mending burst pipes, and opening clogged drains. May weld holding fixtures to steel structural members.

Test, adjust and balance heating and cooling piping systems in commercial and industrial buildings using specialized tools and equipment to attain performance standards specified in system design. Adjusts flow control valves in piping to balance system, using hand tools such as pliers, screwdriver, and wrenches. Work with balancing personnel to perform tests to see if the heating and cooling systems are operating to specifications and detect malfunctions in piping system component parts.

POWER EQUIPMENT OPERATOR

Operates Steel and Stone handling equipment in connection with erection; Operates cranes, machine-handling machinery, cable spinning machine, helicopters, backhoes, cableways, conveyor loader, drag lines, keystones, all types of shovels, derricks, trench shovels, trenching machines, pippin type backhoe, hoists, pavers, milling machine, mucking machine, gradalls, front-end loaders, tandem scraper, drills (self- contained Drillmaster type), fork lift, motor patrols, batch plant with mixer, scraper and tournapull, rollers, spreaders, pan trucks, bulldozers, tractors, conveyors, pressure boilers, well drillers, ditch witch type trenchers, concrete breaking machines, fine grade machines, seamen pulverizing mixer, form line graders, road finishing machines, power boom, seed spreader, grease truck (to provide fuel, lubrication and service for power equipment), wellpoints, compressors, pumps and machines similar to above. Sets up hollow stem auger equipment for attachment to crane. Included in this classification are mechanics for power equipment, tiremen on power equipment, asphalt plant engineers, maintenance engineer (power boat), firemen, oilers and deck hands (personnel boats), and grease truck helper.

ROOFER – COMPOSITION

Applies low slope composition roofing materials including insulation incidental to the roof system. Covers low slope roofs with composition sheet, liquid, semi-liquid and/or spray applied roofing materials (other than sheet metal) to construct Built Up (BUR), Modified Bitumen, Single-Ply Membrane and Spray In Place foam roof systems. Applies low slope roof substrate materials used as vapor barrier, fireproofing, support or attachment surfaces for composition roof systems to the roof deck. Applies rigid insulation, including composite insulations having nailable surfaces bonded to the insulation, when used as components of low sloped roof systems or with waterproofing. Applies mineral aggregate, gravel, slag, ballast, pavers, protection boards, walkway pads and roof treads when used to surface or protect low slope composition roof systems or waterproofing. Installs base flashings, curb flashings and counter-flashings used to roof or waterproof intersecting surfaces on low slope roofs. Applies components of low slope composition roofing systems used to seal, coat and maintain the roof including roof cements, reinforcements, finishing and toppings. Applies spray-in-place foams such as urethane, polyurethane or polyisocyanurate and the coatings applied over them when used for roofing and waterproofing. Applies bituminous or asphaltic-based sheet, liquid, semi-liquid and/or pre-formed panels as necessary to waterproof low slope roofing system. Removes existing low slope composition roof materials in connection with the installation of a new composition roof at the same location.

ROOFER – SHINGLE, SLATE AND TILE

Applies shingle, slate and tile roofing materials (including insulation incidental to the roof system) on steep slope roofs. Applies roofing felt, paper, membrane, ice shield or vapor barrier as layer beneath shingle, slate and tile roofs. Aligns steep slope roofing material with roof edge and overlaps successive layers. Gauges distance of overlap with chalkline, gauge on shingling hatchet, or by lines on shingles. Fastens shingles to roof with asphalt, cement, or nails. Cuts and punches holes in slate, tile, terra cotta or wood roofing shingles using punch and hammer. Applies rigid insulation, including composite insulation having nailable surfaces bonded to the insulation, to steep slope roofs where such insulation is related to the

application of shingle, slate and/or tile roofing materials. May construct and install prefabricated roof sections to rafters. Removes existing shingle, slate and/or tile roof materials in connection with the application of a new shingle, slate and/or tile roof at the same location.

SHEET METAL WORKER

Plans, lays out, fabricates, assembles, installs, and repairs sheet metal parts, equipment, and products, utilizing knowledge of working characteristics of metallic and nonmetallic materials, machining, and layout techniques, using handtools, power tools, machines, and equipment: Reads and interprets blueprints, sketches, or product specifications to determine sequence and methods of fabricating, assembling, and installing sheet metal products. Selects gauge and type of sheet metal, such as galvanized iron, copper, steel, or aluminum, or nonmetallic material, such as plastics or fiberglass, according to product specifications. Lays out and marks dimensions and reference lines on material, using scribers, dividers, squares, and rulers, applying knowledge of shop mathematics and layout techniques to develop and trace patterns of product or parts or using templates. Sets up and operates fabricating machines, such as shears, brakes, presses, forming rolls, and routers, to cut, bend, block and form, or straighten materials. Shapes metal material over anvil, block, or other form, using handtools. Trims, files, grinds, deburrs, buffs, and smoothes surfaces, using handtools and portable power tools. Welds, solders, bolts, rivets, screws, clips, caulks, or bonds component parts to assemble products, using handtools, power tools, and equipment. Installs assemblies in supportive framework according to blueprints, using handtools, power tools, and lifting and handling devices. Installs standing-seam metal roofs. Installs aluminum fascia on roofs. Inspects assemblies and installation for conformance to specifications, using measuring instruments, such as calipers, scales, dial indicators, gauges, and micrometers. Repairs and maintains sheet metal products. May operate computer-aided-drafting (CAD) equipment to develop scale drawings of product or system. May operate laser-beam cutter or plasma arc cutter to cut patterns from sheet metal.

Installs sheet metal ductwork to facilitate the movement of air. Disassembly of existing sheet metal ductwork in connection with the installation of new sheet metal ductwork at the same location. Cuts, patches, disassembles and reassembles ducts in duct-cleaning operations. Tests, adjusts, and balances heating, cooling, and ventilation systems in commercial and industrial buildings using specialized tools and test equipment to attain performance standards specified in system design. Studies system blueprints, specifications and performance data to determine configuration and purpose of system components, such as motors, pumps, fans, switches and ducts. Discusses systems malfunctions with users to isolate problems. Inspects systems to verify system compliance with plans and specifications and to detect malfunctions in system components parts. Adjusts system controls to settings recommended by vendor to prepare to perform tests. Tests performance of air systems, using specialized tools and test equipment, such as pitot tube, manometer, anemometer, velometer, tachometer, psychrometer, thermometer, to isolate problems and to determine where adjustments are necessary. Opens or closes louvers in system ductwork to balance system, using hand tools such as pliers, screwdrivers, or wrenches. Discusses system operations with users to verify that malfunctions have been corrected. Installs insulation (not sprayed urethane or polyurethane) incidental to sheet metal work.

SOFT FLOOR LAYER

Applies blocks, strips, or sheets of shock-absorbing, sound- deadening, or decorative covering to floors, walls, and cabinets: Disconnects and removes obstacles, such as appliances and light fixtures. Sweeps, scrapes, sands, or chips dirt and irregularities from base surfaces, and fills cracks with putty, plaster, or cement grout to form smooth, clean foundation. Measures and cuts covering materials, such as rubber, linoleum or cork tile, and foundation material, such as felt, according to blueprints and sketches, using rule, straightedge, linoleum knife, and snips. Spreads adhesive cement over floor to cement foundation material to floor for sound-deadening, and to prevent covering from wearing at board joints. Lays out centerlines, guidelines, and borderlines on foundation with chalkline and dividers. Spreads cement on foundation material with serrated trowel. Lays covering on cement, following guidelines, to keep tile courses straight and butts edges of blocks to match patterns and execute designs. Joins sections of sheet covering by overlapping adjoining edges and cutting through both layers with knife to form tight joint. Rolls finished floor to smooth it and press cement into base and covering. May soften area of floor covering with butane torch to fit materials around irregular surfaces. May lay carpet.

Applies decorative steel, aluminum, and plastic tile (known as soft tile to distinguish from ceramic tile) to walls and cabinets of bathrooms and kitchens: Measures surface to locate center points and draws horizontal and vertical guidelines through them. Brushes waterproof compound over plaster surfaces to seal pores. Spreads adhesive cement over wall, using trowel or broad knife. Positions tile on cement, following specified pattern. Presses tile into cement. Removes excess cement from joints between tile to clean finished surface, using damp cloth or cleaning compound. Rolls sheet wall covering with hand roller to press into cement. May wipe grout into joints of tile to seal them.

SPRINKLER FITTER

Installs and maintains all fire protection and fire control systems including the unloading, handling by hand, power equipment and installation of all piping or tubing, appurtenances and equipment pertaining thereto, including both overhead and underground water mains, fire hydrants and hydrant mains, standpipes and hose connections to sprinkler systems, sprinkler tank heaters, air lines and thermal systems used in connection with sprinkler and alarm systems, also all tanks and pumps connected thereto, also included shall be CO-2 and Cardox Systems, Dry Chemical Systems, Foam Systems, Halon and all other fire protection systems, the locating of and cutting or coring of all holes for piping and the setting of all sleeves and inserts required for the installation of the work.

TERRAZZO/MARBLE/TILE SETTER

Cuts, tools, and sets marble slabs in floors and walls of buildings and repairs and polishes slab previously set in buildings: Trims, faces, and cuts marble to specified size, using power sawing, cutting, and facing equipment and handtools. Drills holes in slab and attaches bracket. Spreads mortar on bottom of slab and on sides of adjacent slabs. Sets block in position, tamps it into place, and anchors bracket attachment with wire. Fills joints with grout. Removes excess grout from marble with sponge. Cleans and bevels cracks or chips on

slabs, using handtools and power tools. Heats cracked or chipped area with blowtorch and fills defect with composition mastic that matches grain of marble. Polishes marble and other ornamental stone to high luster, using power tools or by hand.

Applies cement, sand, pigment, and marble chips to floors, stairways, and cabinet fixtures to attain durable and decorative surfacing according to specifications and drawings: Spreads roofing paper on surface of foundation. Spreads mixture of sand, cement, and water over surface with trowel to form terrazzo base. Cuts metal division strips and presses them into terrazzo base so that top edges form desired design or pattern and define level of finished floor surface. Spreads mixture of marble chips, cement, pigment, and water over terrazzo base to form finished surface, using float and trowel. Scatters marble chips over finished surface. Pushes roller over surface to imbed chips. Allows surface to dry, and pushes electric-powered surfacing machine over floor to grind and polish terrazzo surface. Grinds curved surfaces and areas inaccessible to surfacing machine, such as stairways and cabinet tops, with portable hand grinder. May precast terrazzo blocks in wooden forms.

Applies tile to walls, floors, ceilings, and promenade roof decks, following design specifications: Examines blueprints, measures and marks surfaces to be covered, and lays out work. Measures and cuts metal lath to size for walls and ceilings with tin snips. Tacks lath to wall and ceiling surfaces with staple gun or hammer. Spreads plaster base over lath with trowel and levels plaster to specified thickness, using screed. Spreads concrete on subfloor with trowel and levels it with screed. Spreads mastic or other adhesive base on roof deck using serrated spreader to form base for promenade tile. Cuts and shapes tile with tile cutters and biters. Positions tile and taps it with trowel handle to affix tile to plaster or adhesive base.

TERRAZZO/MARBLE/TILE FINISHER

Supplies and mixes construction materials for Marble Setter, applies grout, and cleans installed marble: Moves marble installation materials, tools, machines, and work devices to work areas. Mixes mortar, plaster, and grout, as required, following standard formulas and using manual or machine mixing methods. Moves mixed mortar or plaster to installation area, manually or using wheelbarrow. Selects marble slab for installation, following numbered sequence or drawings. Drills holes and chisels channels in edges of marble slabs to install metal wall anchors, using power drill and chisel. Bends wires to form metal anchors, using pliers, inserts anchors into drilled holes of marble slab, and secures anchors in place with wooden stake and plaster. Moves marble slabs to installation site, using dolly, hoist, or portable crane. Fills marble joints and surface imperfections with grout, using grouting trowel or spatula, and removes excess grout, using wet sponge. Grinds and polishes marble, using abrasives, chemicals, and manual or machine grinding and polishing techniques. Cleans installed marble surfaces, work and storage areas, installation tools, machinery, and work aids, using water and cleaning agents. Stores marble, installation materials, tools, machinery, and related items. May modify mixing, material moving, grouting, polishing, and cleaning methods and procedures, according to type of installation or materials. May repair and fill chipped, cracked, or broken marble pieces, using torch, spatula, and heat sensitive adhesive and filler. May secure marble anchors to studding, using pliers, and cover ends of anchors with plaster to secure anchors in place. May assist Marble Setter to saw and position marble. May erect scaffolding and related installation structures.

Supplies and mixes construction materials for Terrazzo Worker, applies grout, and finishes surface of installed terrazzo: Moves terrazzo installation materials, tools, machines, and work devices to work areas, manually or using wheelbarrow. Measures designated amounts of

ingredients for terrazzo or grout, using graduated containers and scale, following standard formulas and specifications, and loads portable mixer, using shovel. Mixes materials according to experience and requests from Terrazzo Worker and dumps mixed materials that form base or top surface of terrazzo into prepared installation site, using wheelbarrow. Applies curing agent to installed terrazzo to promote even curing, using brush or sprayer. Grinds surface of cured terrazzo, using power grinders, to smooth terrazzo and prepare for grouting. Spreads grout across terrazzo to fill surface imperfections, using trowel. Fine grinds and polishes surface of terrazzo, when grout has set, using power grinders. Washes surface of polished terrazzo, using cleaner and water, and applies sealer, according to manufacturer's specifications, using brush. Installs grinding stone in power grinders, using handtools. Cleans installation site, mixing and storage areas, tools, machines, and equipment, using water and various cleaning devices. Stores terrazzo installation materials, machines, tools, and equipment. May modify mixing, grouting, grinding, and cleaning procedures according to type of installation or material used. May assist Terrazzo Worker to position and secure moisture membrane and wire mesh prior to pouring base materials for terrazzo installation.

May spread marble chips or other material over fresh terrazzo surface and press into terrazzo, using roller. May cut divider and joint strips to size as directed. May cut grooves in terrazzo stairs, using power grinder, and fill grooves with nonskid material.

Supplies and mixes construction materials for Tile Setter, applies grout, and cleans installed tile: Moves tiles, tilesetting tools, and work devices from storage area to installation site manually or using wheelbarrow. Mixes mortar and grout according to standard formulas and request from Tile Setter, using bucket, water hose, spatula, and portable mixer. Supplies Tile Setter with mortar, using wheelbarrow and shovel. Applies grout between joints of installed tile, using grouting trowel. Removes excess grout from tile joints with wet sponge and scrapes corners and crevices with trowel. Wipes surface of tile after grout has set to remove grout residue and polish tile, using nonabrasive materials. Cleans installation site, mixing and storage areas, and installation machines, tools, and equipment, using water and various cleaning tools. Stores tile setting materials, machines, tools, and equipment. May apply caulk, sealers, acid, steam, or related agents to caulk, seal, or clean installed tile, using various application devices and equipment. May modify mixing, grouting, grinding, and cleaning procedures according to type of installation or material used. May assist Tile Setter to position and secure metal lath, wire mesh, or felt paper prior to installation of tile. May cut marked tiles to size, using power saw or tile cutter.

TRUCK DRIVER

Operates dumps, dumpsters, escort and pilot vehicles, flat body material trucks, form trucks, greasers (to provide fuel, lubrication and service for trucks) and steamers, panel truck, pick-ups, rubber-tired towing and pushing vehicles, A-frames, agitators or mixers, asphalt distributors, low-boys, semi- trailers, tandems, batch truck, euclid type or similar off-highway equipment, off-highway tandem back-dump, specialized earth moving equipment, twin engine equipment and double-hitched equipment, and equipment similar to above. This classification also includes truck mechanics.

GENERAL REQUIREMENTS

TABLE OF ARTICLES

ARTICLE 1: GENERAL

1.1 CONTRACT DOCUMENTS

1.1.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to an extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

1.1.2 Work including material purchases shall not begin until the Contractor is in receipt of a bonafide State of Delaware Purchase Order. Any work performed or material purchases prior to the issuance of the Purchase Order is done at the Contractor's own risk and cost.

1.2 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

1.2.1 For Public Works Projects financed in whole or in part by state appropriation the Contractor agrees that during the performance of this contract:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, sexual orientation, gender identity or national origin. The Contractor will take positive steps to ensure that applicants are employed and that employees are treated during employment without regard to their race, creed, sex, color, sexual orientation, gender identity or national origin. Such action 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 contracting agency setting forth this nondiscrimination clause.

2. The 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 race, creed, sex, color, sexual orientation, gender identity or national origin."

ARTICLE 2: OWNER

(NO ADDITIONAL GENERAL REQUIREMENTS – SEE SUPPLEMENTARY GENERAL CONDITIONS)

ARTICLE 3: CONTRACTOR

3.1 Schedule of Values: The successful Bidder shall within twenty (20) days after receiving notice to proceed with the work, furnish to the Owner a complete schedule of values on the various items comprising the work.

3.2 Subcontracts: Upon approval of Subcontractors, the Contractor shall award their Subcontracts as soon as possible after the signing of their own contract and see that all material, their own and those of their Subcontractors, are promptly ordered so that the work will not be delayed by failure of materials to arrive on time.

3.3 Before commencing any work or construction, the General Contractor is to consult with the Owner as to matters in connection with access to the site and the allocation of Ground Areas for the various features of hauling, storage, etc.

3.4 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions.

3.5 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

3.6 The Contractor warrants to the Owner that materials and equipment furnished will be new and of good quality, unless otherwise permitted, and that the work will be free from defects and in conformance with the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved, may be considered defective. If required by the Owner, the Contractor shall furnish evidence as to the kind and quality of materials and equipment provided.

3.7 Unless otherwise provided, the Contractor shall pay all sales, consumer, use and other similar taxes, and shall secure and pay for required permits, fees, licenses, and inspections necessary for proper execution of the Work.

3.8 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work. The Contractor shall promptly notify the Owner if the Drawings and Specifications are observed to be at variance therewith.

3.9 The Contractor shall be responsible to the Owner for the acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing portions of the Work under contract with the Contractor.

3.10 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work the Contractor shall remove from and about the Project all waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials. The Contractor shall be responsible for returning all damaged areas to their original conditions.

3.11 CITY AND STATE LICENSE AND TAX REQUIREMENTS

3.11.1 Each Contractor and Subcontractor shall be licensed to do business in the State of Delaware and shall pay all fees and taxes due under State laws. In conformance with Section 2503, Chapter 25, Title 30, Delaware Code, "the Contractor shall furnish the Delaware Department of Finance within ten (10) days after entering into any contract with a contractor or subcontractor not a resident of this State, a statement of total value of such contract or contracts together with the names and addresses of the contracting parties."

3.12 The Contractor shall comply with all requirements set forth in Section 6962, Chapter 69, Title 29 of the Delaware Code.

3.13 Each Contractor and Subcontractor shall be licensed to do business in the City of Dover, Delaware and shall pay all fees and taxes due under City laws.

3.14 All contractors, subcontractors and independent contractors shall have a proper and current occupational and/or business license to enter or perform work under a public works contracts. It is the responsibility of a contractor to verify and make a record that all subcontractors or independent contractors working for such contractor pursuant to a public works contract shall have their occupational and/or business licenses.

3.15 No agency shall accept a proposal for a public works contract unless such contractor has provided a proper and current copy of his occupational and/or business license to such agency.

3.16 Any contractor that enters a public works contract with the State must provide to the agency to whom it is contracting within 30 days of entering such public works contract, copies of all occupational and business licenses of subcontractors or independent contractors that will perform work for such public works contract.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.1 CONTRACT SURETY

4.1.1 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

4.1.2 All bonds will be required as follows unless specifically waived elsewhere in the Bidding Documents.

4.1.3 Contents of Performance Bonds – The bond shall be in the form approved by the Office of Management and Budget. The bond shall be conditioned upon the faithful compliance and performance by the successful bidder of each and every term and condition of the contract and the proposal, plans, specifications, and bid documents thereof. Each term and condition shall be met at the time and in the manner prescribed by the Contract, Bid documents and the specifications, including the payment in full to every person furnishing materiel or performing labor in the performance of the Contract, of all sums of money due the person for such labor and materiel. (The bond shall also contain the successful bidder's guarantee to indemnify and save harmless the State and the agency

from all costs, damages and expenses growing out of or by reason of the Contract in accordance with the Contract.)

4.1.4 Invoking a Performance Bond – The agency may, when it considers that the interest of the State so require, cause judgement to be confessed upon the bond.

4.1.5 Within twenty (20) days after the date of notice of award of contract, the Bidder to whom the award is made shall furnish a Performance Bond and Labor and Material Payment Bond, each equal to the full amount of the Contract price to guarantee the faithful performance of all terms, covenants and conditions of the same. The bonds are to be issued by an acceptable Bonding Company licensed to do business in the State of Delaware and shall be issued in duplicate.

4.1.6 Performance and Payment Bonds shall be maintained in full force (warranty bond) for a period of two (2) years after the date of the Certificate for Final Payment. The Performance Bond shall guarantee the satisfactory completion of the Project and that the Contractor will make good any faults or defects in his work which may develop during the period of said guarantees as a result of improper or defective workmanship, material or apparatus, whether furnished by themselves or their Sub-Contractors. The Payment Bond shall guarantee that the Contractor shall pay in full all persons, firms or corporations who furnish labor or material or both labor and material for, or on account of, the work included herein. The bonds shall be paid for by this Contractor. The Owner shall have the right to demand that the proof parties signing the bonds are duly authorized to do so.

4.2 FAILURE TO COMPLY WITH CONTRACT

4.2.1 If any firm entering into a contract with the State, or Agency that neglects or refuses to perform or fails to comply with the terms thereof, the Agency which signed the Contract may terminate the Contract and proceed to award a new contract in accordance with this Chapter 69, Title 29 of the Delaware Code or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond. Nothing herein shall preclude the Agency from pursing additional remedies as otherwise provided by law.

4.3 CONTRACT INSURANCE AND CONTRACT LIABILITY

4.3.1 In addition to the bond requirements stated in the Bid Documents, each successful Bidder shall purchase adequate insurance for the performance of the Contract and, by submission of a Bid, agrees to indemnify and save harmless and to defend all legal or equitable actions brought against the State, any Agency, officer and/or employee of the State, for and from all claims of liability which is or may be the result of the successful Bidder's actions during the performance of the Contract.

4.3.2 The purchase or nonpurchase of such insurance or the involvement of the successful Bidder in any legal or equitable defense of any action brought against the successful Bidder based upon work performed pursuant to the Contract will not waive any defense which the State, its agencies and their respective officers, employees and agents might otherwise have against such claims, specifically including the defense of sovereign immunity, where applicable, and by the terms of this section, the State and all agencies,

officers and employees thereof shall not be financially responsible for the consequences of work performed, pursuant to said contract.

4.4 RIGHT TO AUDIT RECORDS

4.4.1 The Owner shall have the right to audit the books and records of a Contractor or any Subcontractor under any Contract or Subcontract to the extent that the books and records relate to the performance of the Contract or Subcontract.

4.4.2 Said books and records shall be maintained by the Contractor for a period of seven (7) years from the date of final payment under the Prime Contract and by the Subcontractor for a period of seven (7) years from the date of final payment under the Subcontract.

ARTICLE 5: SUBCONTRACTORS

5.1 SUBCONTRACTING REQUIREMENTS

5.1.1 All contracts for the construction, reconstruction, alteration or repair of any public building (not a road, street or highway) shall be subject to the following provisions:

1. A contract shall be awarded only to a Bidder whose Bid is accompanied by a statement containing, for each Subcontractor category, the name and address (city or town and State only – street number and P.O. Box addresses not required) of the subcontractor whose services the Bidder intends to use in performing the Work and providing the material for such Subcontractor category.

2. A Bid will not be accepted nor will an award of any Contract be made to any Bidder which, as the Prime Contractor, has listed itself as the Subcontractor for any Subcontractor unless:

   A. It has been established to the satisfaction of the awarding Agency that the Bidder has customarily performed the specialty work of such Subcontractor category by artisans regularly employed by the Bidder's firm;

   B. That the Bidder is duly licensed by the State to engage in such specialty work, if the State requires licenses; and

   C. That the Bidder is recognized in the industry as a bona fide Subcontractor or Contractor in such specialty work and Subcontractor category.

5.1.2 The decision of the awarding Agency as to whether a Bidder who list itself as the Subcontractor for a Subcontractor category shall be final and binding upon all Bidders, and no action of any nature shall lie against any awarding agency or its employees or officers because of its decision in this regard.

5.1.3 After such a Contract has been awarded, the successful Bidder shall not substitute another Subcontractor for any Subcontractor whose name was set forth in the statement which accompanied the Bid without the written consent of the awarding Agency.

5.1.4 No Agency shall consent to any substitution of Subcontractors unless the Agency is satisfied that the Subcontractor whose name is on the Bidders accompanying statement:

A. Is unqualified to perform the work required;

B. Has failed to execute a timely reasonable Subcontract;

C. Has defaulted in the performance on the portion of the work covered by the Subcontract; or

D. Is no longer engaged in such business.

5.1.5 Should a Bidder be awarded a contract, such successful Bidder shall provide to the agency the taxpayer identification license numbers of such subcontractors. Such numbers shall be provided on the later of the date on which such subcontractor is required to be identified or the time the contract is executed. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

5.2 PENALTY FOR SUBSTITUTION OF SUBCONTRACTORS

5.2.1 Should the Contractor fail to utilize any or all of the Subcontractors in the Contractor's Bid statement in the performance of the Work on the public bidding, the Contractor shall be penalized in the amount of (project specific amount*). The Agency may determine to deduct payments of the penalty from the Contractor or have the amount paid directly to the Agency. Any penalty amount assessed against the Contractor may be remitted or refunded, in whole or in part, by the Agency awarding the Contract, only if it is established to the satisfaction of the Agency that the Subcontractor in question has defaulted or is no longer engaged in such business. No claim for the remission or refund of any penalty shall be granted unless an application is filed within one year after the liability of the successful Bidder accrues. All penalty amounts assessed and not refunded or remitted to the contractor shall be reverted to the State.

*one (1) percent of contract amount not to exceed $10,000

5.3 ASBESTOS ABATEMENT

5.3.1 The selection of any Contractor to perform asbestos abatement for State-funded projects shall be approved by the Office of Management and Budget, Division of Facilities Management pursuant to Chapter 78 of Title 16.

5.4 STANDARDS OF CONSTRUCTION FOR THE PROTECTION OF THE PHYSICALLY HANDICAPPED

5.4.1 All Contracts shall conform with the standard established by the Delaware Architectural Accessibility Board unless otherwise exempted by the Board.

5.5 CONTRACT PERFORMANCE

5.5.1 Any firm entering into a Public Works Contract that neglects or refuses to perform or fails to comply with its terms, the Agency may terminate the Contract and proceed to award a new Contract or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond.

ARTICLE 6: CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS

6.1 The Owner reserves the right to simultaneously perform other construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other Projects at the same site.

6.2 The Contractor shall afford the Owner and other Contractors reasonable opportunity for access and storage of materials and equipment, and for the performance of their activities, and shall connect and coordinate their activities with other forces as required by the Contract Documents.

ARTICLE 7: CHANGES IN THE WORK

7.1 The Owner, without invalidating the Contract, may order changes in the Work consisting of Additions, Deletions, Modifications or Substitutions, with the Contract Sum and Contract completion date being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Professional, as the duly authorized agent, the Contractor and the Owner.

7.2 The Contract Sum and Contract Completion Date shall be adjusted only by a fully executed Change Order.

7.3 The additional cost, or credit to the Owner resulting from a change in the Work shall be by mutual agreement of the Owner, Contractor and the Architect. In all cases, this cost or credit shall be based on the 'DPE' wages required and the "invoice price" of the materials/equipment needed.

7.3.1 "DPE" shall be defined to mean "direct personnel expense". Direct payroll expense includes direct salary plus customary fringe benefits (prevailing wage rates) and documented statutory costs such as workman's compensation insurance, Social Security/Medicare, and unemployment insurance (a maximum multiplier of 1.35 times DPE).

7.3.2 "Invoice price" of materials/equipment shall be defined to mean the actual cost of materials and/or equipment that is paid by the Contractor, (or subcontractor), to a material distributor, direct factory vendor, store, material provider, or equipment leasing entity. Rates for equipment that is leased and/or owned by the Contractor or subcontractor(s) shall not exceed those listed in the latest version of the "Means Building Construction Cost Data" publication.

7.3.3 In addition to the above, the General Contractor is allowed a fifteen percent (15%) markup for overhead and profit for additional work performed by the General Contractor's own forces. For additional subcontractor work, the Subcontractor is allowed a fifteen (15) percent overhead and profit on change order work above and beyond the direct costs stated previously. To this amount, the General Contractor will be allowed a mark-up not exceeding seven and one half percent (7.5%) on the subcontractors work. These mark-ups shall include all costs including, but not limited to: overhead, profit, bonds, insurance, supervision, etc. No markup is permitted on the work of the subcontractors subcontractor. No additional costs shall be allowed for changes related to the Contractor's onsite superintendent/staff, or project manager, unless a change in the work changes the project duration and is identified by the CPM schedule. There will be no other costs associated with the change order.

ARTICLE 8: TIME

8.1 Time limits, if any, are as stated in the Project Manual. By executing the Agreement, the Contractor confirms that the stipulated limits are reasonable, and that the Work will be completed within the anticipated time frame.

8.2 If progress of the Work is delayed at any time by changes ordered by the Owner, by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions, unavoidable casualties or other causes beyond the Contractor's control, the Contract Time shall be extended for such reasonable time as the Owner may determine.

8.3 Any extension of time beyond the date fixed for completion of the construction and acceptance of any part of the Work called for by the Contract, or the occupancy of the building by the Owner, in whole or in part, previous to the completion shall not be deemed a waiver by the Owner of his right to annul or terminate the Contract for abandonment or delay in the matter provided for, nor relieve the Contractor of full responsibility.

8.4 SUSPENSION AND DEBARMENT

8.4.1 Per Section 6962(d)(14), Title 29, Delaware Code, "Any Contractor who fails to perform a public works contract or complete a public works project within the time schedule established by the Agency in the Invitation To Bid, may be subject to Suspension or Debarment for one or more of the following reasons: a) failure to supply the adequate labor supply ratio for the project; b) inadequate financial resources; or, c) poor performance on the Project."

8.4.2 "Upon such failure for any of the above stated reasons, the Agency that contracted for the public works project may petition the Director of the Office of Management and Budget for Suspension or Debarment of the Contractor. The Agency shall send a copy of

the petition to the Contractor within three (3) working days of filing with the Director. If the Director concludes that the petition has merit, the Director shall schedule and hold a hearing to determine whether to suspend the Contractor, debar the Contractor or deny the petition. The Agency shall have the burden of proving, by a preponderance of the evidence, that the Contractor failed to perform or complete the public works project within the time schedule established by the Agency and failed to do so for one or more of the following reasons: a) failure to supply the adequate labor supply ratio for the project; b) inadequate financial resources; or, c) poor performance on the project. Upon a finding in favor of the Agency, the Director may suspend a Contractor from Bidding on any project funded, in whole or in part, with public funds for up to 1 year for a first offense, up to 3 years for a second offense and permanently debar the Contractor for a third offense. The Director shall issue a written decision and shall send a copy to the Contractor and the Agency. Such decision may be appealed to the Superior Court within thirty (30) days for a review on the record."

8.5 RETAINAGE

8.5.1 Per Section 6962(d)(5) a.3, Title 29, Delaware Code: The Agency may at the beginning of each public works project establish a time schedule for the completion of the project. If the project is delayed beyond the completion date due to the Contractor's failure to meet their responsibilities, the Agency may forfeit, at its discretion, all or part of the Contractor's retainage.

8.5.2 This forfeiture of retainage also applies to the timely completion of the punchlist. A punchlist will only be prepared upon the mutual agreement of the Owner, Architect and Contractor. Once the punchlist is prepared, all three parties will by mutual agreement, establish a schedule for its completion. Should completion of the punchlist be delayed beyond the established date due to the Contractor's failure to meet their responsibilities, the Agency may hold permanently, at its discretion, all or part of the Contractor's retainage.

ARTICLE 9: PAYMENTS AND COMPLETION

9.1 APPLICATION FOR PAYMENT

9.1.1 Applications for payment shall be made upon AIA Document G702. There will be a five percent (5%) retainage on all Contractor's monthly invoices until completion of the project. This retainage may become payable upon receipt of all required closeout documentation, provided all other requirements of the Contract Documents have been met.

9.1.2 A date will be fixed for the taking of the monthly account of work done. Upon receipt of Contractor's itemized application for payment, such application will be audited, modified, if found necessary, and approved for the amount. Statement shall be submitted to the Owner.

9.1.3 Section 6516, Title 29 of the Delaware Code annualized interest is not to exceed 12% per annum beginning thirty (30) days after the "presentment" (as opposed to the date) of the invoice.

9.2 PARTIAL PAYMENTS

9.2.1 Any public works Contract executed by any Agency may provide for partial payments at the option of the Owner with respect to materials placed along or upon the sites or stored at secured locations, which are suitable for use in the performance of the contract.

9.2.2 When approved by the agency, partial payment may include the values of tested and acceptable materials of a nonperishable or noncontaminative nature which have been produced or furnished for incorporation as a permanent part of the work yet to be completed, provided acceptable provisions have been made for storage.

9.2.2.1 Any allowance made for materials on hand will not exceed the delivered cost of the materials as verified by invoices furnished by the Contractor, nor will it exceed the contract bid price for the material complete in place.

9.2.3 If requested by the Agency, receipted bills from all Contractors, Subcontractors, and material, men, etc., for the previous payment must accompany each application for payment. Following such a request, no payment will be made until these receipted bills have been received by the Owner.

9.3 SUBSTANTIAL COMPLETION

9.3.1 When the building has been made suitable for occupancy, but still requires small items of miscellaneous work, the Owner will determine the date when the project has been substantially completed.

9.3.2 If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and without terminating the Contract, the Owner may make payment of the balance due for the portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment that it shall not constitute a waiver of claims.

9.3.3 On projects where commissioning is included, the commissioning work as defined in the specifications must be complete prior to the issuance of substantial completion.

9.4 FINAL PAYMENT

9.4.1 Final payment, including the five percent (5%) retainage if determined appropriate, shall be made within thirty (30) days after the Work is fully completed and the Contract fully performed and provided that the Contractor has submitted the following closeout documentation (in addition to any other documentation required elsewhere in the Contract Documents):

9.4.1.1 Evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the work have been paid,

9.4.1.2 An acceptable RELEASE OF LIENS,

9.4.1.3 Copies of all applicable warranties,

9.4.1.4 As-built drawings,

9.4.1.5 Operations and Maintenance Manuals,

9.4.1.6 Instruction Manuals,

9.4.1.7 Consent of Surety to final payment.

9.4.1.8 The Owner reserves the right to retain payments, or parts thereof, for its protection until the foregoing conditions have been complied with, defective work corrected and all unsatisfactory conditions remedied.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take all reasonable precautions to prevent damage, injury or loss to: workers, persons nearby who may be affected, the Work, materials and equipment to be incorporated, and existing property at the site or adjacent thereto. The Contractor shall give notices and comply with applicable laws ordinances, rules regulations, and lawful orders of public authorities bearing on the safety of persons and property and their protection from injury, damage, or loss. The Contractor shall promptly remedy damage and loss to property at the site caused in whole or in part by the Contractor, a Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.

10.2 The Contractor shall notify the Owner in the event any existing hazardous material such as lead, PCBs, asbestos, etc. is encountered on the project. The Owner will arrange with a qualified specialist for the identification, testing, removal, handling and protection against exposure or environmental pollution, to comply with applicable regulation laws and ordinances. The Contractor and Architect will not be required to participate in or to perform this operation. Upon completion of this work, the Owner will notify the Contractor and Architect in writing the area has been cleared and approved by the authorities in order for the work to proceed. The Contractor shall attach documentation from the authorities of said approval.

10.3 As required in the Hazardous Chemical Information Act of June 1984, all vendors supplying any materials that may be defined as hazardous, must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a warning caution on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in any foreseeable emergency situation. Material Safety Data Sheets <u>must</u> be provided <u>directly to the Owner</u> along with the shipping slips that include those products.

10.4 The Contractor shall certify to the Owner that materials incorporated into the Work are free of all asbestos. This certification may be in the form of Material Safety Data Sheet (MSDS) provided by the product manufacturer for the materials used in construction, as specified or as provided by the Contractor.

ARTICLE 11: INSURANCE AND BONDS

11.1 The Contractor shall carry all insurance required by law, such as Unemployment Insurance, etc. The Contractor shall carry such insurance coverage as they desire on their own property such as a field office, storage sheds or other structures erected upon the project site that belong to them and for their own use. The Subcontractors involved with this project shall carry whatever insurance protection they consider necessary to cover the loss of any of their personal property, etc.

11.2 Upon being awarded the Contract, the Contractor shall obtain a minimum of two (2) copies of all required insurance certificates called for herein, and submit one (1) copy of each certificate, to the Owner, within 20 days of contract award.

11.3 Bodily Injury Liability and Property Damage Liability Insurance shall, in addition to the coverage included herein, include coverage for injury to or destruction of any property arising out of the collapse of or structural injury to any building or structure due to demolition work and evidence of these coverages shall be filed with and approved by the Owner.

11.4 The Contractor's Property Damage Liability Insurance shall, in addition to the coverage noted herein, include coverage on all real and personal property in their care, custody and control damaged in any way by the Contractor or their Subcontractors during the entire construction period on this project.

11.5 Builders Risk (including Standard Extended Coverage Insurance) on the existing building during the entire construction period, shall not be provided by the Contractor under this contract. The Owner shall insure the existing building and all of its contents and all this new alteration work under this contract during entire construction period for the full insurable value of the entire work at the site. Note, however, that the Contractor and their Subcontractors shall be responsible for insuring building materials (installed and stored) and their tools and equipment whenever in use on the project, against fire damage, theft, vandalism, etc.

11.6 Certificates of the insurance company or companies stating the amount and type of coverage, terms of policies, etc., shall be furnished to the Owner, within 20 days of contract award.

11.7 The Contractor shall, at their own expense, (in addition to the above) carry the following forms of insurance:

11.7.1 Contractor's Contractual Liability Insurance

Minimum coverage to be:

Bodily Injury	$500,000	for each person
	$1,000,000	for each occurrence
	$1,000,000	aggregate
Property Damage	$500,000	for each occurrence
	$1,000,000	aggregate

11.7.2 Contractor's Protective Liability Insurance

Minimum coverage to be:

Bodily Injury	$500,000	for each person
	$1,000,000	for each occurrence
	$1,000,000	aggregate
Property Damage	$500,000	for each occurrence
	$500,000	aggregate

11.7.3 Automobile Liability Insurance

Minimum coverage to be:

Bodily Injury	$1,000,000	for each person
	$1,000,000	for each occurrence
Property Damage	$500,000	per accident

11.7.4 Prime Contractor's and Subcontractors' policies shall include contingent and contractual liability coverage in the same minimum amounts as 11.7.1 above.

11.7.5 Workmen's Compensation (including Employer's Liability):

11.7.5.1 Minimum Limit on employer's liability to be as required by law.

11.7.5.2 Minimum Limit for all employees working at one site.

11.7.6 Certificates of Insurance must be filed with the Owner guaranteeing fifteen (15) days prior notice of cancellation, non-renewal, or any change in coverages and limits of liability shown as included on certificates.

11.7.7 Social Security Liability

11.7.7.1 With respect to all persons at any time employed by or on the payroll of the Contractor or performing any work for or on their behalf, or in connection with or arising out of the Contractor's business, the Contractor shall accept full and exclusive liability for the payment of any and all contributions or taxes or unemployment insurance, or old age retirement benefits, pensions or annuities now or hereafter imposed by the Government of the United States and the State or political subdivision thereof, whether the same be measured by wages, salaries or other remuneration paid to such persons or otherwise.

11.7.7.2 Upon request, the Contractor shall furnish Owner such information on payrolls or employment records as may be necessary to enable it to fully comply with the law imposing the aforesaid contributions or taxes.

11.7.7.3 If the Owner is required by law to and does pay any and/or all of the aforesaid contributions or taxes, the Contractor shall forthwith reimburse the Owner for the entire amount so paid by the Owner.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.1 The Contractor shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed, and shall correct any Work found to be not in accordance with the requirements of the Contract Documents within a period of two years from the date of Substantial Completion, or by terms of an applicable special warranty required by the Contract Documents. The provisions of this Article apply to work done by Subcontractors as well as to Work done by direct employees of the Contractor.

12.2 At any time during the progress of the work, or in any case where the nature of the defects shall be such that it is not expedient to have them corrected, the Owner, at their option, shall have the right to deduct such sum, or sums, of money from the amount of the contract as they consider justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1 CUTTING AND PATCHING

13.1.1 The Contractor shall be responsible for all cutting and patching. The Contractor shall coordinate the work of the various trades involved.

13.2 DIMENSIONS

13.2.1 All dimensions shown shall be verified by the Contractor by actual measurements at the project site. Any discrepancies between the drawings and specifications and the existing conditions shall be referred to the Owner for adjustment before any work affected thereby has been performed.

13.3 LABORATORY TESTS

13.3.1 Any specified laboratory tests of material and finished articles to be incorporated in the work shall be made by bureaus, laboratories or agencies approved by the Owner and reports of such tests shall be submitted to the Owner. The cost of the testing shall be paid for by the Contractor.

13.3.2 The Contractor shall furnish all sample materials required for these tests and shall deliver same without charge to the testing laboratory or other designated agency when and where directed by the Owner.

13.4 ARCHAEOLOGICAL EVIDENCE

13.4.1 Whenever, in the course of construction, any archaeological evidence is encountered on the surface or below the surface of the ground, the Contractor shall notify the authorities of the State Historic Preservation Office and suspend work in the immediate area for a reasonable time to permit those authorities, or persons designated by them, to examine the area and ensure the proper removal of the archaeological evidence for suitable preservation in the Division of Historical and Cultural Affairs.

13.5 GLASS REPLACEMENT AND CLEANING

13.5.1 The General Contractor shall replace without expense to the Owner all glass broken during the construction of the project. If job conditions warrant, at completion of the job the General Contractor shall have all glass cleaned and polished.

13.6 WARRANTY

13.6.1 For a period of two (2) years from the date of substantial completion, as evidenced by the date of final acceptance of the work, the contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect of equipment, material or workmanship performed by the contractor or any of his subcontractors or suppliers. However, manufacturer's warranties and guarantees, if for a period longer than two (2) years, shall take precedence over the above warranties. The contractor shall remedy, at his own expense, any such failure to conform or any such defect. The protection of this warranty shall be included in the Contractor's Performance Bond.

ARTICLE 14: TERMINATION OF CONTRACT

14.1 If the Contractor defaults or persistently fails or neglects to carry out the Work in accordance with the Contract Documents or fails to perform a provision of the Contract, the Owner, after seven days written notice to the Contractor, may make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. Alternatively, at the Owner's option, and the Owner may terminate the Contract and take possession of the site and of all materials, equipment, tools, and machinery thereon owned by the Contractor and may finish the Work by whatever method the Owner may deem expedient. If the costs of finishing the Work exceed any unpaid compensation due the Contractor, the Contractor shall pay the difference to the Owner.

14.2 "If the continuation of this Agreement is contingent upon the appropriation of adequate state, or federal funds, this Agreement may be terminated on the date beginning on the first fiscal year for which funds are not appropriated or at the exhaustion of the appropriation. The Owner may terminate this Agreement by providing written notice to the parties of such non-appropriation. All payment obligations of the Owner will cease upon the date of termination. Notwithstanding the foregoing, the Owner agrees that it will use its best efforts to obtain approval of necessary funds to continue the Agreement by taking appropriate action to request adequate funds to continue the Agreement."

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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.
7. Miscellaneous provisions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification: Exterior Restoration at 15 and 21 The Green.

1. Project Location: 15 and 21 The Green, Dover, DE 19901.

B. Owner: State of Delaware, Division of Historical and Cultural Affairs, 21 The Green, Dover, DE 19901.

C. Project Manager: State of Delaware, Division of Facilities Management, 540 South DuPont Highway, Thomas Collins Building, Suite 1, Dover, DE 19901.

D. Architect Identification: The Contract Documents, dated February 25, 2015, were prepared for Project by Bernardon Haber Holloway Architects LLC, 123 Justison Street, Suite 101, Wilmington, DE 19801.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

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

1. Refurbish wood windows on the north and west sides of the building.
2. Re-point areas of masonry.
3. Install joint sealants where indicated.
4. Replace cornice in kind where deteriorated.
5. Shore wall and replace deteriorated wall plate.
6. Replace sections of damaged wood wall and floor framing.
7. Demolish existing roofing in areas indicated. Install new asphalt shingle and SBS modified roof where indicated.
8. Demolish plumbing fixtures where indicated.
9. Patch wall, floor and ceiling finishes in areas of demolition.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 ACCESS TO SITE

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

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

1. Limits: Confine construction operations to the areas as indicated. The building is currently open to the public on established days. Coordinate with owner to maintain building security on days building is not occupied for visitation.
2. Driveways, Walkways and Entrances: Keep public roads, public parking, driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

   a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
   b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

3. The adjacent building areas and properties are occupied and shall not be disturbed.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weather tight condition throughout construction period. Repair damage caused by construction operations.

1.6 WORK RESTRICTIONS

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

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

2. Refer to Section 011400 “Work Restrictions” for additional requirements.

B. On-Site Work Hours: Limit work on the existing building to normal business working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated.

1. Weekend Hours: Weekend work shall not be allowed unless preapproved by the Owner.
2. Early Morning Hours: Early morning hours are not allowed unless required for utility shut downs.

C. Noise, Vibration, and Odors: Coordinate operations that may result in any level of noise and vibration, odors, or other disruption to the occupancy or use of adjacent occupied areas, the buildings and adjacent properties with the Owner.

1. Notify Architect and Owner not less than seven (7) days in advance of proposed disruptive operations.
2. Obtain Architect's and/or Owner's written permission before proceeding with disruptive operations.

D. Nonsmoking Campus and Building: Smoking is prohibited within the boundaries of all state workplaces including all buildings, facilities, indoor and outdoor spaces and all the surrounding grounds owned by the State. This policy also includes but is not limited to parking lots, walkways, State vehicles and private vehicles parked or operated on State workplace property. The State owns the Hall House, surrounding sidewalks to the curbs, and the adjacent Woodburn property.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

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

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

1.8 MISCELLANEOUS PROVISIONS

A. SCHEDULE

1. The following is the required schedule for this work:

a. Bids Due:April 9, 2015 10:00 AM**.**
b. Notice of Building Contract Award: Within thirty (30) days of receipt and acceptance of qualified low bid.
c. Purchase Order Issuance: The issuance of a State of Delaware purchase order is contingent upon the successful Contractor submitting bonds on State-approved forms, signed contracts and insurance certificates to the State of Delaware. A purchase order will be issued in approximately thirty days after these items have been submitted to the State of Delaware.
d. On-Site Mobilization: Upon receipt of State of Delaware purchase order and after April 9, 2015.
e. Substantial Completion: The work shall be completed shall be completed 45 calendar days from on-site start of work.
f. Completion of Punch List: 21 days from date of substantial completion.

1) Refer to the General Requirements for additional details.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 011400 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and other Division 1 Specification Sections apply to this Section.

1.2 USE OF PREMISES

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

1. Limits: Confine construction operations to the limits indicated on the drawings. Interior spaces may be accessed on a limited basis as they pertain to accessing the crawl space. Advance notice will be required as the site is not occupied on a daily basis.
2. Owner Occupancy: Allow for limited/scheduled Owner occupancy of site.
3. Exterior Work not Requiring Interior Access: The work can be completed within the Contractor's normal working hours in coordination with the City of Dover restrictions.
4. Interior Access: Preschedule with the Owner so that they may be present to unlock the building and secure it at the end of the day. At no times shall the building be left unlocked with no one present.
5. Contractor daily parking shall be on street adjacent to 15-21 The Green as permitted by local parking restrictions. Use of the adjacent parking areas is not allowed.
6. The dumpster may be located adjacent to 15&21 The Green as needed.
7. Public Roadways, Driveways and Entrances: Keep public roadways, driveways and entrances serving premises clear and available to Owner, Owner's employees, the public and emergency vehicles at all times.

    a. Schedule deliveries to minimize use of roadways, driveways and entrances.
    b. The Owner will not sign for any deliveries at any time.
    c. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
    d. Visible exterior storage areas will be temporarily allowed on the property, directly behind the structure.
    e. Contractor vehicles shall not be left at the site after working hours.

B. Use of Existing Building: Maintain the existing building in a weathertight condition throughout renovation period. Repair damage caused by construction operations. Protect building and its contents during construction period.

1. The Owner shall have control of access to 15 & 21 The Green at all times. No keys or security codes will be issued to the Contractor.
2. Use of the Owner's telephones will not be allowed.
3. Flammable materials shall not be stored in or near 15 & 21 The Green. Flammable materials shall be kept outside, away from all buildings, in a flammable liquid/material storage box.
4. Gas powered equipment will not be allowed in the building of near windows and louvers at any time.

5. Debris shall be removed from the 15 & 21 The Green site on a daily basis.
6. At no times shall equipment be left operating at the 15 & 21 The Green after hours or when no one is present at the building.
7. Noisy activities shall take place during the hours defined by the City of Dover and prescheduled with the Owner to avoid disruption of activities.
8. Access to the existing exterior hose bibs will be provided.
9. Construction crews will not be allowed to use the Owner's restroom facilities. The Contractor shall provide a self-contained toilet unit located out of view by the general public.
10. Dogs or other animals shall not be brought onto the property at any time.
11. Children shall not be brought onto the site at any time.
12. 15 & 21 The Green is a public facility and those working at the site shall not use abusive language.
13. Radios or other music-playing devices will not be allowed at anytime.
14. Fire extinguishers shall be kept in the areas under renovation at 15 & 21 The Green at all times.
15. All work taking place on the site shall be monitored by the contractor's project superintendent at all times.
16. The Project superintendant shall meet weekly with the site supervisor to review the activities planned for that week to avoid miscommunication, facilitate the renovation process and to maintain the Owner's operations.
17. Use of the Owner's sinks shall not be allowed at any time.
18. Walk off mats shall be provided at entrances to all construction areas from public ways if interior access is required.
19. The fire detection system shall remain active at all times. The Contractor shall protect the devices, including security alarm system accordingly.
20. Provide protective barriers and covers at entrances and public access areas where work is taking place overhead.

1.3 OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy site and existing building during entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011400

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Lump-sum allowances.
2. Unit-cost allowances.
3. Quantity allowances.
4. Contingency allowances.
5. Testing and inspecting allowances.

C. Related Requirements:

1. Section 012200 "Unit Prices" for procedures for using unit prices.
2. Section 014000 "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.4 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.5 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.6 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.7 LUMP-SUM ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include freight and delivery to Project site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.8 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.9 TESTING AND INSPECTING ALLOWANCES

A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.

B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum.

C. Costs of services not required by the Contract Documents are not included in the allowance.

D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.10 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

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

3.3 SCHEDULE OF ALLOWANCES – (None requested).

END OF SECTION 012100

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.2 DEFINITIONS

A. Unit price is a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES – (NONE REQUESTED)

END OF SECTION 012200

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate One: Install insulation in the floor cavity below the first floor.

1. State the amount to be added to the Base Bid for the above work.
2. Refer to drawings for scope of Alternate 1.

END OF SECTION 012300

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.3 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use CSI Form 13.1A.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

   a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
   b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
   c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
   d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
   e. Samples, where applicable or requested.
   f. Certificates and qualification data, where applicable or requested.
   g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than fifteen (15) days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Requested substitution will not adversely affect Contractor's construction schedule.
c. Requested substitution has received necessary approvals of authorities having jurisdiction.
d. Requested substitution is compatible with other portions of the Work.
e. Requested substitution has been coordinated with other portions of the Work.
f. Requested substitution provides specified warranty.
g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

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SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.2 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.3 PROPOSAL REQUESTS

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

1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
2. Within twenty (20) days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

   a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
   b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
   c. Include costs of labor and supervision directly attributable to the change.
   d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
   e. Quotation Form: Use CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail."

B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining 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 the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Work Change Proposal Request Form: Use CSI Form 13.6A, "Change Order Request (Proposal)," with attachments CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail."

1.4 ADMINISTRATIVE CHANGE ORDERS

A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

B. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Change Directive: Architect may issue a Change Directive on AIA Document G714. Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

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

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

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SECTION 012900 - 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 necessary to prepare and process Applications for Payment.

B. Related Sections include the following:

1. Division 1 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
2. Division 1 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

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

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:

   a. Application for Payment forms with Continuation Sheets.

2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the Schedule of Values:

   a. Project name and location.
   b. Name of Architect.
   c. Architect's project number.
   d. Contractor's name and address.

e. 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 the Work.
   c. Change Orders (numbers) that affect value.
   d. Dollar value.

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

3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

   a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.

6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

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

1.5 APPLICATIONS FOR PAYMENT

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

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

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

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

E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

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

1. List of subcontractors.
2. Schedule of Values.
3. Contractor's Construction Schedule (preliminary if not final).
4. List of Contractor's staff assignments (Project Superintendent specifically).
5. Copies of building permits.
6. Certificates of insurance and insurance policies.
7. Performance and payment bonds.

G. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

H. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Updated final statement, accounting for final changes to the Contract Sum.
2. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
3. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
4. AIA Document G707, "Consent of Surety to Final Payment."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

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SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General project coordination procedures.
2. Administrative and supervisory personnel.
3. Project meetings.

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

1. Division 1 Section "Construction Progress Documentation" for preparing and submitting the Contractor's Construction Schedule.
2. Division 1 Section "Closeout Procedures" for coordinating Contract closeout.

1.3 COORDINATION

A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with subcontractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

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

1. Prepare similar memoranda for Owner if coordination of their Work is required.

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

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.

3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.

1.4 SUBMITTALS

A. Staff Names: Within 15 days of notice to proceed, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1.5 PROJECT MEETINGS

A. General: The Architect will schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
2. Minutes: The Architect will record significant discussions and agreements achieved. The minutes will be distributed to everyone concerned, including Owner, within 7 days of the meeting.

B. Preconstruction Conference: A preconstruction conference will be scheduled before the start of construction, at a time convenient to the Owner and Contractor, but no later than 15 days after execution of the Agreement. The conference will be held at the Project. The meeting will be conducted to review responsibilities and personnel assignments.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Items of significance that could affect progress will be discussed, including the following:

a. Tentative construction schedule.
b. Designation of responsible personnel.
c. Procedures for processing field decisions and Change Orders.
d. Procedures for processing Applications for Payment.
e. Submittal procedures.
f. Preparation of Record Documents.
g. Use of the premises.
h. Responsibility for temporary facilities and controls.
i. Parking availability.
j. Storage areas.
k. Equipment deliveries and priorities.
l. Progress cleaning.
m. Working hours.

C. Progress Meetings: Progress meetings will be conducted every two weeks. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

   a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
   b. Review present and future needs of each entity present, including the following:

      1) Deliveries.
      2) Off-site fabrication.
      3) Access.
      4) Site utilization.
      5) Temporary facilities and controls.
      6) Work hours.
      7) Progress cleaning.
      8) Quality and work standards.

3. Reporting: The Architect will distribute minutes of the meeting to each party present and to parties who should have been present. A brief summary, in narrative form, of progress since the previous meeting and report will be included.

   a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. The revised schedule will be issued concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

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SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

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 documenting the progress of construction during performance of the Work, including the following:

1. Contractor's Construction Schedule.
2. Field condition reports.
3. Special reports.

B. Related Sections include the following:

1. Division 1 Section "Payment Procedures" for submitting the Schedule of Values.
2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.

B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Event: The starting or ending point of an activity.

E. Major Area: A story of construction, a separate building, or a similar significant construction element.

F. Milestone: A key or critical point in time for reference or measurement.

1.4 SUBMITTALS

A. Preliminary Construction Schedule: Submit two opaque copies.

B. Contractor's Construction Schedule: Submit two opaque copies of initial schedule, large enough to show entire schedule for entire construction period.

C. Field Condition Reports: Submit two copies at time of discovery of differing conditions.

D. Special Reports: Submit two copies at time of unusual event.

1.5 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

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

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."

B. Time Frame: Extend schedule from date established for commencement of the Work to date of Substantial Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.

3. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Work Restrictions: Show the effect of the following items on the schedule:

a. Coordination with existing construction.
b. Use of premises restrictions.
c. Provisions for future construction.
d. Seasonal variations.
e. Environmental control.

2. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

a. Mockups.
b. Fabrication.
c. Deliveries.
d. Installation.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion**.**

F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

2.2 CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Submit horizontal bar-chart-type construction schedule within five days of date established for commencement of the Work.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities.

2.3 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions.

7. Accidents.
8. Meetings and significant decisions.
9. Unusual events (refer to special reports).
10. Stoppages, delays, shortages, and losses.
11. Emergency procedures.
12. Orders and requests of authorities having jurisdiction.
13. Change Orders received and implemented.
14. Construction Change Directives received and implemented.
15. Substantial Completions authorized.

B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.4 SPECIAL REPORTS

A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At bi-weekly intervals, update schedule to reflect actual construction progress and activities. Issue schedule at each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, and other parties identified by Contractor with a need-to-know schedule responsibility.

END OF SECTION 013200

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final Completion construction photographs.

B. Related Sections include the following:

1. Division 01 Section "Submittal Procedures" for submitting photographic documentation.
2. Division 01 Section "Closeout Procedures" for submitting digital media as Project Record Documents at Project closeout.
3. Division 01 Section "Selective Demolition" for photographic documentation before selective demolition operations commence.

1.3 SUBMITTALS

A. Construction Digital Images: Submit a complete set of digital image electronic files as part of the Project closeout on CD-ROM, DVD or flash drive. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1600 by 1200 pixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Photographs are to be taken weekly at a minimum.
2. Photographs are to be taken when areas are opened prior to the start of the new work.
3. Provide temporary lighting when required to produce clear, well-lit photographs without obscuring shadows.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in filename for each image.
2. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Architect.

C. Preconstruction Photographs: Before commencement of excavation, commencement of demolition, and starting construction take color, digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.

1. Flag excavation areas and construction limits before taking construction photographs.
2. Take a minimum of eight photographs to show existing conditions adjacent to building before starting the Work.
3. Take a minimum of eight photographs of existing buildings adjacent to the building to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent pavements, and other improvements.

D. Architect-Directed Construction Photographs: From time to time, Architect will instruct the Contractor about number and frequency of color, digital photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.

E. Final Completion Construction Photographs: Take a minimum of eight color photographs each of the interior and exterior after date of Substantial Completion for submission as Project Record Documents. Architect will direct photographer for desired vantage points.

1. Do not include date stamp.

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Sections include the following:

1. Division 1 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
3. Division 1 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
4. Division 1 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
5. Division 1 Section "Closeout Procedures" for submitting warranties.
6. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
7. Division 1 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals. The Contractor will be responsible for field verifying existing conditions.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

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

C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

D. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information on label for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name and address of Contractor.
    e. Name and address of subcontractor.
    f. Name and address of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier.

        1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).

    i. Number and title of appropriate Specification Section.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

E. Deviations: Highlight or otherwise specifically identify deviations from the Contract Documents on submittals.

F. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
2. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.

G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.

1. Transmittal Form: Provide locations on form for the following information:

a. Project name.
b. Date.
c. Destination (To:).
d. Source (From:).
e. Names of subcontractor, manufacturer, and supplier.
f. Category and type of submittal.
g. Submittal purpose and description.
h. Specification Section number and title.
i. Drawing number and detail references, as appropriate.
j. Submittal and transmittal distribution record.
k. Remarks.
l. Signature of transmitter.

2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.

H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "Furnish as Submitted".

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Use only final submittals with mark indicating "Furnish as Submitted" or "Revise as Noted & Furnish" taken by Architect.

1.5 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

A. General: At Contractor's written request, copies of Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:

1. CADD files are limited to those that have been generated for this Project.
2. CADD files for the floor plans and roof plans shall be provided. Files for details, etc. will not be provided.
3. Contractor will be asked to sign Architects waiver of release form before files will be delivered to the contractor.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Standard color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Mill reports.
j. Standard product operation and maintenance manuals.
k. Compliance with specified referenced standards.
l. Testing by recognized testing agency.
m. Application of testing agency labels and seals.
n. Notation of coordination requirements.

4. Submit Product Data before or concurrent with Samples.
5. Number of Copies: Submit six (6) copies of Product Data, unless otherwise indicated. Architect will return three copies. Mark up and retain one returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

   a. Dimensions.
   b. Identification of products.
   c. Fabrication and installation drawings.
   d. Roughing-in and setting diagrams.
   e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
   f. Shopwork manufacturing instructions.
   g. Templates and patterns.
   h. Schedules.
   i. Design calculations.
   j. Compliance with specified standards.
   k. Notation of coordination requirements.
   l. Notation of dimensions established by field measurement.
   m. Relationship to adjoining construction clearly indicated.
   n. Seal and signature of professional engineer if specified.
   o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Number of Copies: Submit six (6) opaque copies of each submittal, unless copies are required for operation and maintenance manuals. Submit five copies where copies are required for operation and maintenance manuals. Architect will retain three copies; remainder will be returned.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

   a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

   a. Number of Samples: Submit four sets of Samples. Architect will retain three Sample sets; remainder will be returned.

      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least four sets of paired units that show approximate limits of variations.

E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product.
2. Number and name of room or space.
3. Location within room or space.
4. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Architect will return two copies.

   a. Mark up and retain one returned copy as a Project Record Document.

F. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation" for Construction Manager's action.

G. Submittals Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

H. Application for Payment: Comply with requirements specified in Division 1 Section "Payment Procedures."

I. Schedule of Values: Comply with requirements specified in Division 1 Section "Payment Procedures."

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

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. Architect will return two copies.

   a. Mark up and retain one returned copy as a Project Record Document.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit three copies of each submittal, unless otherwise indicated. Architect will not return copies.
2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."

C. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

M. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section "Quality Requirements."

N. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

O. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

P. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

Q. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data."

R. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads.

Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

S. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:

1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

T. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

U. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

V. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.

1. Architect will not review submittals that include MSDSs and will return the entire submittal for resubmittal.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date

of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. Furnish as Submitted.
2. Revise as Noted & Furnish.
3. Revise as Noted & Furnish. Submit Revised Copy for Record.
4. Revise & Resubmit.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 013591 - HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes general protection and treatment procedures for the entire Project.

1.3 DEFINITIONS

A. Existing to Remain: Existing items that are not to be removed or dismantled.

B. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance which are important to the successful reconstruction as determined by the Architect. The entire Old Sussex County Court House property is considered to be Historic for the purposes of this Project.

C. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by the Architect.

D. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.

E. Remove: Specifically for historic spaces, areas, rooms, and surfaces, the term means to detach an item from existing construction to the limits indicated, using hand tools and hand-operated power equipment, and legally dispose of it off-site, unless indicated to be salvaged or reinstalled.

F. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. Includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

G. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

H. Retain: To keep existing items that are not to be removed or dismantled.

I. Salvage: To protect removed or dismantled items and deliver them to Owner ready for reuse.

1.4 SUBMITTALS

A. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by historic treatment operations.

B. Inventory of Salvaged Items: After removal or dismantling work is complete, submit a list of items that have been salvaged.

1.5 STORAGE AND PROTECTION OF HISTORIC MATERIALS

A. Salvaged Materials:

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

B. Materials for Reinstallation:

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

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

1.6 PROJECT CONDITIONS

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

B. Owner will occupy the buildings immediately adjacent to removal and dismantling area. Conduct removal and dismantling work so Owner's operations will not be disrupted.

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

D. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.

E. Excavations:

1. Contact the Architect a minimum of two weeks prior to the start of any excavation work to allow for the State's archaeologist to be present to monitor the work.

   a. Allow adequate time for the archaeologist to inspect items that may be of historic value. Time lost by the contractor resulting from potential stoppages shall be recorded by the contractor. The time lost shall be added to the contract completion date.
   b. Typical work stoppages consist of less than one hour unless significant features are uncovered.
   c. The area where the new walkway is to be placed has been sufficiently researched and no new features are anticipated.
   d. The proposed work has minimal impact to soils below the top soil and should result in minimal stoppages.
   e. Stockpile removed soils to allow the archaeologist's inspection prior to removing from site if required.

F. 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. Owner will remove hazardous materials under a separate contract.

   a. In the case of asbestos, stop work in the area of potential hazard, shut off fans and other air-handlers ventilating the area, and rope off area until the questionable material is identified. Re-assign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.

G. Storage or sale of removed or dismantled items on-site is not permitted unless otherwise indicated.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION, GENERAL

A. Ensure that supervisory personnel are on-site and on duty when work near Historic spaces and areas begins and during its progress.

B. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm.

1. Use only proven protection methods, appropriate to each area and surface being protected.
2. Provide barricades, barriers, and temporary directional signage to exclude public from areas where work is being performed.
3. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of work.
4. Contain dust and debris generated by removal and dismantling work and prevent it from reaching the public or adjacent surfaces.
5. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
6. Protect floors and other surfaces along haul routes from damage, wear, and staining.

C. Temporary Protection of Historic Materials:

1. Protect existing historic materials with temporary protections and construction. Do not deface or remove existing materials.
2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Architect.

D. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

E. Utility and Communications Services:

1. Notify the Owner, Architect, and authorities having jurisdiction, owning or controlling wires, conduits, pipes, and other services affected by the work before commencing operations.
2. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

F. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is in working order.

1. Prevent solids such as stone or mortar residue from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

END OF SECTION 013591

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

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

C. Related Sections include but are not limited to the following:

1. Division 1 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
2. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.

D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.

K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and re-inspecting.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

F. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

G. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.

   a. Allow seven days for initial review and each re-review of each mockup.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

6. Demolish and remove mockups when directed, unless otherwise indicated.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor and the Contract Sum will be adjusted by Change Order.

B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

   a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."

D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.

3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for commencement of the Work.

1. Distribution: Distribute schedule to Owner, Architect testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.8 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.

4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

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SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. General: Basic contract definitions are included in the Conditions of the Contract.

B. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on the Drawings; or to other paragraphs or schedules in the Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference. Location is not limited.

C. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Architect, requested by the Architect, and similar phrases.

D. "Approved": The term "approved," when used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.

E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": The term "furnish" means to supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": The term "install" describes operations at the Project site including the actual unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer": An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1. The term "experienced," when used with the term "installer," means having successfully completed a minimum of five previous projects similar in size and scope to this Project;

being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction.

2. Trades: Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
3. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.

    a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

J. "Project site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

K. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. Specification Format: These Specifications are organized into Divisions and Sections based on the CSI/CSC's "MasterFormat" numbering system.

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

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words shall be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Section Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.

    a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.4 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of the date of the Contract Documents.

C. Conflicting Requirements: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to the Architect for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on the Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source and make them available on request.

E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where abbreviations and acronyms are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-producing organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Gale Research's "Encyclopedia of Associations" or Columbia Books' "National Trade & Professional Associations of the U.S.," which are available in most libraries.

1.5 SUBMITTALS

A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

PRODUCTS (Not Applicable)

PART 2 - EXECUTION (Not Applicable)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to testing agencies and authorities having jurisdiction.

B. Water Service: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

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

1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch, 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide galvanized steel bases for supporting posts.

B. Lumber and Plywood: Pressure-treated dimension lumber and plywood suitable for exterior exposure.

C. Paint: Exterior latex primer and matching topcoat.

2.2 TEMPORARY FACILITIES

A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated, with class and extinguishing agent as required by locations and classes of fire exposures.

B. Heating Equipment: Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sanitary Facilities:

1. Toilets: Use of Owner's existing toilet facilities will not be permitted. Provide temporary facilities as needed. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities. Coordinate location of temporary toilet facilities with Owner.

C. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner. Power may need to be extended at the Contractor's cost from adjacent structures.

3.3 SUPPORT FACILITIES INSTALLATION

A. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including landscaping, curbs, brick sidewalks, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

B. Project Identification and Temporary Signs: Provide Project identification sign as indicated at the end of this Section. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.

1. Provide temporary, directional signs for construction personnel and visitors.
2. Obtain sign permits if required by the Sussex County and/or The City of Dover.
3. Maintain and touchup signs so they are legible at all times.

C. Waste Disposal Facilities: Refer to Division 1 Section "Summary" for dumpster location. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.

D. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

E. Existing Stair and Steps Usage: Use of Owner's existing stairs and steps will be permitted, as long as they are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs and steps to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs/steps and to maintain means of egress. If, despite such protection, they become damaged, restore damaged areas so no evidence remains of correction work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Tree Protection: Install temporary fencing located outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

C. Plant Protection: Protect existing plantings around building.

D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

E. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Prohibit smoking in all interior spaces and exterior perimeter of the building.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 OPERATION, TERMINATION, AND REMOVAL

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

B. Maintenance: Maintain facilities in good operating condition until removal.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section "Closeout Procedures."

END OF SECTION 015000

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SECTION 015600 - ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.1 ENVIRONMENTAL PROTECTION

A. Environmental protection considerations consist of, but are not limited to, the following factors:

1. Natural resources including air, water, and land.
2. Solid waste disposal.
3. Noise.
4. Control of toxic substances and hazardous materials.
5. The presence of chemical, physical, and biological elements and agents that adversely effect and alter ecological balances.
6. Degradation of the aesthetic use of the environment.
7. Historical, archaeological, and cultural resources.

1.2 GENERAL REQUIREMENTS

A. Provide and maintain environmental protection defined herein.

B. Comply with all Federal, State, and local laws, ordinances and regulations pertaining to environmental protection.

C. Compliance by subcontractors with the provisions of this and various other sections of these specifications is the responsibility of the Contractor.

D. Use of equipment from which factory-installed, anti-pollution and noise control devices are removed or rendered ineffective, either intentionally or through lack of proper maintenance is prohibited.

E. Furnish a certificate that all materials and operating equipment installed as a part of this project, the installation thereof and all equipment used in the construction, are in compliance with all applicable local laws, ordinances, regulations and permits concerning environmental pollution control and abatement.

1.3 PROTECTION OF NATURAL RESOURCES

A. General: It is intended that the natural resources within the project boundaries and outside the limits of permanent work performed be preserved in their existing condition or be restored to an equivalent of the existing condition, as approved by the Architect, upon completion of the work. Confine on-site construction activities to areas defined by the drawings and specifications.

B. Protection of Existing Waterways and Highways:

1. Do not dump debris or rubbish of any kind into or allow to fall into waterways, onto adjacent banks, or onto highways. Take care to prevent damage and injury to personnel, vessels, and vehicles using rivers, highways, or pedestrian ways. Provide devices and maintain as required to prevent such occurrences. Promptly remove any material or items falling into a river, onto adjacent banks, or onto highways and immediately report to the Architect and the jurisdictional agency.

2. Do not close streets, walks, and other passageways anticipated to be closed to public access due to construction, demolition, or other related activities until an alternative routing plan is filed and written approval given by the appropriate local authority and the Architect.

C. Land Resources:

1. Except in areas indicated to be cleared, do not remove, cut, deface, injure, or destroy trees, shrubs, and vegetation without special permission from the Architect. Do not fasten or attach ropes, cables, or guys to any existing nearby trees for anchorage.

2. The use of herbicides is not permitted unless otherwise specified.

3. Submit a plan for protecting existing trees and vegetation to remain and that could be injured, bruised, defaced, and otherwise damaged by construction operations. Remove rocks that are displaced into uncleared areas.

4. Protect monuments, markers, and works of art prior to the start of operations.

5. Repair and restoration:

   a. All trees and other landscape features scarred or damaged by the Contractor's equipment and operations shall be repaired and restored to their original condition. Submit for the Architect’s approval the repair and restoration plan prior to its execution.

6. Construction facilities:

   a. The location of the Contractor's staging area, storage area and other construction buildings on public or privately owned property required temporarily in the performance of the Work, if not shown on the drawings require approval of the Architect. Store equipment and materials at the job site in conformance with applicable local statutes, ordinances, regulations, and rulings of the proper jurisdictional authority. Do not store unnecessary materials or equipment on the jobsite and take care to prevent any structure from being loaded with a weight that will endanger its structural integrity or the safety of persons. Do not store materials on or encroach upon private property without the written consent of the owners of such private property.

D. Water Resources:

1. Do not permit stream crossings by fording with equipment. Remove temporary culverts or bridge structures upon completion of the project and repair the area in conformance with its original condition and as specified herein.
2. At all times, take measures to prevent oil or other hazardous substances from entering the ground, drainage areas, and local bodies of water.
3. Protection of Existing Wetlands and Watercourses:

   a. Plan, schedule, and undertake work in a manner that will ensure the protection and preservation of existing wetlands and watercourses.
   b. Undertake work in and around wetlands and water courses in a manner to prevent any impact upon health, safety, and welfare.

E. Fish and Wildlife Resources:

1. Do not alter water flows or otherwise disturb native habitat near or adjacent to the project construction area.

F. Staging Areas:

1. Do not use in connection with this Contract, for storage, as a staging area, or as a preparation site, any cultural resource facility, building, site, or cleared area that is, as of the date of this Contract, on or eligible for listing on the National Register of Historic Places (16 U.S.C., paragraph 470a), without the prior approval of the Architect.
2. For the purpose of the preceding paragraph the term "cultural resource" includes districts, sites, building, structures, and objects significant in American history, architecture, archaeology, or culture.

G. Historical and Scientific Specimens:

1. Protect and preserve intact all historic architectural features indicated on the drawings and designated by the Architect. Protect these features from damage, including, but not limited to that resulting from the elements, vandalism, and effects of excavation, demolition, removal, and construction operations. Remove reserved features in a manner to prevent damage and pack or crate in a manner to protect from damage. Mark all containers with proper identification and deliver to designated onsite areas for storage or transfer to a warehouse. Replace or repair lost or damaged designated architectural features as directed by the Architect. Submit proposed protection and removal procedures for review by the Architect prior to commencing the Work. Provide procedures for the identification and protection of historic architectural features to be removed, safe conduct of the work, careful removal and disposition of preserved features, and the protection and storage of preserved features. Notify the Architect in writing of the Contractor's proposed schedule of removal of designated items. Protect Owner's right of ownership with regard to all preserved items.
2. If during the course of work, artifacts or other evidence of archaeological, historic, or scientific value are discovered or accidentally exposed, report such artifacts or evidence immediately to the Architect. Halt work in the immediate area and protect the artifacts or other evidence from damage, including that resulting from the elements, vandalism, and

the effects of excavation, demolition, removal, and construction operations until such time as qualified officials are able to conduct appropriate investigations. Do not proceed with work in the immediate area until authorization to proceed is obtained from the Architect. Deliver any such evidence or artifacts found during construction operations or subsequent investigations required by this section into the custody of the Owner. They do not become the property of the Contractor. Any delay in the progress of the work as a result of encountering archaeological or historic artifacts on the project is to be mitigated by the Contractor.

1.4 TOXIC SUBSTANCES

A. Asbestos and Hazardous Materials Procedure: In the event the Contractor, during the course of the work on the project, encounters the presence of asbestos or any materials containing asbestos, or polychlorinated biphenyl (PCB's) or any other hazardous materials as recognized by local Authorities having jurisdiction, promptly notify the Owner through the Architect. Do not perform any work pertinent to the asbestos or hazardous material prior to receipt of special instructions from the Owner through the Architect. Any delay in the progress of the work as a result of encountering either asbestos or hazardous materials on the project will be mitigated by the Architect. Within 24 hours of this notification to the Owner through the Architect of the encountering of the presence of asbestos or hazardous materials, the Contractor will meet with the Architect to replan and work around the affected area. The Architect will provide the special instructions without delay and upon confirmation by the local Authorities of the actions taken, authorize work to progress.

B. Asbestos has been found in the pipe fittings on fiberglass insulated pipes, 9x9 floor tile and mastic,interior window caulking, exterior window glazing, and roof flashing tar. Refer to "Kirk Short Buildings (10K18 and 10K11) 15-21 The Green Asbestos NESHAP Inspections" dated February 17, 2014 and prepared by Harvard Environmental, Inc.

C. Asbestos remediation of sealants has not been completed and will be removed by the State as part of a separate contract.

D. Phase II Restoration Work Comply with all applicable provisions of the National Emission Standards for Asbestos (40 CFR 61 Subpart B).

E. Comply with the local regulations of polychlorinated biphenyl (PCB). Since these chemicals are used in some existing insulation, existing fixed and vehicular transformers, assure proper marking, handling, and disposal of any PCB's in accordance with the regulations of 40 CFR 761.

1. Do not use PCB chemical substance, mixture, equipment, container, sealant, coating, or dust-control agent except in accordance with regulations of 40 CFR 761.
2. Immediately report any PCB chemical substance, mixture, equipment, container, sealant, coating or dust control agent found stored within the project area to the Architect in writing and stop work in the area.

F. Lead paint is present on the existing exterior and interior wood surfaces. Remove the loose paint and dispose of according to all County, State and Federal requirements. Encapsulate

existing paint where not indicated to be removed. Refer to "Kirk Short Building – Interior Lead Based Paint Inspection" dated November 10, 2010 prepared by Harvard Environment, Inc.

1.5 CONTROL AND DISPOSAL OF EXCESS MATERIAL, TRASH AND DEBRIS

A. Pick-up trash and place in containers. Empty containers on a regular schedule. Conduct handling and disposal to prevent contamination of the site and other areas. Do not dispose of in areas of natural vegetation. On completion, leave the area clean and natural looking.

B. Dispose of rubbish and debris as follows:

1. Transport all waste off the site and dispose of it in a manner that complies with State, and local requirements. Secure a permit or license prior to transporting any material off the site. Do not burn or bury waste materials on the site.

1.6 CONTROL AND DISPOSAL OF CHEMICAL AND SANITARY WASTES

A. Use chemical toilets or comparably effective units with wastes periodically emptied. Include provisions for pest control and for masking or elimination of odors.

B. Store chemical waste in corrosion-resistant containers, remove from the project site, and dispose of as necessary, but not less frequently than monthly. Provide for disposal of chemical waste in accordance with standard established practices as approved by the Architect. Conduct fueling and lubricating of equipment and motor vehicles onsite in a manner that affords the maximum protection against spills and evaporation. Dispose of lubricants to be discarded, including burned oil, in accordance with approved procedures meeting state, and local regulations. For oil and hazardous material spills that may be large enough to violate state, and local regulations, notify immediately the Architect.

1.7 DUST CONTROL

A. Keep dust down at all times including nonworking hours, weekends, and holidays. Treat soil at the site, haul roads, and other areas disturbed by the Contractor's operations and materials stockpiled for the project with dust suppressers or cover to control dust. Dry power brooming will not be permitted. Use vacuuming, wet mopping, wet sweeping, or wet power brooming instead. Air blowing permitted only for cleaning off nonparticle debris, such as that from reinforcing bars. Sandblasting permitted only as specified. Only wet cutting of concrete block, concrete, and asphalt will be permitted.

B. Inspect all vehicles for dirt prior to their leaving the construction site. Remove dirt, soil, and rubble likely to be dislodged from the vehicles tires during transit from the trucks.

C. Secure and cover transport equipment and loose materials in transit to ensure that materials do not become airborne during transit.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 015600

HARVARD
Environmental, Inc.

760 Pulaski Highway
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1-302-326-2333

Kirk Short Buildings
(10K18 and 10K11)
15-21 The Green

Asbestos NESHAP Inspections
Phase II Restoration Work
Project # MC2006000083

Dover, DE

FINAL REPORT – 2/17/14
Harvard Project # 14434

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Table Of Contents

Introductions & Executive Summary

Harvard Environmental, Inc. herein presents data associated with inspections performed at the Kirk Short Buildings located at 15-21 The Green, Dover, DE 19901. This inspection was performed to provide compliance with 40 CFR Part 61, "Asbestos NESHAP. These Environmental Protection Agency, (EPA), regulations require inspections to be performed by certified asbestos building inspectors prior to renovations and/or demolition of facilities. This effort was performed at the request of State of Delaware, Division of Facilities Management and the Department of State.

This project was performed in order to identify asbestos containing materials associated with the interior and exterior of the structures in preparation of 2nd phase of restoration work. The inspection work was specific to areas outlined in the drawings provided to Harvard by Bernardon Haber Holloway Architects (BBH). Revision set dated 12/12/14 details the work areas. Harvard Environmental Inc. assessed the impacted building materials which would be considered suspect asbestos containing. A listing of locations, systems and/or materials which were not assessed may be found under "Non Assessed Conditions" found further in this report.

Harvard requested drawings of the existing facility layouts/designs to assist in documenting field assessments and to provide insight as to the location of suspect materials which may be associated with the facility. Floor plans of the facility were available and provided by BBH. Drawings were edited on CAD and utilized for orientation of ACM and sample locations.

The last day of visitation to the site was performed on 1/29/15. Conditions described within this document are accurate as of the date of last visitation. Mr. Ronald Knight was the responsible Harvard Environmental, Inc. employee which led the field efforts associated with the work.

Representative sampling of suspect asbestos building materials was performed on impacted building materials. The sampling effort was conducted in accordance with EPA regulations and industry accepted standards.

Asbestos analysis was completed utilizing Polarized Light Microscopy, (PLM). PLM utilizes an optical microscope equipped with a polarizing lens through which trained microscopist can identify asbestos fibers according to their crystalline structure. This method of analysis is recognized throughout the industry as standard practice. Prior to determining the type of fiber, the sample was placed under a "Stereo Microscope" at approximately 150X magnification for purposes of visual estimation. Various fiber types were pulled from the sample and oils applied to determine refractive indices under the polarized light microscope.

This recognized method of analysis has a detection limit of 1% by volume. Percentages of asbestos < 1% are reported as "trace" and are not considered asbestos containing materials under EPA regulations.

In order to best document the assessment, Harvard Environmental, Inc. assessed the layout and design of locations requiring assessment and assigned each geographic area a unique alpha/numeric "grid" identifier. These identifiers are specific locations of the assessment and are the basis for orientation of the data.

<u>Based on the information provided to Harvard Environmental, Inc., coupled with field inspections and laboratory analysis of samples collected, asbestos will be impacted.</u>

Provided is a summary listing of materials assessed under this inspection. The detailed inspection data is provided as appendices further in the report.

Summary Of Materials Assessed

Materials Summary 1-29-15 Inspection			
ID	**Material Description**	**Analytical Result**	**Quantity**
001	Roof Material C Roof	<1% Chrysotile	1,600 SF
002	***Roof Flashing Material C Roof***	***10% Chrysotile Asbestos***	***40 LF***
003	Roof Shingles D Roof	No Asbestos Detected	585 SF
004	Roof Tar Paper under metal and Shingle Roofs (D Roof)	No Asbestos Detected	810
005	***Roof Flashing Material D Roof***	***3% Chrysotile Asbestos***	***27 LF***
006	Brown Cove Base Molding	No Asbestos Detected	6 LF
007	Brown Cove Base Molding Mastic	No Asbestos Detected	6 LF
008	Fiberglass Pipe Insulation Covering	No Asbestos Detected	36 LF
009	***Pipe Fitting Insulation***	***5% Chrysotile Asbestos***	***4 EA***
010	Exterior Window Caulking (See Appendix for Specifics)	No Asbestos Detected	24 LF
011	Exterior Window Glazing (See Appendix for Specifics)	No Asbestos Detected	96 LF
012	***Interior Window Caulking (See Appendix for Specifics)***	***3% Chrysotile, 2% Anthophyllite Asbestos***	***48 LF***
013	***Exterior Window Glazing (See Appendix for Specifics)***	***2% Chrysotile Asbestos***	***165 LF***
014	Drywall (see HA #002 from '07 Inspection)	No Asbestos Detected - TEM Confirmed	-
015	Joint Compound (see HA #003 from '07 Inspection)	No Asbestos Detected - Historical Data	-
016	Wall Plaster Finish (see HA #054 from '07 Inspection)	No Asbestos Detected - Historical Data	-
017	Wall Plaster Undercoat (see HA #055 from '07 Inspection)	No Asbestos Detected - Historical Data	-
018	Floor Sheeting (see HA #050 from '07 Inspection)	No Asbestos Detected - Historical Data	-
019	Floor Sheeting Backing (see HA #051 from '07 Inspection)	No Asbestos Detected - Historical Data	-
020	Floor Sheeting Mastic (see HA #052 from '07 Inspection)	No Asbestos Detected - Historical Data	-
021	Brown Cove Base Molding	Not Suspected to be Asbestos	-
022	Cove Base Mastic (see HA #013 from '07 Inspection)	No Asbestos Detected - Historical Data	-
023	Gray 9x9 Floor Tile (see HA #014 from '07 Inspection)	No Asbestos Detected - Historical Data	-
024	Gray 9x9 Floor Tile Mastic (see HA #015 from '07 Inspection)	No Asbestos Detected - Historical Data	-
025	***Brown 9x9 Floor Tile (see HA #037 from '07 Inspection)***	***8% Chrysotile Asbestos Historical Data***	***115 SF***
026	***Brown 9x9 Floor Tile Mastic (see HA #038 from '07 Inspection)***	***10% Chrysotile Asbestos Historical Data***	***115 SF***
027	***Brown with Specks 9x9 Floor Tile (see HA #043 from '07 Inspection)***	***2% Chrysotile Asbestos Historical Data***	***115 SF***
028	***Brown with Specks 9x9 Floor Tile Mastic (see HA #038 from '07 Inspection)***	***10% Chrysotile Asbestos Historical Data***	***115 SF***
029	12x12 Ceiling Tile	No Asbestos Detected - Historical Data	-
030	Glue Dots	No Asbestos Detected - Historical Data	-
031	Ceiling Plaster Finish (see HA #056 from '07 Inspection)	No Asbestos Detected - Historical Data	-
032	Ceiling Plaster Undercoat (see HA #057 from '07 Inspection)	No Asbestos Detected - Historical Data	-

Historical Data Materials 001-058 - Summary From Report Dated 11-2-10 (Project # 8999)			
Materials Summary			
ID	Material Description	Analytical Result	Quantity
001	***Door Caulk***	***3% Chrysotile Asbestos***	***101 LF***
002	Drywall	No Asbestos Detected	1625 LF
003	Ceiling Plaster Finish	No Asbestos Detected - Historical Data	
004	Ceiling Plaster Undercoat	No Asbestos Detected - Historical Data	
005	***Pipe Insulation***	***5% Chrysotile Asbestos***	***1 LF***
006	Wall Plaster Finish	No Asbestos Detected - Historical Data	
007	Wall Plaster Undercoat	No Asbestos Detected - Historical Data	
008	2x2 Ceiling Tile	No Asbestos Detected	5758 SF
009	12X12 Floor Tile	No Asbestos Detected - Historical Data	448 SF
010	12x12 Floor Tile Mastic	No Asbestos Detected - Historical Data	448 SF
011	Carpet Mastic	No Asbestos Detected - Historical Data	5131 SF
012	Felt Paper	No Asbestos Detected	2072 SF
013	Cove Base Mastic	No Asbestos Detected	689 LF
014	9x9 Floor Tile	0.4% Chrysotile - TEM Confirmed	1624 SF
015	9x9 Floor Tile Mastic	No Asbestos Detected - TEM Confirmed	1624 SF
016	Joint Compound	No Asbestos Detected - Historical Data	2832 SF
017	Drywall	No Asbestos Detected - Historical Data	2832 SF
018	***9x9 Floor Tile (Black)***	***8% Chrysotile Asbestos***	***3 SF***
019	***9x9 Floor Tile Mastic***	***2.8% Chrysotile Asbestos - TEM Confirmed***	***3 SF***
020	Floor Sheeting (Tan)	No Asbestos Detected	70 SF
021	Floor Sheeting Backing	No Asbestos Detected	70 SF
023	Floor Sheeting (Dark Brown)	No Asbestos Detected	2019 SF
024	Floor Sheeting Backing	No Asbestos Detected	2019 SF
026	2x4 Ceiling Tile	Not Suspect - Fiberboard	170 SF
027	12x12 Floor Tile	0.7 % Chrysotile - TEM Confirmed	100 SF
028	12x12 Floor Tile Mastic	No Asbestos Detected - TEM Confirmed	100 SF
029	12x12 Floor Tile (Tan/Brown Spots)	<0.25% Chrysotile - TEM Confirmed	85 SF
030	12x12 Floor Tile Mastic	0.3% Chrysotile - TEM Confirmed	85 SF
031	Cove Base Mastic (Green molding)	No Asbestos Detected	60 LF
032	***9x9 Floor Tile (Tan)***	***5% Chrysotile Asbestos***	***685 SF***
033	***9x9 Floor Tile Mastic***	***5% Chrysotile Asbestos***	***685 SF***
034	12x12 Floor Tile (Green)	<0.25% Chrysotile - TEM Confirmed	140 SF
035	12x12 Floor Tile Mastic	0.5% Chrysotile - TEM Confirmed	140 SF
036	2x2 Ceiling Tile	No Asbestos Detected	370 SF
037	***9x9 Floor Tile***	***8% Chrysotile Asbestos***	***1282 SF***
038	***9x9 Floor Tile Mastic***	***10% Chrysotile Asbestos***	***1282 SF***
039	12x12 Floor Tile (Self Sticking)	<0.25% Chrysotile - TEM Confirmed	20 SF
041	12x12 Ceiling Tile	No Asbestos Detected	100 SF
042	Glue Dots	No Asbestos Detected	100 SF
043	***9x9 Floor Tile (Brown/Tan)***	***2% Chrysotile Asbestos***	***15 SF***
044	9x9 Floor Tile Mastic	0.9% Chrysotile - TEM Confirmed	15 SF
045	9x9 Floor Tile (Green/Grey)	No Asbestos Detected -Historical Data	625 SF
046	9x9 Floor Tile Mastic	No Asbestos Detected -Historical Data	625 SF
047	Window Caulking (Interior)	No Asbestos Detected	340 SF

Materials Summary			
ID	Material Description	Analytical Result	Quantity
048	***9x9 Floor Tile (Black)***	***5% Chrysotile Asbestos***	***144 SF***
049	***9x9 Floor Tile Mastic***	***14.7% Chrysotile - TEM Confirmed***	***144 SF***
050	Floor Sheeting	No Asbestos Detected	24 SF
051	Floor Sheeting Backing	No Asbestos Detected	24 SF
052	Floor Sheeting Mastic	No Asbestos Detected	24 SF
053	***Pipe Fitting Insulation***	***10% Chrysotile Asbestos***	***40 EA***
054	Wall Plaster Finish	No Asbestos Detected	
055	Wall Plaster Undercoat	No Asbestos Detected	
056	Ceiling Plaster Finish	No Asbestos Detected	
057	Ceiling Plaster Undercoat	No Asbestos Detected	
058	Flue Packing	No Asbestos Detected	2 SF

Non Assessed Conditions

Systems and/or materials provided on the list below were not assessed under this inspection and therefore should not be disturbed. In the event disturbance is required to accomplish the project objectives additional investigations will be required.

- This inspection was limited to the interior and exterior areas shown on the BHH drawing set, dated 12/12/14.
- All other materials within the building can be referenced within report #8999 dated 11/2/10.

Recommendations

Based on the findings of the inspection, Harvard Environmental, Inc. is providing the following recommendations.

- If over the course of project execution, materials of questionable content are discovered, or should the Scope of Work expand beyond the parameters communicated to Harvard Environmental, Inc., additional inspections will be required in order to maintain compliance with Federal and State regulations.

- Abatement of all asbestos containing building materials must be performed prior to any demolition or renovations of those areas containing the materials. Harvard Environmental, Inc. can further assist your needs for compliance with state regulations regarding asbestos abatement projects.

This report is intended to provide “basic data” only. It is assumed that individuals reading and interpreting the sample locations and results, methods of analysis and hazards associated with the materials, are knowledgeable in all areas of discussion. Should any questions arise regarding the content of the information presented, contact should be exclusively to Harvard Environmental, Inc., Bear, Delaware, 1-302-326-2333. This document should be archived by the Owner for historical reference.

Certifications And Accreditations

Appendix A

Certifications And Accreditations

LICENSE NO. 1993108790
POST CONSPICUOUSLY

STATE OF DELAWARE
DIVISION OF REVENUE

VALID
01/01/14 - 12/31/16
NOT TRANSFERABLE

DLN: 13 51446 53
BUSINESS CODE: 099
GROUP CODE: 007
LICENSED ACTIVITY: PROFESSIONAL AND/OR PRSL SRVCS-UNCLASSIFIED
PROFESSIONAL AND/OR PERSONAL SERVICES

DATE ISSUED: 12/31/13
LICENSE FEE: $ 225.00

"VALIDATED"

2016

BUSINESS LICENSE

MAILING ADDRESS
HARVARD ENVIRONMENTAL INC
760 PULASKI HWY
BEAR DE 19701-5200

BUSINESS LOCATION
HARVARD ENVIRONMENTAL INC
760 PULASKI HWY
BEAR DE 19701-5200

IS HEREBY LICENSED TO PRACTICE, CONDUCT OR ENGAGE IN THE OCCUPATION OR BUSINESS ACTIVITY INDICATED ABOVE IN ACCORDANCE WITH THE LICENSE APPLICATION DULY FILED PURSUANT TO TITLE 30, DEL CODE

PATRICK T. CARTER
DIRECTOR OF REVENUE

STATE OF DELAWARE

THIS CERTIFIES THAT
Harvard Environmental, Incorporated

Has satisfactorily completed the requirements prescribed by the Office of Management & Budget as a Asbestos Abatement Professional Service Firm this

Twelfth Day of February Two Thousand Fifteen

This certification is valid for one (1) year to perform asbestos services within the State of Delaware.

This certification shall be proof that the above named Contractor has met the minimum requirements established by the State of Delaware for temporary certification. It is not intended as an overall endorsement of the Contractor's ability to provide services of varying size and shape. It does not endorse the methods and types of respiratory protection used by the Contractor.

Contractor's Address: 760 Pulaski Highway
Bear, DE 19701

Expiration Date: February 12, 2016
Certification Number: PS-054

Director
Division of Facilities Management

Certificate of Completion

Ronald Knight

for successfully completing the prescribed course of study in

Pennsylvania Asbestos
Building Inspector Refresher Course
under TSCA Title II

presented by
ACCESS TRAINING SERVICES, INC.
7921 River Road, Pennsauken, NJ 08110
(856) 665-3449

7/17/14	N/A	7/17/15
Course Date	*Exam Date*	*Expiration Date*
Not Provided	ACC-0714-6-004	
Social Security Number	*Certificate Number*	*Mark K. Schläger* *Training Director*

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200885-0

Harvard Environmental, Inc.
Bear, DE

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

BULK ASBESTOS FIBER ANALYSIS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2014-07-01 through 2015-06-30
Effective dates

For the National Institute of Standards and Technology

NVLAP-01C (REV. 2009-01-28)

Homogeneous Characterizations Report

Appendix B

Homogeneous Systems Report

Homogeneous System 001	1600 SF	☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable	☑ Non-Friable	
Analytical Results <1% Chrysotile	**Sample Identification**	001A	001B	001C			
	Collection Point Grid	A102-3	A102-3	A102-3			
Description Roof Material C Roof	**Analytical Results**	<1% Chrysotile	<1% Chrysotile	No Asbestos Detected			
Homogeneous System 002	40 LF	☑ Asbestos	☐ PACM	☐ Non-Asbestos	☐ Friable	☑ Non-Friable	
Analytical Results 10% Chrysotile Asbestos	**Sample Identification**	002A	002B	002C			
	Collection Point Grid	A102-3	A102-3	A102-3			
Description Roof Flashing Material C Roof	**Analytical Results**	10% Chrysotile Asbestos	Sample Not Analyzed	sample Not Analyzed			
Homogeneous System 003	585 SF	☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable	☑ Non-Friable	
Analytical Results No Asbestos Detected	**Sample Identification**	003A	003B	003C			
	Collection Point Grid	A102-2	A102-2	A102-2			
Description Roof Shingles D Roof	**Analytical Results**	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected			
Homogeneous System 004	810 SF	☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable	☑ Non-Friable	
Analytical Results No Asbestos Detected	**Sample Identification**	004A	004B	004C			
	Collection Point Grid	A102-2	A102-2	A102-2			
Description Roof Tar Paper under metal and Shingle Roofs (D Roof)	**Analytical Results**	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected			

Notes:
1. "Total Materials" reflects the quantity of materials evaluated under this assessment. This value may not reporesent a complete inventory of all materials associated with a system, grid or building. Reference should be made to the descriptions provided in the"Executive Summary", to qualify the value indicated in this field. If no value is provided in this field, quantification of the material was not performed.

2. "PACM" - Presumed Asbestos Containing Material - Sampling Not Performed.

Homogeneous Systems Report

Homogeneous System 005	27 LF	☑ Asbestos	☐ PACM	☐ Non-Asbestos	☐ Friable	☑ Non-Friable	
Analytical Results 3% Chrysotile Asbestos	**Sample Identification**	005A	005B	005C			
	Collection Point Grid	A102-2	A102-2	A102-2			
Description Roof Flashing Materials D Roof	**Analytical Results**	10% Chrysotile Asbestos	Sample Not Analyzed	Sample Not Analyzed			
Homogeneous System 006	6 LF	☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable	☑ Non-Friable	
Analytical Results No Asbestos Detected	**Sample Identification**	006A					
	Collection Point Grid	A102-1					
Description Brown Cove Base Molding	**Analytical Results**	No Asbestos Detected					
Homogeneous System 007	6 LF	☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable	☑ Non-Friable	
Analytical Results No Asbestos Detected	**Sample Identification**	007A					
	Collection Point Grid	A102-1					
Description Cove Base Molding Mastic	**Analytical Results**	No Asbestos Detected					
Homogeneous System 008	36 LF	☐ Asbestos	☐ PACM	☑ Non-Asbestos	☑ Friable	☐ Non-Friable	
Analytical Results No Asbestos Detected	**Sample Identification**	008A					
	Collection Point Grid	EP100-B					
Description Fiberglass Pipe Insulation Covering	**Analytical Results**	No Asbestos Detected					

Notes:
1. "Total Materials" reflects the quantity of materials evaluated under this assessment. This value may not reporesent a complete inventory of all materials associated with a system, grid or building. Reference should be made to the descriptions provided in the"Executive Summary", to qualify the value indicated in this field. If no value is provided in this field, quantification of the material was not performed.

2. "PACM" - Presumed Asbestos Containing Material - Sampling Not Performed.

Homogeneous Systems Report

Homogeneous System 009	4 EA	☑ Asbestos	☐ PACM	☐ Non-Asbestos	☑ Friable	☐ Non-Friable		
Analytical Results 5% Chrysotile Asbestos	**Sample Identification**	009A	009B	009C				
	Collection Point Grid	EP100-B	EP100-B	EP100-B				
Description Pipe Fitting Insulation	**Analytical Results**	5% Chrysotile Asbestos	Sample Not Analyzed	Sample Not Analyzed				
Homogeneous System 010	24 LF	☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable	☑ Non-Friable		
Analytical Results No Asbestos Detected	**Sample Identification**	010A	010B	010C				
	Collection Point Grid	A202-1	A202-1	A202-1				
Description Exterior Window Caulking	**Analytical Results**	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected				
Homogeneous System 011	96 LF	☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable	☑ Non-Friable		
Analytical Results No Asbestos Detected	**Sample Identification**	011A	011B	011C				
	Collection Point Grid	A202-1	A202-1	A202-1				
Description Exterior Window Glazing	**Analytical Results**	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected				

Notes:
1. "Total Materials" reflects the quantity of materials evaluated under this assessment. This value may not reporesent a complete inventory of all materials associated with a system, grid or building. Reference should be made to the descriptions provided in the"Executive Summary", to qualify the value indicated in this field. If no value is provided in this field, quantification of the material was not performed.

2. "PACM" - Presumed Asbestos Containing Material - Sampling Not Performed.

Homogeneous Systems Report

Homogeneous System 012	48 LF	☑ Asbestos	☐ PACM	☐ Non-Asbestos	☐ Friable	☑ Non-Friable	
Analytical Results 3% Chrysotile & 2% Anthophyllite Asbestos	**Sample Identification**	012A	012B	012C			
	Collection Point Grid	A202-1	A202-1	A202-1			
Description Interior Window Caulking	**Analytical Results**	3% Chrysotile & 2% Anthophyllite Asbestos	Sample Not Analyzed	Sample Not Analyzed			
Homogeneous System 013	165 LF	☑ Asbestos	☐ PACM	☐ Non-Asbestos	☐ Friable	☑ Non-Friable	
Analytical Results 2% Chrysotile Asbestos	**Sample Identification**	013A	013B	013C			
	Collection Point Grid	A203-1	A203-1	A203-1			
Description Exterior Window Glazing	**Analytical Results**	2% Chrysotile Asbestos	Sample Not Analyzed	Sample Not Analyzed			
Homogeneous System 014		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☑ Friable	☐ Non-Friable	
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**						
	Collection Point Grid						
Description Drywall	**Analytical Results**						

Notes:
1. "Total Materials" reflects the quantity of materials evaluated under this assessment. This value may not reporesent a complete inventory of all materials associated with a system, grid or building. Reference should be made to the descriptions provided in the"Executive Summary", to qualify the value indicated in this field. If no value is provided in this field, quantification of the material was not performed.

2. "PACM" - Presumed Asbestos Containing Material - Sampling Not Performed.

Homogeneous Systems Report

Homogeneous System 015		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Joint Compound Associated with Drywall	**Analytical Results**				
Homogeneous System 016		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Wall Plaster Finish Coat	**Analytical Results**				
Homogeneous System 017		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Wall Plaster Undercoat	**Analytical Results**				

Notes:
1. "Total Materials" reflects the quantity of materials evaluated under this assessment. This value may not reporesent a complete inventory of all materials associated with a system, grid or building. Reference should be made to the descriptions provided in the"Executive Summary", to qualify the value indicated in this field. If no value is provided in this field, quantification of the material was not performed.
2. "PACM" - Presumed Asbestos Containing Material - Sampling Not Performed.

Homogeneous Systems Report

Homogeneous System 018		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Floor Sheeting	**Analytical Results**				
Homogeneous System 019		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Floor Sheeting Backing	**Analytical Results**				
Homogeneous System 020		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Floor Sheeting Mastic	**Analytical Results**				
Homogeneous System 021		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Brown Cove Base Molding	**Analytical Results**				

Notes:
1. "Total Materials" reflects the quantity of materials evaluated under this assessment. This value may not reporesent a complete inventory of all materials associated with a system, grid or building. Reference should be made to the descriptions provided in the"Executive Summary", to qualify the value indicated in this field. If no value is provided in this field, quantification of the material was not performed.

2. "PACM" - Presumed Asbestos Containing Material - Sampling Not Performed.

Homogeneous Systems Report

Homogeneous System 022		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Brown Cove Base Molding Mastic	**Analytical Results**				
Homogeneous System 023		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Gray 9x9 Floor Tile	**Analytical Results**				
Homogeneous System 024		☐ Asbestos	☐ PACM	☑ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results No Asbestos Detected - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Gray 9x9 Floor Tile Mastic	**Analytical Results**				
Homogeneous System 025	115 SF	☑ Asbestos	☐ PACM	☐ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results 8% Chrysotile Asbestos - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Brown 9x9 Floor Tile	**Analytical Results**				

Notes:
1. "Total Materials" reflects the quantity of materials evaluated under this assessment. This value may not reporesent a complete inventory of all materials associated with a system, grid or building. Reference should be made to the descriptions provided in the"Executive Summary", to qualify the value indicated in this field. If no value is provided in this field, quantification of the material was not performed.

2. "PACM" - Presumed Asbestos Containing Material - Sampling Not Performed.

Homogeneous Systems Report

Homogeneous System 026	115 SF	☑ Asbestos	☐ PACM	☐ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results 10% Chrysotile Asbestos - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Brown 9x9 Floor Tile Mastic	**Analytical Results**				
Homogeneous System 027	115 SF	☑ Asbestos	☐ PACM	☐ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results 2% Chrysotile Asbestos - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Brown with Specks 9x9 Floor Tile	**Analytical Results**				
Homogeneous System 028	115 SF	☑ Asbestos	☐ PACM	☐ Non-Asbestos	☐ Friable ☑ Non-Friable
Analytical Results 10% Chrysotile Asbestos - Historical Data	**Sample Identification**				
	Collection Point Grid				
Description Brown with Specks 9x9 Floor Tile Mastic	**Analytical Results**				

Notes:
1. "Total Materials" reflects the quantity of materials evaluated under this assessment. This value may not reporesent a complete inventory of all materials associated with a system, grid or building. Reference should be made to the descriptions provided in the"Executive Summary", to qualify the value indicated in this field. If no value is provided in this field, quantification of the material was not performed.

2. "PACM" - Presumed Asbestos Containing Material - Sampling Not Performed.

Homogeneous Systems Report

Homogeneous System
029

☐ Asbestos ☐ PACM ☑ Non-Asbestos ☑ Friable ☐ Non-Friable

Analytical Results
No Asbestos Detected - Historical Data

Sample Identification

Collection Point Grid

Description
12x12 Ceiling Tile

Analytical Results

Homogeneous System
030

☐ Asbestos ☐ PACM ☑ Non-Asbestos ☐ Friable ☑ Non-Friable

Analytical Results
No Asbestos Detected - Historical Data

Sample Identification

Collection Point Grid

Description
12x12 Ceiling Tile Glue Dots

Analytical Results

Homogeneous System
031

☐ Asbestos ☐ PACM ☑ Non-Asbestos ☐ Friable ☑ Non-Friable

Analytical Results
No Asbestos Detected - Historical Data

Sample Identification

Collection Point Grid

Description
Ceiling Plaster Finish Coat

Analytical Results

Homogeneous System
032

☐ Asbestos ☐ PACM ☑ Non-Asbestos ☐ Friable ☑ Non-Friable

Analytical Results
No Asbestos Detected - Historical Data

Sample Identification

Collection Point Grid

Description
Ceiling Plaster Undercoat

Analytical Results

Notes:
1. "Total Materials" reflects the quantity of materials evaluated under this assessment. This value may not reporesent a complete inventory of all materials associated with a system, grid or building. Reference should be made to the descriptions provided in the"Executive Summary", to qualify the value indicated in this field. If no value is provided in this field, quantification of the material was not performed.

2. "PACM" - Presumed Asbestos Containing Material - Sampling Not Performed.

Homogeneous Systems Report

Homogeneous System
NAS

Analytical Results
No Asbestos Detected

Description
No Asbestos Suspected in this Area

☐ Asbestos ☐ PACM ☑ Non-Asbestos ☐ Friable ☐ Non-Friable

Sample Identification

Collection Point Grid

Analytical Results

Notes:
1. "Total Materials" reflects the quantity of materials evaluated under this assessment. This value may not reporesent a complete inventory of all materials associated with a system, grid or building. Reference should be made to the descriptions provided in the"Executive Summary", to qualify the value indicated in this field. If no value is provided in this field, quantification of the material was not performed.

2. "PACM" - Presumed Asbestos Containing Material - Sampling Not Performed.

Schematic Diagrams/Sample Locations & Material Inventory Report

Appendix C

Grid Descriptions

A101-1	Office 116/Bath E112 - Kirk Building
A101-2	Vestibule/Bathroom 121 - Kirk Building
A102-1	Bathroom GL-5 - Kirk Building
A102-2	Roof D - Kirk Building
A102-3	Roof C - Short Building
A202-1	North Exterior Windows - Kirk and Short Buildings
A202-2	North Exterior Chimney - Kirk Building
A203-1	West Exterior Windows - Kirk Building
A203-2	West Exterior Chimney - Kirk Building
EP100-1	1st Fl. Office 116/ Vestibule 121 Wall -Kirk Bldg.
EP100-2	2nd Floor Bathroom/ Vest. 216 - Kirk Building
EP100-B	Basement Room 026 Wall - Kirk Building

Materials Inventory Report

Grid	System	Homogeneous	Material	Description	Quantity	Analytical Results
A101-1	**Office 116/Bath E112 - Kirk Building**					
	DW	014	Misc. Material	Drywall		No Asbestos Detected - Historical Data
	JC	015	Misc. Material	Joint Compound Associated with Drywall		No Asbestos Detected - Historical Data
	CB	021	Misc. Material	Brown Cove Base Molding		No Asbestos Detected - Historical Data
	CBM	022	Misc. Material	Brown Cove Base Molding Mastic		No Asbestos Detected - Historical Data
	FT9	023	Misc. Material	Gray 9x9 Floor Tile		No Asbestos Detected - Historical Data
	FT9M	024	Misc. Material	Gray 9x9 Floor Tile Mastic		No Asbestos Detected - Historical Data
A101-2	**Vestibule/Bathroom 121 - Kirk Building**					
	DW	014	Misc. Material	Drywall		No Asbestos Detected - Historical Data
	JC	015	Misc. Material	Joint Compound Associated with Drywall		No Asbestos Detected - Historical Data
	WPF	016	Surfacing Material	Wall Plaster Finish Coat		No Asbestos Detected - Historical Data
	WPU	017	Surfacing Material	Wall Plaster Undercoat		No Asbestos Detected - Historical Data
	FS	018	Misc. Material	Floor Sheeting		No Asbestos Detected - Historical Data
	FSB	019	Misc. Material	Floor Sheeting Backing		No Asbestos Detected - Historical Data
	Misc.	020	Misc. Material	Floor Sheeting Mastic		No Asbestos Detected - Historical Data

Materials Inventory Report

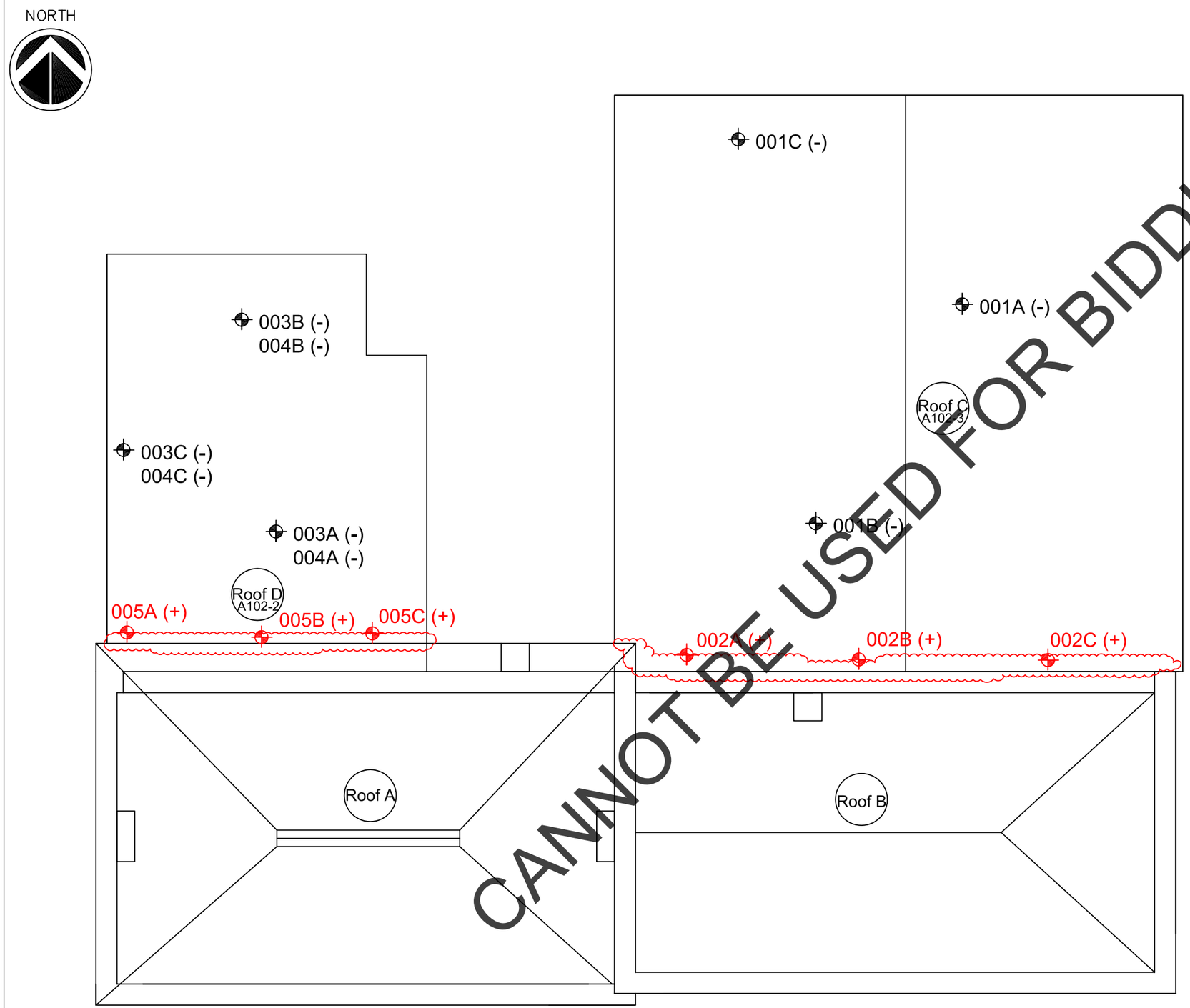
Grid	System	Homogeneous	Material	Description	Quantity		Analytical Results
A102-1	**Bathroom GL-5 - Kirk Building**						
	CB	006	Misc. Material	Brown Cove Base Molding	6	LF	No Asbestos Detected
	CBM	007	Misc. Material	Cove Base Molding Mastic	6	LF	No Asbestos Detected
	WPF	016	Surfacing Material	Wall Plaster Finish Coat			No Asbestos Detected - Historical Data
	WPU	017	Surfacing Material	Wall Plaster Undercoat			No Asbestos Detected - Historical Data
	FT9	025	Misc. Material	Brown 9x9 Floor Tile	115	SF	8% Chrysotile Asbestos - Historical Data
	FT9M	026	Misc. Material	Brown 9x9 Floor Tile Mastic	115	SF	10% Chrysotile Asbestos - Historical Data
	FT9	027	Misc. Material	Brown with Specks 9x9 Floor Tile	115	SF	2% Chrysotile Asbestos - Historical Data
	FT9M	028	Misc. Material	Brown with Specks 9x9 Floor Tile Mastic	115	SF	10% Chrysotile Asbestos - Historical Data
	CT12	029	Misc. Material	12x12 Ceiling Tile			No Asbestos Detected - Historical Data
	CTGD	030	Misc. Material	12x12 Ceiling Tile Glue Dots			No Asbestos Detected - Historical Data
	CPF	031	Surfacing Material	Ceiling Plaster Finish Coat			No Asbestos Detected - Historical Data
	CPU	032	Surfacing Material	Ceiling Plaster Undercoat			No Asbestos Detected - Historical Data

Materials Inventory Report

Grid	System	Homogeneous	Material	Description	Quantity		Analytical Results
A102-2	**Roof D - Kirk Building**						
	RS	003	Misc. Material	Roof Shingles D Roof	585	SF	No Asbestos Detected
	RTP	004	Misc. Material	Roof Tar Paper under metal and Shingle Roofs (D Roof)	810	SF	No Asbestos Detected
	RF	005	Misc. Material	Roof Flashing Materials D Roof	27	LF	3% Chrysotile Asbestos
A102-3	**Roof C - Short Building**						
	RM	001	Misc. Material	Roof Material C Roof	1600	SF	<1% Chrysotile
	RF	002	Misc. Material	Roof Flashing Material C Roof	40	LF	10% Chrysotile Asbestos
A202-1	**North Exterior Windows - Kirk and Short Buildings**						
	CLK	010	Misc. Material	Exterior Window Caulking	24	LF	No Asbestos Detected
	GLZ	011	Misc. Material	Exterior Window Glazing	96	LF	No Asbestos Detected
	CLK	012	Misc. Material	Interior Window Caulking	48	LF	3% Chrysotile & 2% Anthophyllite Asbestos
A202-2	**North Exterior Chimney - Kirk Building**						
	NAS	NAS		No Asbestos Suspected in this Area			No Asbestos Detected
A203-1	**West Exterior Windows - Kirk Building**						
	GLZ	013	Misc. Material	Exterior Window Glazing	165	LF	2% Chrysotile Asbestos
A203-2	**West Exterior Chimney - Kirk Building**						
	NAS	NAS		No Asbestos Suspected in this Area			No Asbestos Detected
EP100-1	**1st Fl. Office 116/ Vestibule 121 Wall -Kirk Bldg.**						
	NAS	NAS		No Asbestos Suspected in this Area			No Asbestos Detected
EP100-2	**2nd Floor Bathroom/ Vest. 216 - Kirk Building**						
	NAS	NAS		No Asbestos Suspected in this Area			No Asbestos Detected

Materials Inventory Report

Grid	System	Homogeneous	Material	Description	Quantity		Analytical Results
EP100-B	**Basement Room 026 Wall - Kirk Building**						
	PI	008	Thermal Systems Insulation	Fiberglass Pipe Insulation Covering	36	LF	No Asbestos Detected
	PF	009	Thermal Systems Insulation	Pipe Fitting Insulation	4	EA	5% Chrysotile Asbestos



General Notes:

1. Presentation of information is based on best available information. PDF Drawing schematics were provided to Harvard Environmental Inc. by BHH Architects. CAD drawings were developed by Harvard and edited for purposes of asbestos inspections and bulk sampling of the Kirk Short Buildings, 15-21 The Green, Dover, DE. The inspection identifies asbestos containing materials associated with the interior and exterior of the structures in preparation of 2nd phase of restoration work. The work was specific to areas outlined in the drawings provided to Harvard by Bernardon Haber Holloway Architects (BBH). Revision set dated 12/12/14 details the work areas. These Drawings are not to be considered to scale and are intended to be used for orientation purposes only and identifying the ACM and bulk sample locations.

0.01 Grid ID

PLM Bulk Sample Locations

Asbestos Roof Flashing
Estimated 67 Linear Feet Total
(40 LF on C Roof and 27 LF on D Roof)

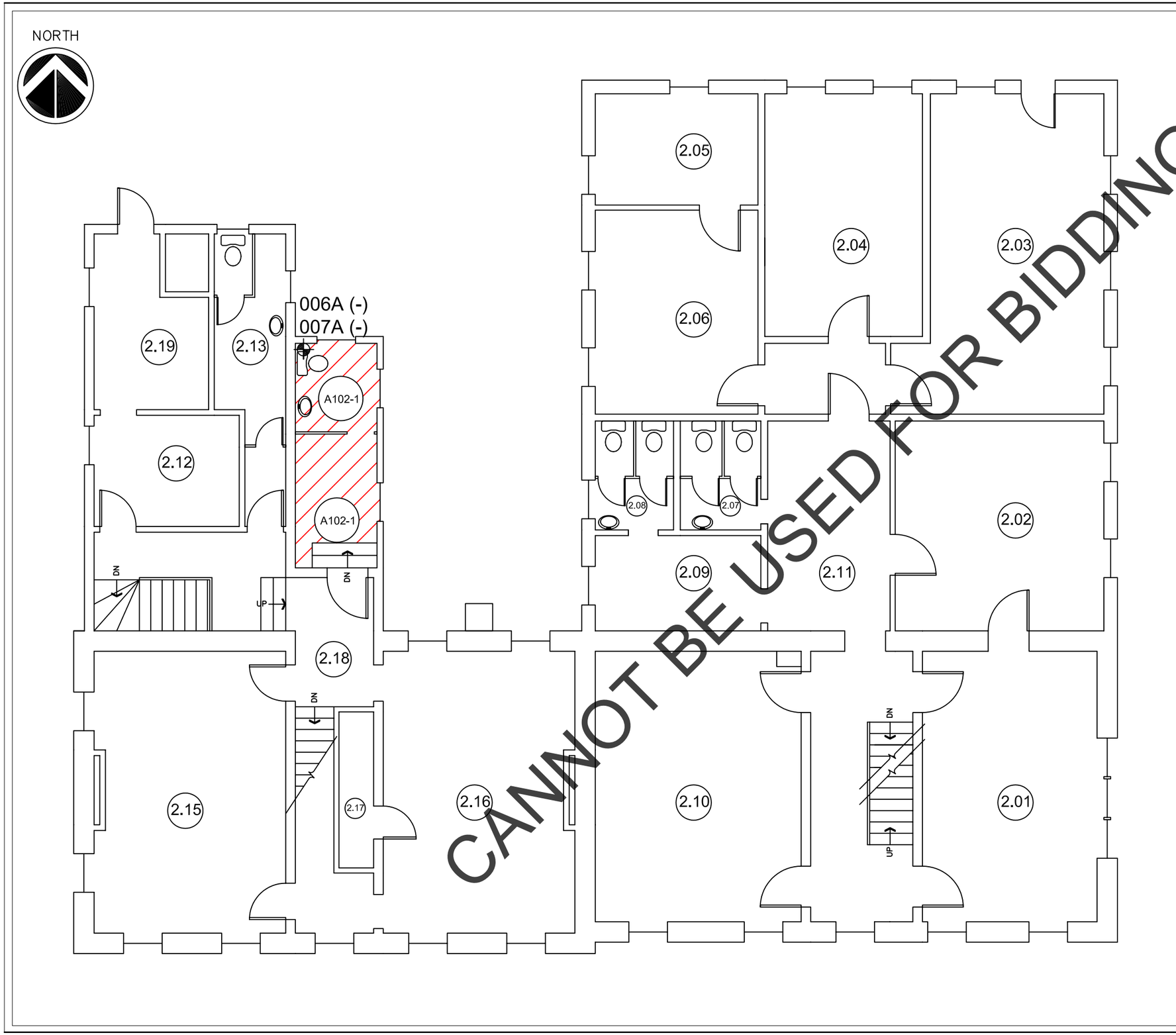
State of Delaware
Division of Facilities Management

Kirk Short Building
15-21 The Green
Dover, DE 19901

Rew By: WGM
Dwg By: MPS
2-17-15
PF-14434
DWG 1 of 5

Roof Plan "A-102"
Asbestos NESHAP Inspection
Bulk Sample/ ACM Locations
Project # MC200600083

HARVARD Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701
1-302-326-2333



General Notes:

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0.01 Grid ID

PLM Bulk Sample Locations

Asbestos Floor Tile and Mastic - Estimated 115 SF

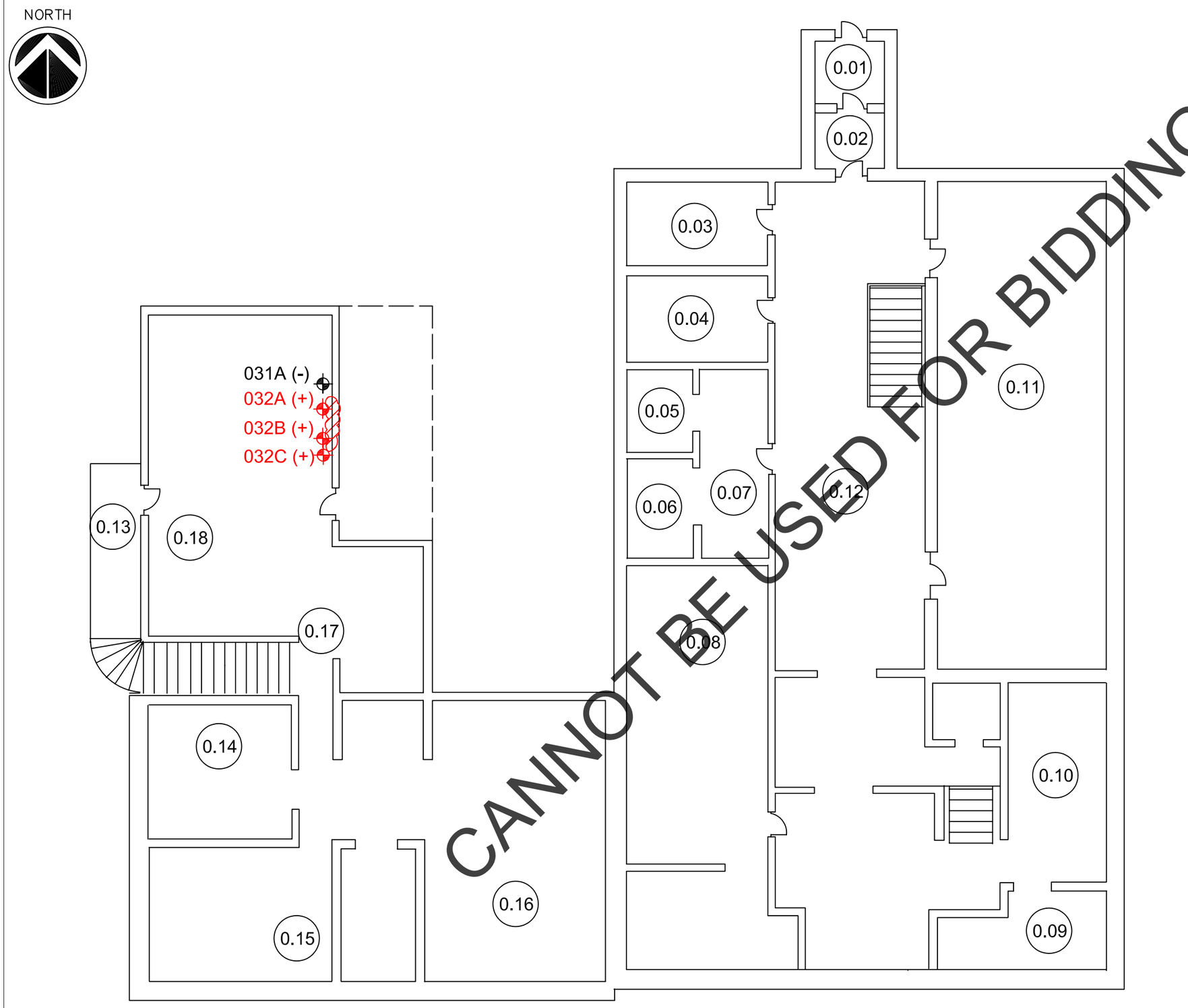
State of Delaware
Division of Facilities Management

Kirk Short Building
15-21 The Green
Dover, DE 19901

Rew By: WGM
Dwg By: MPS
2-17-15
PF-14434
DWG 2 of 5

2nd Floor Plan "A-102-1"
Asbestos NESHAP Inspection
Bulk Sample/ ACM Locations
Project # MC2006000083

HARVARD Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701
1-302-326-2333



General Notes:

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0.01 Grid ID

PLM Bulk Sample Locations

Asbestos Pipe Fitting Insulation on Non-Asbestos Fiberglass Insulated Pipe - 4 EA

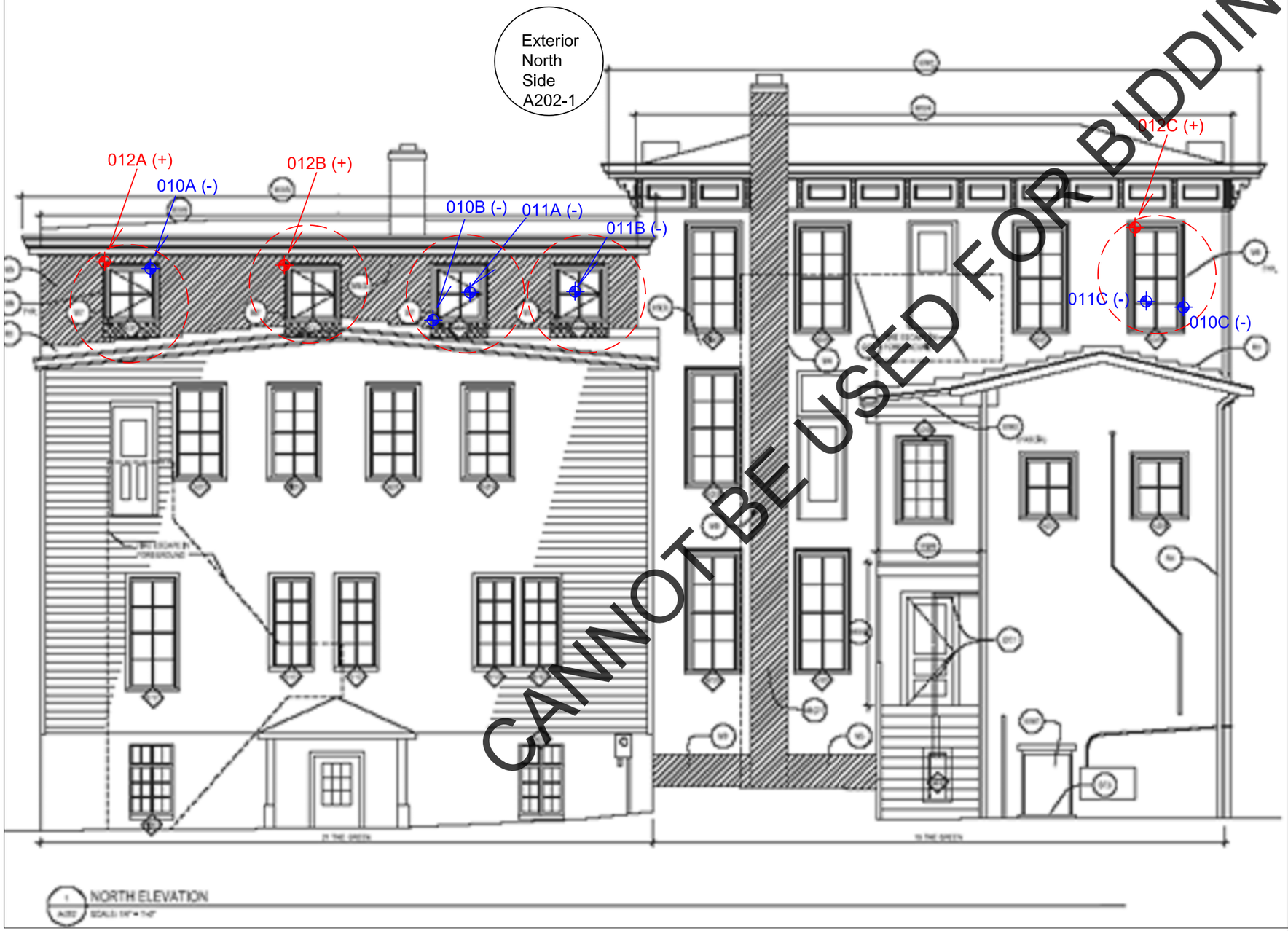
State of Delaware
Division of Facilities Management

Kirk Short Building
15-21 The Green
Dover, DE 19901

Rew By: WGM
Dwg By: MPS
2-17-15
PF-14434
DWG 3 of 5

Basement Plan "EP100-B"
Asbestos NESHAP Inspection
Bulk Sample/ ACM Locations
Project # MC200600083

HARVARD Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701
1-302-326-2333



General Notes:

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A202-1 Grid ID (Reference BHH Drawings)

PLM Bulk Sample Locations

Asbestos Interior Window Caulking 5 Windows Scheduled for Renovations #'s N301, N302, N303, N304 and N308

State of Delaware
Division of Facilities Management

Kirk Short Building
15-21 The Green
Dover, DE 19901

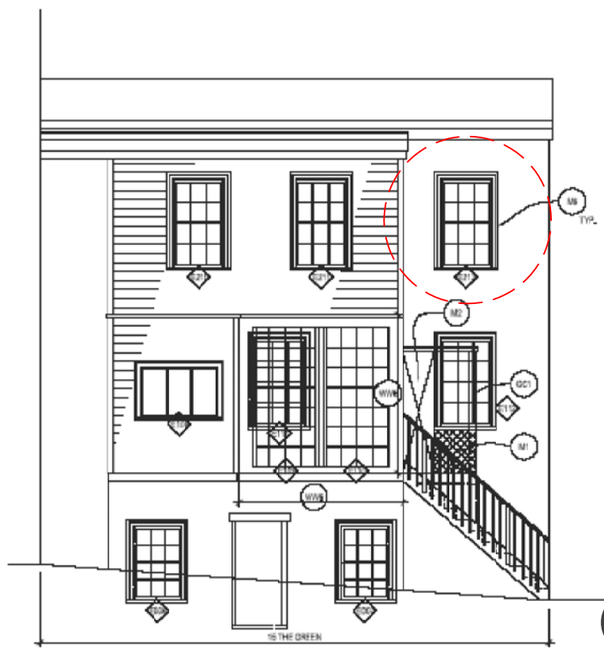
Rew By: WGM
Dwg By: MPS
2-17-15
PF-14434
DWG 4 of 5

Exterior Plan North Side "A-202"
Asbestos NESHAP Inspection
Bulk Sample/ ACM Locations
Project # MC2006000083

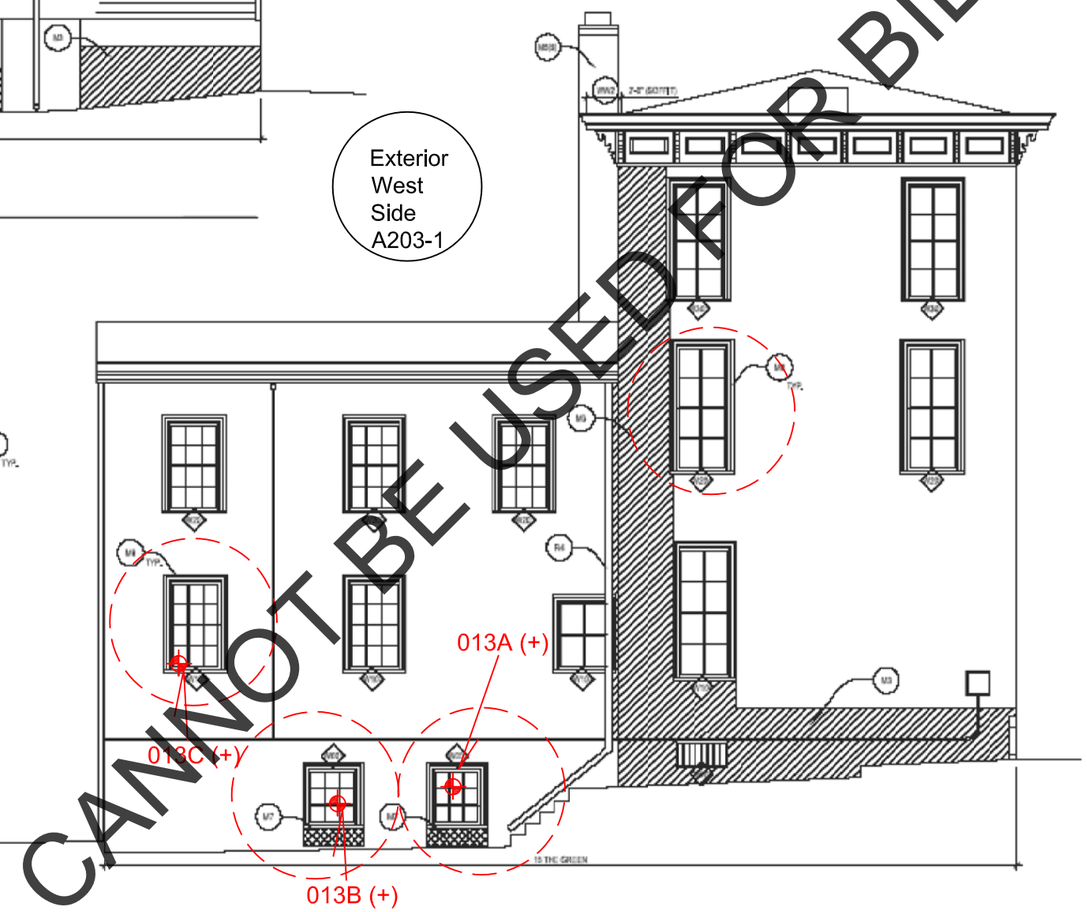
HARVARD Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701
1-302-326-2333

2 A-203 WEST ELEVATION
SCALE: 1/4" = 1'-0"

Exterior West Side A203-1



3 A-203 EAST ELEVATION
SCALE: 1/4" = 1'-0"



1 A-203 WEST ELEVATION
SCALE: 1/4" = 1'-0"

General Notes:

1. Presentation of information is based on best available information. PDF Drawing schematics were provided to Harvard Environmental Inc. by BHH Architects. CAD drawings were developed by Harvard and edited for purposes of asbestos inspections and bulk sampling of the Kirk Short Buildings, 15-21 The Green, Dover, DE. The inspection identifies asbestos containing materials associated with the interior and exterior of the structures in preparation of 2nd phase of restoration work. The work was specific to areas outlined in the drawings provided to Harvard by Bernardon Haber Holloway Architects (BBH). Revision set dated 12/12/14 details the work areas. These Drawings are not to be considered to scale and are intended to be used for orientation purposes only and identifying the ACM and bulk sample locations.

A203-1 Grid ID (Reference BHH Drawings)

PLM Bulk Sample Locations

Asbestos Exterior Window Glazing 5 Windows Scheduled for Renovations #'s W001, W002, W101, E212 and W204.

State of Delaware
Division of Facilities Management

Kirk Short Building
15-21 The Green
Dover, DE 19901

Rew By: WGM
Dwg By: MPS
2-17-15
PF-14434
DWG 5 of 5

Exterior Plan West Side "A-203"
Asbestos NESHAP Inspection
Bulk Sample/ ACM Locations
Project # MC200600083

HARVARD Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701
1-302-326-2333

Laboratory Analysis

Appendix D

HARVARD
Environmental, Inc.

760 Pulaski Highway Bear, Delaware 19701
Phone: 302-326-2333 Fax: 302-326-2335

LF-407:

CERTIFICATE OF ANALYSIS

14434

To: **Doyle Tiller**
Division Of Facilities Manageme
540 South DuPont Highway-3rd Floor
Dover, DE
19901-

Wednesday, February 04, 2015

Lab Project Number: 14331

			QTY
Recieved	Ashley Mote	2/2/2015	33
Logged	Ashley Mote	2/2/2015	33
Analyzed	Asghar Keyvanfar	2/4/2015	23

Re: DFM - Kirk Short Building - 15 and 21 The Green,

Sample Number: 001A
COC Description: Roof Material - Roof C

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
<1	Chrysotile	10	Cellulose	90	Other

LAB SAMPLE ID 86806

Color:	Black
Other Color	Grey
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Sample Number: 001B
COC Description: Roof Material - Roof C

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
<1	Chrysotile	10	Cellulose	90	Other

LAB SAMPLE ID 86807

Color:	Black
Other Color	Grey
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Sample Number: 001C
COC Description: Roof Material - Roof C

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected	10	Cellulose	90	Other

LAB SAMPLE ID 86808

Color:	Black
Other Color	
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Sample Number: 002A
COC Description: Roof Flashing - Roof C

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
10	Chrysotile	10	Cellulose	80	Other

LAB SAMPLE ID 86809

Color:	Black
Other Color	
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Analysis Method: EPA 600/R-93/116

Comments: (PC) Indicates Point Count Method performed. Method not performed unless stated. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based on the sample matrix. Quantification at <1% by volume is possible with this method. Analyst specific measurements of uncertainty at lower concentrations are available upon request. Analysis indicates all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed.

Asghar Keyvanfar
Analyst

NVLAP®
NVLAP Lab Code 200885-0

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Environmental, Inc.

760 Pulaski Highway Bear, Delaware 19701
Phone: 302-326-2333 Fax: 302-326-2335

LF-407:

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Dover, DE
19901-

Wednesday, February 04, 2015

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			QTY
Recieved	Ashley Mote	2/2/2015	33
Logged	Ashley Mote	2/2/2015	33
Analyzed	Asghar Keyvanfar	2/4/2015	23

Re: DFM - Kirk Short Building - 15 and 21 The Green,

Sample Number: 002B
COC Description: Roof Flashing - Roof C

LAB SAMPLE ID 86810

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	Not Analyzed				

Color:
Other Color
Homogenity:
Treatment:
Texture:

Sample Number: 002C
COC Description: Roof Flashing - Roof C

LAB SAMPLE ID 86811

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	Not Analyzed				

Color:
Other Color
Homogenity:
Treatment:
Texture:

Sample Number: 003A
COC Description: Roof Shingles - Roof D

LAB SAMPLE ID 86812

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected	10	Glass	90	Other

Color: Black
Other Color Grey
Homogenity: Heterogeneous
Treatment: Dissolved
Texture: Firm

Sample Number: 003B
COC Description: Roof Shingles - Roof D

LAB SAMPLE ID 86813

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected	10	Glass	90	Other

Color: Black
Other Color Grey
Homogenity: Heterogeneous
Treatment: Dissolved
Texture: Firm

Analysis Method: EPA 600/R-93/116

Comments: (PC) Indicates Point Count Method performed. Method not performed unless stated. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based on the sample matrix. Quantification at <1% by volume is possible with this method. Analyst specific measurements of uncertainty at lower concentrations are available upon request. Analysis indicates all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed.

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NVLAP Lab Code 200885-0

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540 South DuPont Highway-3rd Floor
Dover, DE
19901-

Wednesday, February 04, 2015

Lab Project Number: 14331

			QTY
Recieved	Ashley Mote	2/2/2015	33
Logged	Ashley Mote	2/2/2015	33
Analyzed	Asghar Keyvanfar	2/4/2015	23

Re: DFM - Kirk Short Building - 15 and 21 The Green,

Sample Number: 003C
COC Description: Roof Shingles - Roof D

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected	10	Glass	90	Other

LAB SAMPLE ID 86814

Color:	Black
Other Color	Grey
Homogenity:	Heterogeneous
Treatment:	Dissolved
Texture:	Firm

Sample Number: 004A
COC Description: Roof Tar Paper - Roof D

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected	20	Cellulose	80	Other

LAB SAMPLE ID 86815

Color:	Black
Other Color	
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Sample Number: 004B
COC Description: Roof Tar Paper - Roof D

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected	20	Cellulose	80	Other

LAB SAMPLE ID 86816

Color:	Black
Other Color	
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Sample Number: 004C
COC Description: Roof Tar Paper - Roof D

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected	20	Cellulose	80	Other

LAB SAMPLE ID 86817

Color:	Black
Other Color	
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Analysis Method: EPA 600/R-93/116

Comments: (PC) Indicates Point Count Method performed. Method not performed unless stated. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based on the sample matrix. Quantification at <1% by volume is possible with this method. Analyst specific measurements of uncertainty at lower concentrations are available upon request. Analysis indicates all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed.

Asghar Keyvanfar
Analyst

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NVLAP Lab Code 200885-0

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LF-407:

CERTIFICATE OF ANALYSIS

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To: **Doyle Tiller**
Division Of Facilities Manageme
540 South DuPont Highway-3rd Floor
Dover, DE
19901-

Re: DFM - Kirk Short Building - 15 and 21 The Green,

Wednesday, February 04, 2015

Lab Project Number: 14331

			QTY
Recieved	Ashley Mote	2/2/2015	33
Logged	Ashley Mote	2/2/2015	33
Analyzed	Asghar Keyvanfar	2/4/2015	23

Sample Number: 005A
COC Description: Roof Flashing - Roof D

LAB SAMPLE ID 86818

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
3	Chrysotile			97	Other

Color: Black
Other Color
Homogenity: Homogeneous
Treatment: Dissolved
Texture: Firm

Sample Number: 005B
COC Description: Roof Flashing - Roof D

LAB SAMPLE ID 86819

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	Not Analyzed				

Color:
Other Color
Homogenity:
Treatment:
Texture:

Sample Number: 005C
COC Description: Roof Flashing - Roof D

LAB SAMPLE ID 86820

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	Not Analyzed				

Color:
Other Color
Homogenity:
Treatment:
Texture:

Sample Number: 006A
COC Description: Cove Base Brown - A102-1

LAB SAMPLE ID 86821

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected			100	Other

Color: Brown
Other Color
Homogenity: Homogeneous
Treatment: Heated
Texture: Firm

Analysis Method: EPA 600/R-93/116

Comments: (PC) Indicates Point Count Method performed. Method not performed unless stated. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based on the sample matrix. Quantification at <1% by volume is possible with this method. Analyst specific measurements of uncertainty at lower concentrations are available upon request. Analysis indicates all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed.

Asghar Keyvanfar
Analyst

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CERTIFICATE OF ANALYSIS

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To: **Doyle Tiller**
Division Of Facilities Manageme
540 South DuPont Highway-3rd Floor
Dover, DE
19901-

Wednesday, February 04, 2015

Lab Project Number: 14331

			QTY
Recieved	Ashley Mote	2/2/2015	33
Logged	Ashley Mote	2/2/2015	33
Analyzed	Asghar Keyvanfar	2/4/2015	23

Re: DFM - Kirk Short Building - 15 and 21 The Green,

Sample Number: 007A
COC Description: Cove Base Mastic - A102-1

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected			100	Other

LAB SAMPLE ID 86822

Color:	Tan
Other Color	
Homogenity:	Homogeneous
Treatment:	Heated
Texture:	Firm

Sample Number: 008A
COC Description: Pipe Covering Over FB Insulation - EP-100-B

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected	10	Cellulose	90	Other

LAB SAMPLE ID 86823

Color:	Various
Other Color	
Homogenity:	Heterogeneous
Treatment:	Dissolved
Texture:	Firm

Sample Number: 009A
COC Description: Pipe Fittings - EP-100-B

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
5	Chrysotile			95	Other

LAB SAMPLE ID 86824

Color:	White
Other Color	
Homogenity:	Homogeneous
Treatment:	Teased
Texture:	Firm

Sample Number: 009B
COC Description: Pipe Fittings - EP-100-B

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	Not Analyzed				

LAB SAMPLE ID 86825

Color:	
Other Color	
Homogenity:	
Treatment:	
Texture:	

Analysis Method: EPA 600/R-93/116

Comments: (PC) Indicates Point Count Method performed. Method not performed unless stated. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based on the sample matrix. Quantification at <1% by volume is possible with this method. Analyst specific measurements of uncertainty at lower concentrations are available upon request. Analysis indicates all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed.

Asghar Keyvanfar
Analyst

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LF-407:

CERTIFICATE OF ANALYSIS

14434

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Division Of Facilities Manageme
540 South DuPont Highway-3rd Floor
Dover, DE
19901-

Wednesday, February 04, 2015

Lab Project Number: 14331

			QTY
Recieved	Ashley Mote	2/2/2015	33
Logged	Ashley Mote	2/2/2015	33
Analyzed	Asghar Keyvanfar	2/4/2015	23

Re: DFM - Kirk Short Building - 15 and 21 The Green,

Sample Number: 009C
COC Description: Pipe Fittings - EP-100-B

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	Not Analyzed				

LAB SAMPLE ID 86826

Color:	
Other Color	
Homogenity:	
Treatment:	
Texture:	

Sample Number: 010A
COC Description: Exterior Window Caulk - A202-1

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected			100	Other

LAB SAMPLE ID 86827

Color:	White
Other Color	Tan
Homogenity:	Homogeneous
Treatment:	Heated
Texture:	Firm

Sample Number: 010B
COC Description: Exterior Window Caulk - A202-1

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected			100	Other

LAB SAMPLE ID 86828

Color:	White
Other Color	Tan
Homogenity:	Homogeneous
Treatment:	Heated
Texture:	Firm

Sample Number: 010C
COC Description: Exterior Window Caulk - A202-1

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected			100	Other

LAB SAMPLE ID 86829

Color:	White
Other Color	Tan
Homogenity:	Homogeneous
Treatment:	Heated
Texture:	Firm

Analysis Method: EPA 600/R-93/116

Comments: (PC) Indicates Point Count Method performed. Method not performed unless stated. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based on the sample matrix. Quantification at <1% by volume is possible with this method. Analyst specific measurements of uncertainty at lower concentrations are available upon request. Analysis indicates all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed.

Asghar Keyvanfar
Analyst

NVLAP®
NVLAP Lab Code 200885-0

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HARVARD
Environmental, Inc.

760 Pulaski Highway Bear, Delaware 19701
Phone: 302-326-2333 Fax: 302-326-2335

LF-407:

CERTIFICATE OF ANALYSIS

14434

To: **Doyle Tiller**
Division Of Facilities Manageme
540 South DuPont Highway-3rd Floor
Dover, DE
19901-

Wednesday, February 04, 2015

Lab Project Number: 14331

			QTY
Recieved	Ashley Mote	2/2/2015	33
Logged	Ashley Mote	2/2/2015	33
Analyzed	Asghar Keyvanfar	2/4/2015	23

Re: DFM - Kirk Short Building - 15 and 21 The Green,

Sample Number: 011A
COC Description: Exterior Window Glazing - A202-1

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected			100	Other

LAB SAMPLE ID 86830

Color:	White
Other Color	
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Sample Number: 011B
COC Description: Exterior Window Glazing - A202-1

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected			100	Other

LAB SAMPLE ID 86831

Color:	White
Other Color	
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Sample Number: 011C
COC Description: Exterior Window Glazing - A202-1

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	None Detected			100	Other

LAB SAMPLE ID 86832

Color:	White
Other Color	
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Sample Number: 012A
COC Description: Interior Window Caulking - A202-1

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
3	Chrysotile			95	Other
2	Anthophyllite				

LAB SAMPLE ID 86833

Color:	Tan
Other Color	White
Homogenity:	Homogeneous
Treatment:	Dissolved
Texture:	Firm

Analysis Method: EPA 600/R-93/116

Comments: (PC) Indicates Point Count Method performed. Method not performed unless stated. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based on the sample matrix. Quantification at <1% by volume is possible with this method. Analyst specific measurements of uncertainty at lower concentrations are available upon request. Analysis indicates all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed.

Asghar Keyvanfar
Analyst

NVLAP®
NVLAP Lab Code 200885-0

Approved For Releas

HARVARD
Environmental, Inc.

760 Pulaski Highway Bear, Delaware 19701
Phone: 302-326-2333 Fax: 302-326-2335

LF-407:

CERTIFICATE OF ANALYSIS

14434

To: **Doyle Tiller**
Division Of Facilities Manageme
540 South DuPont Highway-3rd Floor
Dover, DE
19901-

Wednesday, February 04, 2015

Lab Project Number: 14331

			QTY
Recieved	Ashley Mote	2/2/2015	33
Logged	Ashley Mote	2/2/2015	33
Analyzed	Asghar Keyvanfar	2/4/2015	23

Re: DFM - Kirk Short Building - 15 and 21 The Green,

Sample Number: 012B
COC Description: Interior Window Caulking - A202-1

LAB SAMPLE ID 86834

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	Not Analyzed				

Color:
Other Color
Homogenity:
Treatment:
Texture:

Sample Number: 012C
COC Description: Interior Window Caulking - A202-1

LAB SAMPLE ID 86835

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	Not Analyzed				

Color:
Other Color
Homogenity:
Treatment:
Texture:

Sample Number: 013A
COC Description: Exterior Window Glazing - A203-1

LAB SAMPLE ID 86836

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
2	Chrysotile			98	Other

Color: White
Other Color
Homogenity: Homogeneous
Treatment: Dissolved
Texture: Firm

Sample Number: 013B
COC Description: Exterior Window Glazing - A203-1

LAB SAMPLE ID 86837

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	Not Analyzed				

Color:
Other Color
Homogenity:
Treatment:
Texture:

Analysis Method: EPA 600/R-93/116

Comments: (PC) Indicates Point Count Method performed. Method not performed unless stated. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based on the sample matrix. Quantification at <1% by volume is possible with this method. Analyst specific measurements of uncertainty at lower concentrations are available upon request. Analysis indicates all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed.

Asghar Keyvanfar
Analyst

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NVLAP Lab Code 200885-0

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HARVARD
Environmental, Inc.

760 Pulaski Highway Bear, Delaware 19701
Phone: 302-326-2333 Fax: 302-326-2335

LF-407:

CERTIFICATE OF ANALYSIS

14434

To: **Doyle Tiller**
Division Of Facilities Manageme
540 South DuPont Highway-3rd Floor
Dover, DE
19901-

Wednesday, February 04, 2015

Lab Project Number: 14331

			QTY
Recieved	Ashley Mote	2/2/2015	33
Logged	Ashley Mote	2/2/2015	33
Analyzed	Asghar Keyvanfar	2/4/2015	23

Re: DFM - Kirk Short Building - 15 and 21 The Green,

Sample Number: 013C
COC Description: Exterior Window Glasing - A203-1

LAB SAMPLE ID
86838

%	Asbestos Type	%	Other Fibrous Type	%	Non Fibrous Type
	Not Analyzed				

Color:
Other Color:
Homogenity:
Treatment:
Texture:

Analysis Method: EPA 600/R-93/116

Comments: (PC) Indicates Point Count Method performed. Method not performed unless stated. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based on the sample matrix. Quantification at <1% by volume is possible with this method. Analyst specific measurements of uncertainty at lower concentrations are available upon request. Analysis indicates all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed.

Asghar Keyvanfar
Analyst

NVLAP®
NVLAP Lab Code 200885-0

Approved For Releas

HARVARD Environmental, Inc.

PLM CHAIN OF CUSTODY

Issued: 5/21/09 | Page 1 of 3
File ID: FS-001 | Revision No. 3

Analytical Laboratory Name: Harvard Environmental Inc.

REPORT TO: State of Delaware 540 S. Dupont Highway Dover DE 19901	**INVOICE TO:**	**PROJECT NO:** 14434 **PROJECT NAME:** DFM - Kirk Short Buildings Renovations Project
ATTN:	**ATTN:** Accounts Payable	
PHONE: 302-326-2333 **FAX:** 302-326-2335		
Collected By: Ron Knight Date: 1/30/15 Time: 1200 Relinquished By: for RM Date: 2/2/15 Time: 1000 Received By: Date: 2/2 Time: 1027 Received In Lab: Date: 2-4-15 Time:	**REMARKS**	**Turn Around Time (Circle One)** Same Day 24 Hours 48 Hours 72 Hours 4 Days 1 Week 2 Weeks 3 Hr Rush 6 Hr Rush **OTHER**

SAMPLE ID	SYS CODE	14331 Lab ID# (Lab Use Only)	DESCRIPTIONS	LOCATION	No Layered Analysis	ABC Positive Stop	If Negative Analyze TEM	Results (Lab Use Only)	OTHER INSTRUCTIONS 1. 2. 3.
001A	Rm	8680	Roof Material	Roof C	✓	✓		<1% CHRY	
001B	"	07	" "	"	✓	✓		<1% CHRY	
001C	"	08	" "	"	✓			NAD	
002A	RF	09	Roof Flashing	Roof C	✓	✓		10% CHRY	
002B	"	10	" "	"	✓	✓		—	
002C	"	11	" "	"	✓			—	
003A	RS	12	Roof Shingles	Roof D	✓	✓		NAD	
003B	"	13	"	"	✓	✓		NAD	
003C	"	14	" "	"	✓			NAD	
004A	TP	15	Roof Tar paper	"	✓	✓		NAD	
004B	"	16	" " "	"	✓	✓		NAD	
004C	"	17	" " "	"	✓			NAD	
005A	RF	18	Roof Flashing	"	✓	✓		3% CHRY	
005B	"	19	" "	"	✓	✓		—	
005C	"	20	" "	"	✓			—	

FEB 2 AM 10:27

Release Results Via: Fax ☐ Email ☒ Verbal ☐ **To:** Mike Sanders **Date:** 2/3/15 **Time:** 1200 **Signature:**

PF-14434

HARVARD Environmental, Inc.

PLM CHAIN OF CUSTODY

Issued: 5/21/09	Page 2 of 3
File ID: FS-001	Revision No. 3

SAMPLE ID	SYS CODE	Lab ID#	DESCRIPTIONS	LOCATION	No Layered Analysis	ADC Positive Stop	If Negative PLM Analyze TEM	OTHER INSTRUCTIONS 1. 2. 3.
006A	CB	86821	Cove base (Brown)	A102-1	✓			NAD
007A	CBm	22	cove base mastic Assoc. w/ 006	"	✓			NAD
008A	PI	23	pipe covering over ins. F/G	EP-100-B	✓			NAD
009A	PF	24	pipe fittings	EP-100-B	✓	✓		5% chrys
009B	PF	25	pipe fittings	" " "	✓	✓		—
009C	PF	26	pipe fittings	" " "	✓			—
010A	CLK	27	Exterior Window Caulk	A202-1	✓	✓		NAD
010B	CLK	28	" " "	"	✓	✓		NAD
010C	CLK	29	" " "	"	✓			NAD
011A	GLZ	30	Exterior Window Glazing	A202-1	✓	✓		NAD
011B	GLZ	31	" " "	"	✓	✓		NAD
011C	GLZ	32	" " "	"	✓			NAD
012A	CLK	33	Interior Window Caulking	A202-1	✓	✓		3% chrys 2% Anthro
012B	CLK	34	Interior Window Caulking	"	✓	✓		—
012C	CLK	35	" " "	"	✓			—

HARVARD Environmental, Inc.

PLM CHAIN OF CUSTODY

Issued: 5/21/09	Page 3 of 3
File ID: FS-001	Revision No. 3

SAMPLE ID	SYS CODE	Lab ID#	DESCRIPTIONS	LOCATION	No Layered Analysis	ABC Positive Stop	If Negative PLM Analyze TEM	OTHER INSTRUCTIONS 1. 2. 3.
013A	GLZ	86836	Exterior Window Glazing	A203-1	✓	✓		2% Chrso
013B	GLZ	37	" " "	" - "	✓	✓		—
013C	GLZ	38	" " "	" - "	✓			—

HARVARD
Environmental, Inc.

760 Pulaski Highway
Bear, DE 19701
1-302-326-2333

Kirk Short Building- Interior
Lead Based Paint Inspection
Dover, DE 19901

FINAL REPORT –11/10/10
Harvard Project # 8998

Prepared For: **Larry Schrock**
State of Delaware - Division of Facilities Management
540 S. Dupont Highway, Suite 1
Dover, DE 19901

Prepared By: **Harvard Environmental, Inc.**
760 Pulaski Highway
Bear Delaware 19701
302-326-2333

Written By: _____
Michael Sanders
LRA-09-0085R
Lead Risk Assessor
Harvard Environmental, Inc.

Released By: _____
Charles Styles
Operations Manager
Harvard Environmental, Inc.

Table Of Contents

Introductions & Executive Summary

Harvard Environmental, Inc. herein presents data associated with a lead-based paint inspection performed within the interior of the Kirk Short Building located 15-21 The Green, Dover, DE. This effort was performed at the request of the State of Delaware, Division of Facilities Management.

This project was performed in order to identify lead-based paint that may exist on interior building components. Harvard Environmental Inc, assessed the building materials for lead-painted surfaces utilizing X-Ray Fluorescence, (XRF) Technology. This technology is typically utilized for field assessing building components for the presence Lead-Based Paint.

Floor plans of the facility were available. Harvard Environmental, Inc. utilized the layout and design drawings for purposes of identifying "grid" locations and A, B, C, & D Walls. These identifiers are specific locations of the assessment and are the basis for orientation of the data.

Refer to Appendix C for the grid identifiers.

The last day of visitation to the site was performed on 8/9/10, 8/10/10 and 8/11/10. Conditions described within this document are accurate as of the date of last visitation. Mr. Jeff Hogate was the responsible Harvard Environmental, Inc. employee which led the field efforts associated with the work.

Representative XRF testing of homogeneous building component surfaces was performed throughout the facility. The testing was conducted using HUD, chapter 7 standards as a guidance for performing lead paint inspections.

<u>Based on the field inspections and XRF lead paint analysis performed by Harvard Environmental, Inc., lead-based paint does exist on the interior building components.</u>

Provided in Appendix B is summary listing of components which tested positive for lead-based paint and Appendix C provides those that tested negative during this inspection. Each includes a detailed XRF testing summary for specific identification.

XRF Definitions Of Lead Content

EPA defines Lead-Based Paint as 1.0 mg/cm^2 or greater of lead content. All XRF measurements are calculated in mg/cm^2.

The RMD LPA-1 Analyzer used during this inspection has an inconclusive range of 0.7 to 1.3 mg/cm^2. A 60 second inconclusive measurement would log the test at 1.0 mg/cm^2. Those inclusive readings must be considered actionable levels and Lead-Based Painted surfaces. Laboratory analysis of paint chips can be used to confirm a positive content above 0.5% by weight. Room Equivalent" identifies components or structures presumed to have the same paint history as similar components or structures located within the facility. The characterizations of those similarities can include finish, appearance, purpose for application and color.

XRF Testing Results for Lead Based Paint										
Test #	Room #	Room Name	Wall	Structure	Component Location	Component	Paint Condition	Substrate	Paint Color	Lead Content
1	999	Calibration								0.7
2	999	Calibration								0.7
3	999	Calibration								0.7
4	001	Reception	A	Window	Lft	Sill	I	Wood	Pink	1.9
5	001	Reception	A	Window	Rgt	Well	P	Wood	White	0.9
6	001	Reception	D	Door	Rgt	Stop	I	Wood	Pink	0.3
7	001	Reception	D	Door	Rgt	Casing	I	Wood	Pink	0.2
8	001	Reception	D	Wall	Ctr	Wall	I	Wood	Tan	<0.4
9	001	Reception	A	Window	Lft	Frame	I	Wood	Pink	<0.1
10	002	Conference Room	A	Window	Ctr	Sill	I	Wood	White	0.9
11	002	Conference Room	A	Window	Lft	Casing	I	Wood	White	<0.1
12	002	Conference Room	D	Window	Ctr	Sill	I	Wood	White	<0.3
13	002	Conference Room	D	Radiator	Rgt	Radiator	I	Metal	Tan	1.0
14	002	Conference Room	D	Window	Ctr	Sash	I	Wood	White	<0.1
15	002	Conference Room	B	Door	Lft	Stop	I	Wood	Pink	2.2
16	002	Conference Room	B	Door	Lft	Header	I	Wood	Tan	<0.1
17	003	Hall	B	Baseboard	Ctr	Baseboard	I	Wood	Pink	0.3
18	003	Hall	B	Door	Lft	Casing	I	Wood	Pink	9.1
19	003	Hall	B	Door	Rgt	Frame	I	Wood	Pink	9.8
20	003	Hall	B	Door	Ctr	Header	I	Wood	Pink	>9.9
21	003	Hall	C	Door	Rgt	Casing	I	Wood	Pink	>9.9
22	004	Office	D	Door	Lft	Stop	I	Wood	Blue	2.1
23	004	Office	B	Window	Lft	Sill	I	Wood	Blue	>9.9
24	004	Office	B	Window	Lft	Sash	I	Wood	Blue	>9.9
25	005	Office	B	Door	Lft	Frame	I	Wood	Tan	0.1
26	005	Office	D	Window	Ctr	Sill	I	Wood	Tan	<0.1
27	005	Office	D	Window	Ctr	Sash	I	Wood	Tan	5.5
28	005	Office	D	Window	Ctr	Casing	I	Wood	Tan	<0.2
29	005	Office	B	Door	Lft	Door	I	Wood	Tan	<0.3
30	006	Office	D	Door	Lft	Stop	I	Wood	Pink	>9.9
31	006	Office	B	Window	Rgt	Sill	I	Wood	Tan	<0.1
32	006	Office	B	Window	Rgt	Sash	I	Wood	Tan	8.9
33	007	Office	B	Door	Rgt	Stop	I	Wood	Pink	8.9
34	007	Office	D	Window	Lft	Sill	I	Wood	Tan	<0.2
35	007	Office	D	Window	Lft	Sash	I	Wood	Tan	>9.9
36	007	Office	D	Window	Lft	Casing	I	Wood	Tan	<0.2
37	008	Storage	D	Window	Rgt	Sill	P	Wood	Green	4.9
38	008	Storage	D	Window	Rgt	Sash	P	Wood	Green	>9.9
39	010	Ladies Room	A	Door	Ctr	Stop	I	Wood	Pink	9.6
40	010	Ladies Room	C	Window	Ctr	Sill	I	Wood	White	2.6
41	010	Ladies Room	C	Window	Ctr	Sash	I	Wood	White	>9.9
42	011	Mens Room	A	Door	Ctr	Frame	I	Wood	Tan	8.4
43	011	Mens Room	C	Window	Ctr	Sill	I	Wood	Tan	1.9
44	011	Mens Room	C	Window	Ctr	Sash	I	Wood	Tan	>9.9
45	012	Office	C	Window	Ctr	Sill	I	Wood	Tan	<0.1
46	012	Office	C	Window	Ctr	Sash	I	Wood	Tan	>9.9
47	012	Office	D	Door	Lft	Stop	I	Wood	Pink	>9.9
48	013	Hall	B	Door	Lft	Frame	I	Wood	Tan	3.2
49	013	Hall	B	Baseboard	Lft	Baseboard	I	Wood	Tan	3.6
50	013	Hall	C	Door	Ctr	Header	I	Wood	Tan	5.2
51	013	Hall	C	Door	Ctr	Jamb	I	Wood	Tan	1.0
52	013	Hall	B	Wall	Ctr	Wall	I	Plaster	Tan	<0.1
53	014	Office	A	Window	Lft	Sill	I	Wood	Ta	0.4
54	014	Office	A	Window	Lft	Sash	I	Wood	White	1.7
55	014	Office	A	Window	Lft	Jamb	I	Wood	White	2.6
56	014	Office	B	Door	Lft	Stop	I	Wood	Tan	2.8
57	015	Office	B	Door	Ctr	Stop	I	Wood	Tan	3.5
58	015	Office	B	Door	Lft	Header	I	Wood	Tan	4.9

XRF Testing Results for Lead Based Paint										
Test #	Room #	Room Name	Wall	Structure	Component Location	Component	Paint Condition	Substrate	Paint Color	
59	015	Office	D	Window	Ctr	Sill	I	Wood	Tan	<0.2
60	015	Office	D	Window	Ctr	Casing	I	Wood	Tan	0.0
61	016	AC Room	D	Door	Lft	Stop	I	Wood	Tan	5.3
62	016	AC Room	D	Door	Lft	Door	I	Wood	Tan	<0.1
63	016	AC Room	D	Door	Lft	Header	I	Wood	Tan	7.5
64	016	AC Room	B	Window	Ctr	Sill	I	Wood	Tan	7.9
65	016	AC Room	B	Window	Ctr	Sash	I	Wood	Tan	>9.9
66	017	Bath	B	Window	Ctr	Sill	I	Wood	Tan	0.4
67	017	Bath	B	Window	Ctr	Casing	I	Wood	Tan	4.2
68	017	Bath	B	Window	Ctr	Sash	I	Wood	Tan	8.9
69	017	Bath	A	Door	Ctr	Stop	I	Wood	Tan	0.2
70	017	Bath	A	Door	Ctr	Header	I	Wood	Tan	<0.2
71	017	Bath	A	Baseboard	Rgt		I	Wood	Tan	>9.9
72	018	Bath	D	Door	Ctr	Header	I	Wood	Tan	7.2
73	018	Bath	D	Door	Ctr	Stop	I	Wood	Tan	4.3
74	019	Office	B	Door	Ctr	Stop	I	Wood	Tan	1.0
75	019	Office	B	Door	Ctr	Casing	I	Wood	Tan	1.7
76	019	Office	D	Window	Ctr	Sill	I	Wood	Tan	>9.9
77	019	Office	D	Window	Ctr	Sash	I	Wood	Tan	9.7
78	020	Hall	A	Baseboard	Rgt		I	Wood	Tan	1.0
79	021	Office	B	Door	Lft	Stop	I	Wood	Tan	0.0
80	021	Office	B	Door	Lft	Casing	I	Wood	Tan	<0.2
81	021	Office	C	Window	Lft	Sill	I	Wood	Tan	>9.9
82	021	Office	C	Window	Lft	Sash	I	Wood	Tan	>9.9
83	021	Office	D	Baseboard	Lft		I	Wood	Tan	>9.9
84	022	Office	A	Door	Ctr	Stop	I	Wood	Tan	<0.2
85	022	Office	A	Door	Ctr	Casing	I	Wood	Tan	<0.2
86	022	Office	C	Window	Lft	Sill	I	Wood	Tan	4.4
87	022	Office	C	Window	Lft	Sash	I	Wood	Tan	>9.9
88	023	Office	B	Window	Rgt	Sill	I	Wood	Tan	1.6
89	023	Office	B	Window	Rgt	Sash	I	Wood	Tan	6.4
90	023	Office	D	Door	Lft	Stop	I	Wood	Tan	<0.0
91	023	Office	D	Door	Lft	Header	I	Wood	Tan	0.0
92	024	Storage	C	Window	Rgt	Sill	I	Wood	Tan	>9.9
93	024	Storage	C	Window	Rgt	Sash	I	Wood	Tan	>9.9
94	024	Storage	A	Door	Lft	Stop	I	Wood	Tan	<0.2
95	024	Storage	A	Door	Lft	Casing	I	Wood	Tan	<0.2
96	999	Calibration								1.0
97	999	Calibration								0.9
98	999	Calibration								1.0
99	999	Calibration								0.8
100	999	Calibration								0.8
101	999	Calibration								0.7
102	025	Office	B	Door	Lft	Stop	I	Wood	Tan	5.0
103	025	Office	B	Door	Lft	Jamb	I	Wood	Tan	5.1
104	025	Office	A-C	Window	Rgt	Sill	I	Wood	Tan	7.7
105	025	Office	A-C	Window	Rgt	Sash	I	Wood	Tan	>9.9
106	025	Office		Baseboard			I	Wood	Tan	<0.3
107	026	Conference Room	B-D	Window	Lft	Sill	I	Wood	Tan	1.9
108	026	Conference Room	B-D	Window	Lft	Sash	I	Wood	Tan	9.8
109	026	Conference Room	B-D	Window	Rgt	Well	I	Wood	Tan	1.7
110	027	Foyer	D	Window	Ctr	Sash	F	Wood	White	<0.2
111	027	Foyer	D	Window	Ctr	Casing	F	Wood	White	<0.1
112	027	Foyer	C	Door	Ctr	Stop	F	Wood	White	0.0
113	027	Foyer	C	Door	Ctr	Door	F	Wood	White	<0.2
114	028	Foyer	C	Door	Ctr	Stop	P	Metal	Green	0.4
115	028	Foyer	C	Wall	Lft	Wall	P	Concrete	Green	0.1

XRF Testing Results for Lead Based Paint										
Test #	Room #	Room Name	Wall	Structure	Component Location	Component	Paint Condition	Substrate	Paint Color	Lead Content
116	029	Storage	D	Door	Ctr	Stop	F	Wood	Green	0.2
117	029	Storage	C	Window	Ctr	Frame	I	Metal	Brown	<0.2
118	029	Storage	C	Wall	Lft	Wall	P	Concrete	Green	0.0
119	030	Storage	B	Door	Lft	Stop	F	Wood	Green	<0.2
120	030	Storage	B	Door	Lft	Jamb	F	Wood	Green	<0.4
121	030	Storage	D	Window	Lft	Frame	I	Metal	Brown	<0.2
122	030	Storage	C	Wall	Lft	Wall	F	Block	Yellow	0.0
123	031	Arch Room	C	Door	Rg	tStop	F	Wood	Green	0.4
124	031	Arch Room	C	Door	Rgt	Frame	F	Wood	Green	0.4
125	032	Storage	D	Door	Ctr	Frame	F	Wood	Green	<0.1
126	032	Storage	B	Wall	Ctr	Wall	P	Concrete	Green	0.2
127	032	Storage	D	Door	Ctr	Frame	F	Wood	Green	<0.0
128	032	Storage	D	Door	Ctr	Frame	F	Wood	Green	<0.2
129	035	Mechanical Room	D	Door	Lft	Frame	P	Wood	Gray	>9.9
130	035	Mechanical Room	D	Door	Lft	Casing	P	Wood	Gray	3.9
131	035	Mechanical Room	D	Door	Lft	Door	P	Wood	Gray	4.6
132	035	Mechanical Room	A	Wall	Ctr	Wall	P	Concrete	Gray	<0.2
133	036	Vault	B	Door	Lft	Frame	P	Metal	Green	3.5
134	036	Vault	B	Door	Lft	Door	F	Metal	Brown	4.2
135	038	Hall	C`	Door	CTr	Frame	F	Wood	Green	3.6
136	038	Hall	C	Door	Ctr	Header	F	Wood	Green	5.0
137	039	Stairs	D	Stairs	Lft	Tread	I	Wood	Gray	<0.1
138	039	Stairs	D	Stairs	Lft	Riser	I	Wood	Gray	1.6
139	040	Office/Copy Area	C	Window	Rgt	Sill	I	Wood	Mauve	>9.9
140	040	Office/Copy Area	C	Window	Rgt	Sash	P	Wood	Mauve	>9.9
141	040	Office/Copy Area		Baseboard			I	Wood	Mauve	>9.9
142	040	Office/Copy Area	B	Door	Lft	Casing	I	Wood	Mauve	>9.9
143	040	Office/Copy Area	B	Door	Lft	Frame	I	Wood	Mauve	>9.9
144	041	Foyer	A	Door	Ctr	Door	I	Wood	Mauve	<0.4
145	041	Foyer	C	Foyer Door	Ctr	Stop	I	Wood	Mauve	3.6
146	041	Foyer	C	Foyer Door	Ctr	Casing	I	Wood	Mauve	>9.9
147	042	Office	A	Window	Lft	Sill	I	Wood	Mauve	7.2
148	042	Office	A-B	Window	Lft	Sash	I	Wood	Mauve	>9.9
149	042	Office	D	Wall	Ctr	Wall	I	Concrete	Cream	3.8
150	042	Office	D	Baseboard	Ctr		I	Wood	Mauve	>9.9
151	042	Office	C	Door	Rgt	Frame	I	Wood	Mauve	8.9
152	042	Office	C	Door	Rgt	Door	I	Wood	Mauve	>9.9
153	043	Hall		Baseboard			I	Wood	Mauve	>9.9
154	044	Hall	A	Door	Ctr	Casing	I	Wood	Mauve	>9.9
155	044	Hall	D	Window	Ctr	Sill	I	Wood	Mauve	3.3
156	044	Hall	D	Window	Ctr	Sash	I	Wood	Mauve	2.6
157	044	Hall	C	Door	Ctr	Door	I	Wood	Mauve	3.4
158	044	Hall	C	Door	Ctr	Stop	I	Wood	Yello	2.5
159	044	Hall	C	Door	Ctr	Casing	I	Wood	Yellow	6.1
160	045	Office	D	Window	Rgt	Sill	I	Wood	Mauve	3.9
161	047	Bath	B	Window	Ctr	Sill	P	Wood	Yellow	3.1
162	047	Bath	B	Window	Ctr	Sash	P	Wood	Yellow	9.0
163	046	Foyer	C	Door	Ctr	Door	I	Wood	Yellow	6.1
164	046	Foyer	C	Door	Ctr	Stop	I	Wood	Yellow	6.9
165	046	Foyer		Floor	Ctr	Floor	I	Wood	Gray	5.7
166	048	Bath	D	Door	Rgt	Stop	P	Wood	Yellow	8.0
167	048	Bath	D	Window	Rgt	Sill	P	Wood	Yellow	>9.9
168	049	Office	B	Door	Rgt	Casing	I	Wood	Cream	>9.9
169	049	Office	B	Door	Rgt	Haeder	I	Wood	Cream	>9.9
170	049	Office	C	Window	Rgt	Sill	I	Wood	Cream	>9.9
171	049	Office	C	Window	Rgt	Sash	I	Wood	Cream	>9.9
172	049	Office	C	Baseboard			I	Wood	Cream	>9.9
173	049	Office		Walls		Walls	I	Wood	White	<2.2
174	050	Office	A	Window	Lft	Sill	I	Wood	Cream	>9.9

XRF Testing Results for Lead Based Paint										
Test #	Room #	Room Name	Wall	Structure	Component Location	Component	Paint Condition	Substrate	Paint Color	Lead Content
175	051	Hall		Baseboards			I	Wood	Cream	>9.9
176	051	Hall	C	Door	Rgt	Header	I	Wood	Cream	>9.9
177	052	Bath	D	Window	Rgt	Sill	I	Wood	Cream	>9.9
178	052	Bath	D	Window	Rgt	Sash	I	Wood	Cream	>9.9
179	052	Bath	B	Wall		Wall	I	Cement	Cream	>9.9
180	052	Bath	A	Door	Ctr	Stop	I	Wood	Cream	>9.9
181	053	Bath	D	Window	Lft	Sill	P	Wood	Cream	0.4
182	053	Bath	D	Window	Lft	Sash	P	Wood	Cream	4.7
183	053	Bath	D	Wall	Ctr	Wall	I	Drywall	Cream	<0.1
184	054	File Room	A	Door	Lft	Header	F	Wood	Cream	>9.9
185	054	File Room	B	Window	Ctr	Sill	P	Wood	Cream	3.9
186	055	Kitchen/File Room	A	Door	Ctr	Frame	I	Wood	Cream	>9.9
187	999	Calibration								1.1
188	999	Calibration								1.0
189	999	Calibration								0.9
190	999	Calibration								0.9
191	999	Calibration								0.8
192	999	Calibration								0.9
193	057	Hall	A	Window	Ctr	Sill	I	Wood	Cream	0.4
194	057	Hall	A	Window	Ctr	Sash	I	Wood	Cream	5.8
195	057	Hall	D	Wall	Ctr	Wall	I	Wood	Cream	0.0
196	058	File Room	D	Door	Rgt	Stop	I	Wood	Cream	8.7
197	059	Office	A	Window	Lft	Sill	P	Wood	Cream	2.2
198	060	Office	D	Window	Rgt	Sill	P	Wood	Cream	0.0
199	060	Office	D	Window	Rgt	Sash	P	Wood	Cream	>9.9
200	061	Office	D	Door	Ctr	Stop	I	Wood	White	9.6
201	061	Office	D	Window	Rgt	Sill	F	Wood	White	0.3
202	061	Office	D	Window	Rgt	Sash	F	Wood	White	>9.9
203	062	Foyer	B	Door	Ctr	Stop	I	Wood	Cream	9.2
204	063	Hall	A	Door	Lft	Casing	P	Metal	Cream	7.6
205	063	Hall	D	Wall	Ctr	Wall	P	Cement	Cream	<0.2
206	063	Hall	A	Wall	Ctr	Wall	P	Cement	Green	0.0
207	064	Exhibit Room	A	Door	Rgt	Stop	P	Wood	Cream	>9.9
208	064	Exhibit Room	D	Window	Rgt	Sash	P	Wood	Cream	>9.9
209	064	Exhibit Room	D	Wall	Ctr	Wall	P	Wood	Cream	0.2
210	065	Storage	D	Door	Ctr	Casing	P	Wood	Cream	0.3
211	065	Storage	B	Window	Ctr	Frame	P	Wood	Cream	1.6
212	066	Storage	C	Door		Stop	P	Wood	Cream	3.1
213	067	Steps	C	Steps	Top	Tread	P	Wood	Brown	0.0
214	067	Steps	B	Window	Ctr	Sill	P	Wood	Cream	9.9
215	067	Steps	D	Cabinet	Ctr	Frame	P	Wood	Cream	0.5
216	999	Calibration								1.1
217	999	Calibration								1.0
218	999	Calibration								0.8

Lead Based Painted Room Equivalent Component									
Room #	Room Name	Wall	Structure	Component Location	Component	Paint Condition	Substrate	Paint Color	Notes
001	Reception	A	Window(1)	Lft	Sill	I	Wood	Pink	
002	Conference Room	B	Door(3)	Lft	Stop,Casing,Jamb,Frame	I	Wood	Pink	
003	Hall	B	Door(10)	Lft	Stop,Header,Casing,Frame	I	Wood	Pink	
004	Office	D	Door(3)	Lft	Stop,Header,Casing,Frame	I	Wood	Blue	
004	Office	B	Window(2)	Lft	Sash,Jamb,Well	I	Wood	Blue	
004	Office	B	Window(1)	Lft	Sill,Frame,Casing	I	Wood	Blue	
005	Office	C	Window(1)	Ctr	Sash,Jamb,Well	I	Wood	Tan	
006	Office	D	Door(2)	Lft	Stop,Casing,Frame	I	Wood	Pink	
006	Office	B	Window(2)	Rgt	Sash,Jamb,Well	I	Wood	Tan	
006	Office	B	Window(2)	Rgt	Sill	I	Wood	Tan	
007	Office	B	Door(3)	Rgt	Stop,Casing,Frame	I	Wood	Pink	
007	Office	D	Window(2)	Lft	Sash,Jamb,Well	I	Wood	Tan	
008	Storage	D	Window(2)	Rgt	Sill,Frame,Casing	I	Wood	Green	
008	Storage	D	Window(2)	Rgt	Sash,Jamb,Well	I	Wood	Green	
010	Ladies Room	A	Door	Ctr	Stop,Casing,Frame	I	Wood	Pink	
010	Ladies Room	C	Window	Ctr	Sill,Frame,Casing	I	Wood	White	
010	Ladies Room	C	Window	Ctr	Sash,Jamb,Well	I	Wood	White	
011	Mens Room	A	Door	Ctr	Stop,Casing,Jamb	I	Wood	Tan	
011	Mens Room	C	Window	Ctr	Sill,Frame,Casing	I	Wood	White	
011	Mens Room	C	Window	Ctr	Sash,Jamb,Well	I	Wood	White	
012	Office	C	Winodw(4)	Lft	Sash,Jamb,Well	I	Wood	Pink	
012	Office	D	Door	Lft	Stop,Casing,Frame	I	Wood	Pink	
013	Hall	B	Door(2)	Lft	Frame,Header,Stop,Casing	I	Wood	Tan	
013	Hall	A-D	Baseboards		Baseboards	I	Wood	Tan	
013	Hall	C	Door(2)	Ctr	Jamb,Frame,Casing	I	Wood	Tan	
014	Office	A	Window(2)	Lft,Rgt	Sash,Well,Jamb	I	Wood	White	
014	Office	A	Window(2)	Lft,Rgt	Sill,Frame,Casing	I	Wood	Tan	
014	Office	D	Door(2)	Lft	Stop,Jamb	I	Wood	Tan	
014	Office	D	Door(2)	Lft,Rgt	Casing,Frame,Header	I	Wood	Tan	
015	Office	B	Door(2)	Lft,Rgt	Stop,Jmab	I	Wood	Tan	
015	Office	B	Door	Lft,Rgt	Casing,Frane,Header	I	Wood	Tan	
016	Mechanical Room	D	Door	Ctr	Stop,Jamb	I	Wood	Tan	
016	Mechanical Room	D	Door	Ctr	Casing,Frame,Header	I	Wood	Tan	
016	Mechanical Room	B	Window	Ctr	Sill,Casing,Frame	I	Wood	Tan	
016	Mechanical Room	B	Window	Ctr	Sash,Well,Jamb	I	Wood	Tan	
017	Bath	B	Window	Ctr	Sill,Casing,Frame	I	Wood	Tan	
017	Bath	B	Window	Ctr	Sash,Well,Jamb	I	Wood	Tan	
017	Bath	A-D			Baseboards	I	Wood	Tan	
018	Bath	D	Door	Ctr	Header,Casing,Jamb	I	Wood	Tan	
018	Bath	D	Door	Ctr	Stop,Jamb	I	Wood	Tan	
019	Office	A-B	Door(2)	Ctr	Stop,Jamb	I	Wood	Tan	
019	Office	A-B	Door(2)	Ctr	Casing,Header,Frame	I	Wood	Tan	
019	Office	D	Window(2)	Lft,Rgt	Sill,Casing,Frame	I	Wood	Tan	
019	Office	D	Window(2)	Lft,Rgt	Sash,Well,Jamb	I	Wood	Tan	
021	Office	C-D	Window(4)	Lft,Rgt	Sash,Well,Jamb	I	Wood	Tan	
021	Office	C-D	Window(4)	Lft,Rgt	Sill,Casing,Header	I	Wood	Tan	
021	Office				Baseboard	I	Wood	Tan	
022	Office	C	Window(2)	Lft,Rgt	Sill,Casing,Header	I	Wood	Tan	
022	Office	C	Window(2)	Lft,Rgt	Sash,Jamb,Well	I	Wood	Tan	
023	Office	B	Window(2)	Lft,Rgt	Sash,Jamb,Well	I	Wood	Tan	
023	Office	B	Window(2)	Lft,Rgt	Sill,Casing	I	Wood	Tan	
024	Storage	B-C	Window(2)	Lft,Ctr	Sash,Jamb,Well	I	Wood	Tan	
024	Storage	B-C	Window(2)	Lft,Ctr	Sill,Casing,Header	I	Wood	Tan	
025	Office	B	Door(2)	Lft,Rgt	Stop,Jamb	I	Wood	Tan	
025	Office	B	Door(2)	Lft,Rgt	Casing,Header,Door	I	Wood	Tan	
025	Office	A-C	Window(2)	Rgt	Sill,Casing	I	Wood	Tan	
025	Office	A-C	Window(2)	Rgt	Sash,Jamb,Well	I	Wood	Tan	
026	Conference Room	B-D	Window(6)	Lft,Rgt	Sash,Jamb,Well	I	Wood	Tan	

Lead Based Painted Room Equivalent Component									
Room #	Room Name	Wall	Structure	Component Location	Component	Paint Condition	Substrate	Paint Color	Notes
026	Conference Room	B-D	Window(6)	Lft,Rgt	Sill,Casing	I	Wood	Tan	
035	Mechanical Room	D	Door	Lft	Frame,Casing,Door	P	Wood	Gray	
036	Vault	B	Door	Lft	Frame,Casing,Door	P	Metal	Green	
038	Hall	C	Door	Ctr	Frame,Header	P	Wood	Green	
039	Stairs	D	Stairs	Lft	Risers,Treads	I	Wood	Gray	
040	Office/Copy Area	A-C	Window(4)	Lft,Rgt	Sill,Casing,Frame	I	Wood	Mauve	
040	Office/Copy Area	A-C	Window(4)	Lft,Rgt	Sash,Jamb,Well	I	Wood	Mauve	
041	Office/Copy Area	B	Door	Lft	Casing,Frame	I	Wood	Mauve	
041	Office/Copy Area	B	Baseboard		Baseboard	I	Wood	Mauve	
042	Office	A	Window(2)	Lft,Rgt	Sill,Casing,Frame,Header	I	Wood	Mauve	
042	Office	A	Window	Lft,Rgt	Sash,Jamb,Well	I	Wood	Mauve	
042	Office	D	Door	Lft	Frame,Casing	I	Wood	Mauve	
042	Office	D	Door	Rgt	Stop,Jamb	I	Wood	Mauve	
042	Office	D	Door	Rgt	Frame,Header,Casing	I	Wood	Mauve	
042	Office				Baseboards	I	Wood	Mauve	
042	Office	All	Walls		Walls	I	Cement	Cream	
043	Hall				Baseboards	I	Wood	Mauve	
043	Hall		Walls		Walls	I	Cement	Cream	
044	Hall	C	Door	Ctr	Casing,Frame,Header	I	Wood	Mauve	
044	Hall	C	Door	Ctr	Casing,Frame,Header	I	Wood	Mauve	
044	Hall	C	Door	Ctr	Stop,Jamb	I	Wood	Mauve	
044	Hall	C	Door	Ctr	Door	I	Wood	Mauve	
044	Hall	D	Window	Ctr	Sash,Jamb,Well	I	Wood	Mauve	
044	Hall	D	Window	Ctr	Sill,Casing,Header	I	Wood	Mauve	
044	Hall		Wall		Walls	I	Cement	Cream	
044	Hall				Baseboards	I	Wood	Mauve	
045	Office	D-B	Window(2)	Ctr	Sill,Casing,Header	I	Wood	Mauve	
045	Office	D-B	Window(2)	Ctr	Sash,Jamb,Well	I	Wood	Mauve	
045	Office		Wall		Walls	I	Cement	Cream	
045	Office	A,C,D	Door(3)	Lft,Rgt	Stop,Jamb	I	Wood	Mauve	
045	Office	A,C,D	Door(3)	Lft,Rgt	Casing,Header,Door	I	Wood	Mauve	
046	Foyer	A-C	Door(2)	Ctr	Stop,Jamb	I	Wood	Yellow	
046	Foyer	A-C	Door	Ctr	Casing,Header.Frame,Door	I	Wood	Yellow	
046	Foyer		Walls		Walls	I	Cement	Cream	
046	Foyer		Baseboards		Baseboards	I	Wood	Mauve	
047	Bath	B	Window	Ctr	Sill,Casing,Header	I	Wood	Cream	
047	Bath	B	Window	Ctr	Sash,Well,Jamb	I	Wood	Cream	
047	Bath	B			Baseboards	I	Wood	Cream	
047	Bath		Walls		Walls	I	Cement	Cream	
048	Bath	D	Door(2)	Ctr	Stop,Casing,Header	P	Wood	Yellow	
053	Bath				Baseboards	I	Wood	Cream	
053	Bath	A	Door	Rgt	Stop,Casing,Jamb	I	Wood	Cream	
053	Bath	A	Door	Rgt	Header,Frame	I	Wood	Cream	
053	Bath	D	Window	Lft	Sill,Casing,Frame	I	Wood	Cream	
053	Bath	D	Window	Lft	Sash,Jamb,Well	I	Wood	Cream	
054	File Room	A	Door	Lft	Stop,Casing,Header	I	Wood	Cream	
054	File Room	A	Door	Lft	Jamb,Frame	I	Wood	Cream	
054	File Room	B	Window	Ctr	Sill,Casing,Frame	I	Wood	Cream	
054	File Room	B	Window	Ctr	Sash,Jamb,Well	I	Wood	Cream	
056	Kitchen/File Room	B	Window	Rgt	Sill,Casing,Frame	I	Wood	Cream	
056	Kitchen/File Room	B	Window	Rgt	Sash,Jamb,Well	I	Wood	Cream	
056	Kitchen/File Room	A-C	Door(2)	Lft	Stop,Frame,Header	I	Wood	Cream	
056	Kitchen/File Room	A-C	Door(2)	Lft	Casing,Jambs	I	Wood	Cream	
057	Hall	A	Window	Ctr	Sill,Casing,Frame,Header	I	Wood	Cream	
057	Hall	A	Window	Ctr	Sash,Jamb,Well	I	Wood	Cream	
058	File Room	B	Door(2)	Lft	Stop,Frame,Header	I	Wood	Cream	

Lead Based Painted Room Equivalent Component									
Room #	Room Name	Wall	Structure	Component Location	Component	Paint Condition	Substrate	Paint Color	Notes
058	File Room	B	Door	Lft	Casing,Jamb	I	Wood	Cream	
058	File Room	A	Window(2)	Lft,Rgt	Sill,Casing,Frame	I	Wood	Cream	
058	File Room	A	Window(2)	Ctr	Sash,Well,Jamb	I	Wood	Cream	
059	Office	A	Door	Lft	Stop,Frame,Header	I	Wood	Cream	
059	Office	A	Door	Lft	Casing,Jamb	P	Wood	Cream	
059	Office	B-C	Window(2)	Lft,Rgt	Sill,Casing,Frame	P	Wood	Cream	
059	Office	B-C	Window(2)	Lft,Rgt	Sash,Jamb,Well	P	Wood	Cream	
060	Office	D	Window(2)	Lft,Rgt	Sill,Casing,Frame	P	Wood	Cream	
060	Office	D	Window(2)	Lft,Rgt	Sash,Jamb,Well	P	Wood	Cream	
060	Office	B-C	Door(2)	Lft,Rgt	Casing,Jamb	I	Wood	Cream	
061	Office	C-D	Window(3)	Lft,Rgt,Ctr	Sill,Casing,Frame	I	Wood	White	
061	Office	C-D	Window(3)	Lft,Rgt,Ctr	Casing,Jamb	I	Wood	White	
061	Office	A-B	Door(2)	Ctr,Rgt	Stop,Frame,Header	I	Wood	White	
061	Office	A-B	Door	Ctr,Rgt	Casing,Jamb	I	Wood	White	
062	Foyer	B-D	Door(2)	Ctr	Stop,Frame,Header	I	Wood	Cream	
062	Foyer	B-D	Door	Ctr	Casing,Jamb	I	Wood	Cream	
062	Foyer				Baseboards	I	Wood	Cream	
063	Hall	A	Door	Lft	Casing,Frame	P	Metal	Cream	
064	Exhibit Room	A	Door	Rgt	Stop,Frame,Header	I	Wood	Cream	
064	Exhibit Room	A	Door	Rgt	Casing,Jamb	I	Wood	Cream	
064	Exhibit Room	B-D	Window(4)	Lft,Rgt	Sill,Casing,Frame	P	Wood	Cream	
064	Exhibit Room	B-D	Window(4)	Lft,Rgt	Sash,Jamb,Well	P	Wood	Cream	
065	Storage	D	Door	Ctr	Casing,Frame	P	Wood	Cream	
065	Storage	D	Window	Rgt	Frame	P	Wood	Cream	
066	Storage	C	Door	Rgt	Stop,Casin,Frame	P	Wood	Cream	
066	Storage	C	Door	Rgt	Casing,Jamb	P	Wood	Cream	
066	Storage	A	Window	Rgt	Frame	P	Wood	Cream	
067	Steps	Top	Window	Ctr	Sill,Frame,Header	P	Wood	Cream	
067	Steps	Top	Window	Ctr	Sash,Jamb,Well	P	Wood	Cream	
048	Bath	D	Door	Ctr	Stop,Jamb,Door	P	Wood	Yellow	
048	Bath	D	Window	Rgt	Sash,Jamb,Well	P	Wood	Yellow	
048	Bath	D	Window	Rgt	Sash,Jamb,Well	P	Wood	Yellow	
046	Foyer				Floors	I	Wood	Gray	
049	Office	B	Door(2)	Rgt	Casing,Header	I	Wood	Cream	
049	Office	A-C	Window(2)	Rgt	Sill,Casing,Frame	I	Wood	Cream	
049	Office	A-C	Window(3)	Rgt	Sash,Jamb,Well	I	Wood	Cream	
049	Office				Baseboards	I	Wood	Cream	
050	Office	A-B	Window(4)	Lft,Rgt	Sill,Casing,Header	I	Wood	Cream	
050	Office	A-B	Window(4)	Lft,Rgt	Sash,Jamb,Well	I	Wood	Cream	
050	Office	D	Door	Lft	Casing,Header	I	Wood	Cream	
050	Office				Baseboards	I	Wood	Cream	
051	Hall				Baseboards	I	Wood	Cream	
051	Hall	C	Door	Rgt	Stop,Casing,Header	I	Wood	Cream	
051	Hall	C	Door	Rgt	Door,Jamb	I	Wood	Cream	
052	Bath	C-D	Window(3)	Lft,Rgt	Sill,Casing,Frame	I	Wood	Cream	
052	Bath	C-D	Window(3)	Lft,Rgt	Sash,Jamb,Well	I	Wood	Cream	
052	Bath				Baseboards	I	Wood	Cream	
052	Bath		Wall		Wall	I	Wood	Cream	
052	Bath	A	Door	Rgt	Stop,Jamb	I	Wood	Cream	
052	Bath	A	Door	Rgt	Casing,Header,Frame	I	Wood	Cream	
053	Bath	C-D	Window(2)	Lft,Rgt	Sill,Casing,Well	P	Wood	Cream	
053	Bath	C-D	Window(2)	Lft,Rgt	Sash,Jamb,Well	I	Wood	Cream	
053	Bath	D	Door	Rgt	Casing,Header,Frame	I	Wood	Cream	
053	Bath	D	Door	Rgt	Jamb,Stop	I	Wood	Cream	

Non Assessed Conditions

Systems and/or materials provided below were not assessed under this inspection and therefore should not be disturbed. In the event disturbance is required to accomplish the project objectives additional investigations will be required.

- All accessible components located within the interior were tested for lead-based paint. Room equivalents were identified on some areas that were inaccessible.

XRF Technology

Analysis was performed with a The LPA-1 Lead Paint Analyzer. The LPA-1 is a state-of-the-art XRF spectrum analyzing system for the quantitative measurement of lead in paint on any surface. The LPA-1 was developed by RMD Instruments, LLC, 44 Hunt Street, Watertown, MA 02472. The LPA-1 Analyzer provides a fast, accurate measurement of lead content in as little as 2 to 4 seconds with a 95% confidence level, thereby assuring the highest level of productivity for an inspector.

The LPA- 1 method of measurement is based on the spectrometric analysis of lead K-shell X-ray fluorescence within a controlled depth of interrogation. Various studies have concluded that K-shell x-ray measurement of lead in paint is more accurate and the preferred method for XRF analysis. Unlike L-shell X-rays, K-shell X-rays can easily go through the paint without being affected by the thickness and the composition of various layers of paint that can cause false readings. The controlled depth concept used exclusively in the design of the LPA- 1 restricts the penetration of the energetic K-shell X-rays into the substrate so that the system cannot be mislead by the presence of lead pipes or other objects located deep in a wall.

The LPA- 1 Analyzer uses a Co-57 radioactive source and an advanced, solid-state, room temperature, radiation detector to generate and detect the x-ray fluorescence spectrum of a painted surface. The spectrum is then analyzed by a microprocessor to eliminate the effects of substrate and other factors such as scattering to allow an accurate determination of the amount of lead on a surface.

The LPA-1 automatically analyzes spectrometric data in real time and differentiates the lead signal from the spectrum. The x-ray fluorescence properties are determined through calibration process and are used for automatic substrate correction and calculation of the lead content of a painted surface.

The LPA- 1 Analyzer microprocessor executes the mathematical calculations for XRF analysis, controls the system's automatic self-calibration, and monitors all other aspects of the system operation. The LPA-1 Analyzer consistently monitors its own internal spectrum and makes self-adjustments as necessary. Thus, an operator does not need to perform any system calibrations in the field.

The LPA-1 analyzer has the ability to make a variable time measurement with a 95% confidence level (2 sigma) based on the local regulatory action level. This method of analysis, which utilizes the advance circuitry of the LPA-1 provides inspectors with the highest level of productivity by optimizing the time required to achieve a statistically meaningful measurement. The LPA- 1 truly is an intelligent system, which requires no operator assistance or judgment for its determination

of the lead content in paint. There are three measurement modes of operation in the LPA- 1 analyzer, "Standard Mode", Quick Mode", and "Time Corrected"“. In "Standard Mode ", the operator selects a fixed measurement time

which remains constant regardless of the lead signal. In "Quick Mode", the analyzer seeks the shortest period of time to assure a definitive measurement with 95% confidence (2sigma). The LPA- 1 analyzer concludes a measurement once the 2 sigma confidence level is achieved, typically between 2 to 4 seconds depending on the action level and the lead content.

The fast analysis capability of the LPA-1 analyzer is complemented with a data storage capacity of 4000 data points. After measurement the results may be transferred to a computer at the inspector’s convenience via an RS-232/USB communication link. The easy to use LPA- 1 Report Generating Software creates a simulation of the actual inspection site with icons for doors, windows, steps, etc. The operator can then assign the data points to appropriate locations and obtain an immediate report complete with action levels, summary list, and a cover sheet all presented.

The LPA- 1 system has gone through satisfactory CRCPD device safety reviews for distribution under both Specific and General Licenses.

Recommendations

Based on the findings of the inspection, Harvard Environmental, Inc. is providing the following recommendations.

Any lead-based paint activities should be performed by lead-awareness trained contractors. It is recommended that those contractors have a complete understanding and knowledge of the OSHA regulations pertaining to Lead in Construction. The OSHA standard “CFR 1926.62” should be used when disturbing lead-based paint during construction activities.

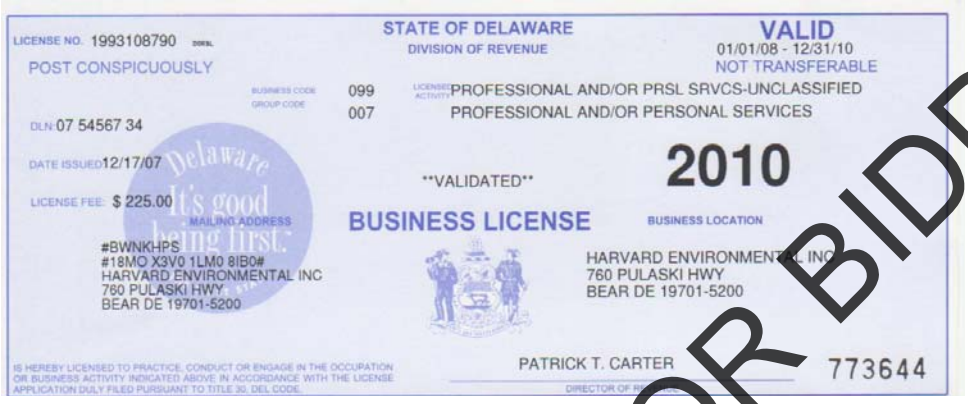
Should lead paint removal become a function of the project, waste characterization needs to be implemented to determine if it is “Hazardous Waste”. All *Hazardous Waste* needs to be packaged properly and disposed of at a certified EPA landfill.

This report is intended to provide “basic data” only. It is assumed that individuals reading and interpreting the sample locations and results, methods of analysis and hazards associated with the materials, are knowledgeable in all areas of discussion. Should any questions arise regarding the content of the information presented, contact should be exclusively to Harvard Environmental, Inc., Bear, Delaware, 1-302-326-2333.

This document should be archived by the Owner for historical reference.

Certifications And Accreditations

Appendix A



LICENSE NO. 1993108790
POST CONSPICUOUSLY

STATE OF DELAWARE
DIVISION OF REVENUE

VALID
01/01/08 - 12/31/10
NOT TRANSFERABLE

BUSINESS CODE 099 PROFESSIONAL AND/OR PRSL SRVCS-UNCLASSIFIED
GROUP CODE 007 PROFESSIONAL AND/OR PERSONAL SERVICES

DLN 07 54567 34
DATE ISSUED 12/17/07
LICENSE FEE $ 225.00

Delaware It's good being first.

VALIDATED

2010

BUSINESS LICENSE

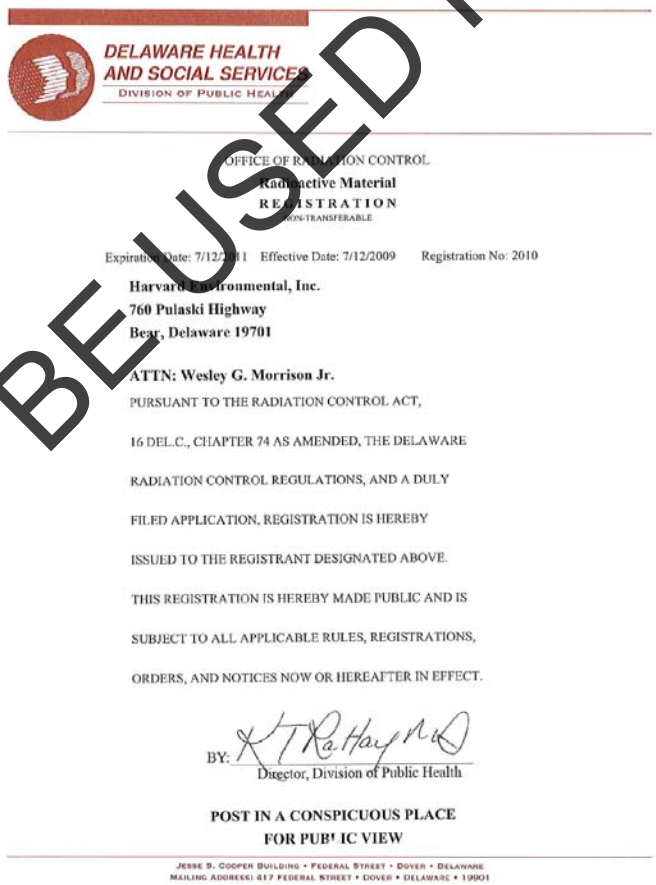
MAILING ADDRESS
#BWNKHPS
#18MO X3V0 1LM0 8IB0#
HARVARD ENVIRONMENTAL INC
760 PULASKI HWY
BEAR DE 19701-5200

BUSINESS LOCATION
HARVARD ENVIRONMENTAL INC
760 PULASKI HWY
BEAR DE 19701-5200

IS HEREBY LICENSED TO PRACTICE, CONDUCT OR ENGAGE IN THE OCCUPATION OR BUSINESS ACTIVITY INDICATED ABOVE IN ACCORDANCE WITH THE LICENSE APPLICATION DULY FILED PURSUANT TO TITLE 30, DEL CODE.

PATRICK T. CARTER
DIRECTOR OF REVENUE

773644



DELAWARE HEALTH AND SOCIAL SERVICES
DIVISION OF PUBLIC HEALTH

OFFICE OF RADIATION CONTROL
Radioactive Material
REGISTRATION
NON-TRANSFERABLE

Expiration Date: 7/12/2011 Effective Date: 7/12/2009 Registration No: 2010

Harvard Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701

ATTN: Wesley G. Morrison Jr.

PURSUANT TO THE RADIATION CONTROL ACT, 16 DEL.C., CHAPTER 74 AS AMENDED, THE DELAWARE RADIATION CONTROL REGULATIONS, AND A DULY FILED APPLICATION, REGISTRATION IS HEREBY ISSUED TO THE REGISTRANT DESIGNATED ABOVE. THIS REGISTRATION IS HEREBY MADE PUBLIC AND IS SUBJECT TO ALL APPLICABLE RULES, REGISTRATIONS, ORDERS, AND NOTICES NOW OR HEREAFTER IN EFFECT.

BY: K T Rattay MD
Director, Division of Public Health

POST IN A CONSPICUOUS PLACE
FOR PUBLIC VIEW

JESSE S. COOPER BUILDING • FEDERAL STREET • DOVER • DELAWARE
MAILING ADDRESS: 417 FEDERAL STREET • DOVER • DELAWARE • 19901

DELAWARE HEALTH AND SOCIAL SERVICES
DIVISION OF PUBLIC HEALTH

OFFICE OF LEAD POISONING PREVENTION

Certificate to Conduct Lead-Based Paint Work

Activities

Certificate #: CF-09-0021R Effective Date: 07/21/09 Expiration Date: 07/21/11

This Certificate is issued in accordance with and subject to the provisions of the State of Delaware Regulations Governing Lead-Based Paint Hazards, adopted July 15, 1998, by the Secretary of Delaware Health & Social Services, under the authority of 16 DE Code, Chapter 1, §122(3)(t).

~ CERTIFICATE HOLDER ~
Harvard Environmental, Inc.
Address: 760 Pulaski Highway
Bear, DE 19701

Karyl T. Rattay, MD, MS, FAAP, FACPM
Director, Division of Public Health
Delaware Health & Social Services

DELAWARE HEALTH AND SOCIAL SERVICES
DIVISION OF PUBLIC HEALTH

OFFICE OF LEAD POISONING PREVENTION

Certificate to Conduct Lead-Based Paint Work

In the discipline of

Lead Risk Assessor

Certificate #: LRA-10-0177 Effective Date: 05/28/10 Expiration Date: 05/28/12

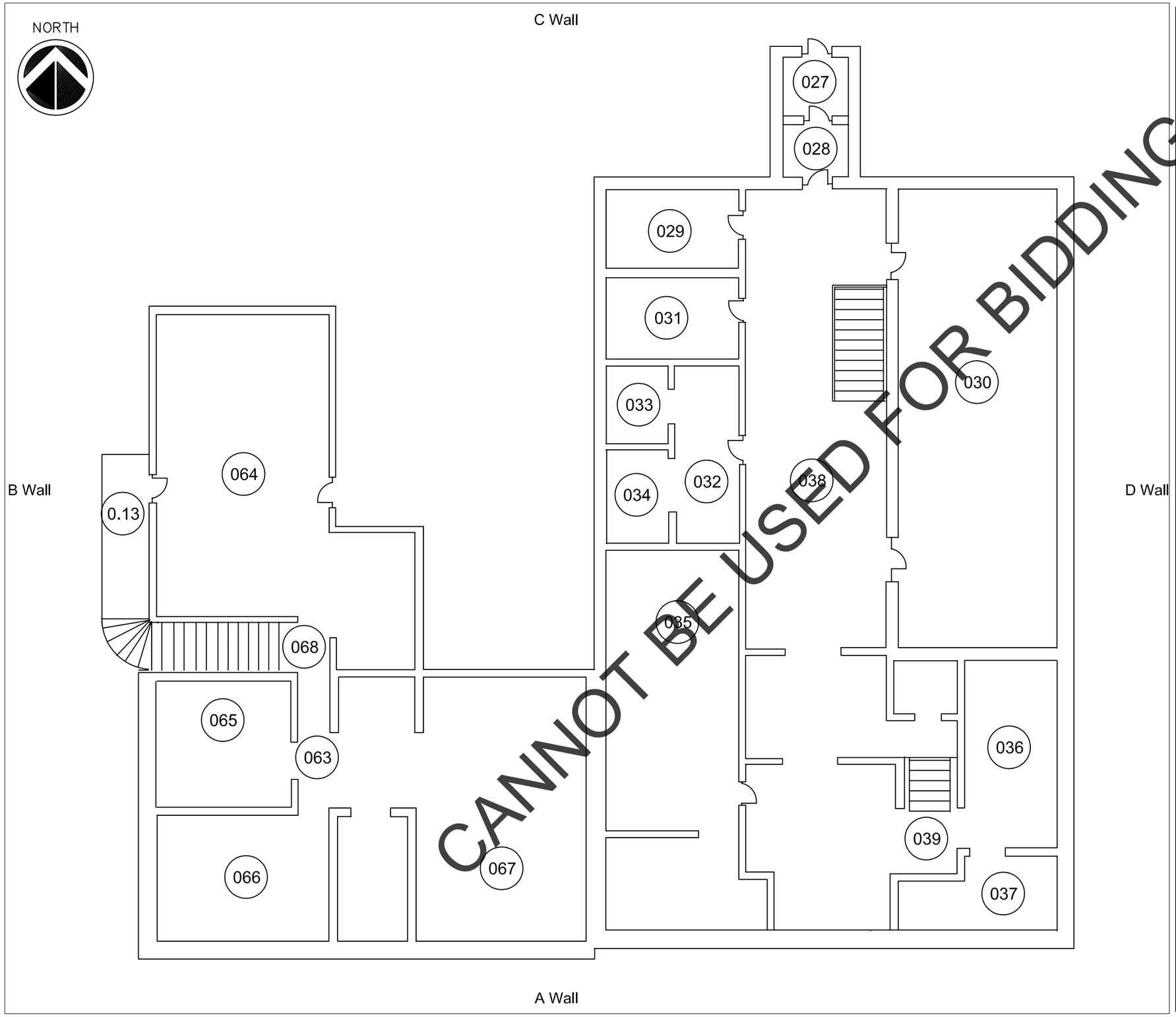
This Certificate is issued in accordance with and subject to the provisions of the State of Delaware Regulations Governing Lead-Based Paint Hazards, adopted July 15, 1998, by the Secretary of Delaware Health & Social Services, under the authority of 16 DE Code, Chapter 1, §122(3)(t).

~ CERTIFICATE HOLDER ~
Jeffrey W. Hogate
Address: 760 Pulaski Highway
Bear, DE 19701

Karyl T. Rattay, MD, MS, FAAP, FACPM
Director, Division of Public Health
Delaware Health & Social Services

Drawings

Appendix B



General Notes:

1. Presentation of information is based on best available information. Drawing schematics were provided by Harvard Environmental Inc.
2. Project #8998 involved lead paint inspections of the interior building components and structures within the Kirk Short building. These Drawings are not to be considered to scale and are intended to be used for orientation purposes only and identifying the wall and room locations.

(001) Grid ID

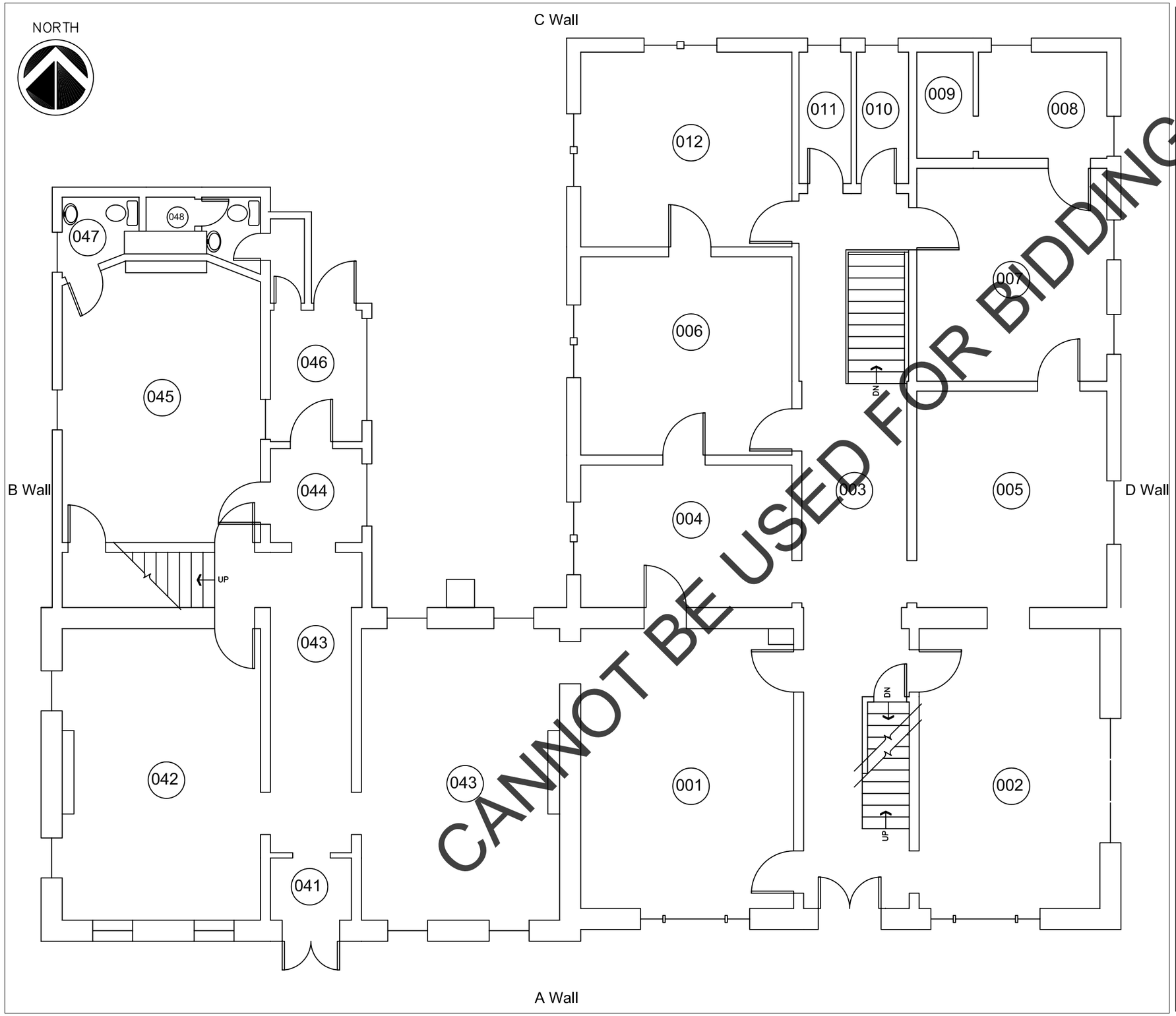
State of Delaware
Division of Facilities Management

Krik Short Building
15-21 The Green
Dover, DE 19901

Rew By: WGM
Dwg By: MPS
11-10-10
PF-8998
DWG 1 of 4

Basement
Lead Paint Inspection

HARVARD Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701
1-302-326-2333



General Notes:

1. Presentation of information is based on best available information. Drawing schematics were provided by Harvard Environmental Inc.
2. Project #8998 involved lead paint inspections of the interior building components and structures within the Kirk Short building. These Drawings are not to be considered to scale and are intended to be used for orientation purposes only and identifying the wall and room locations.

(001) Grid ID

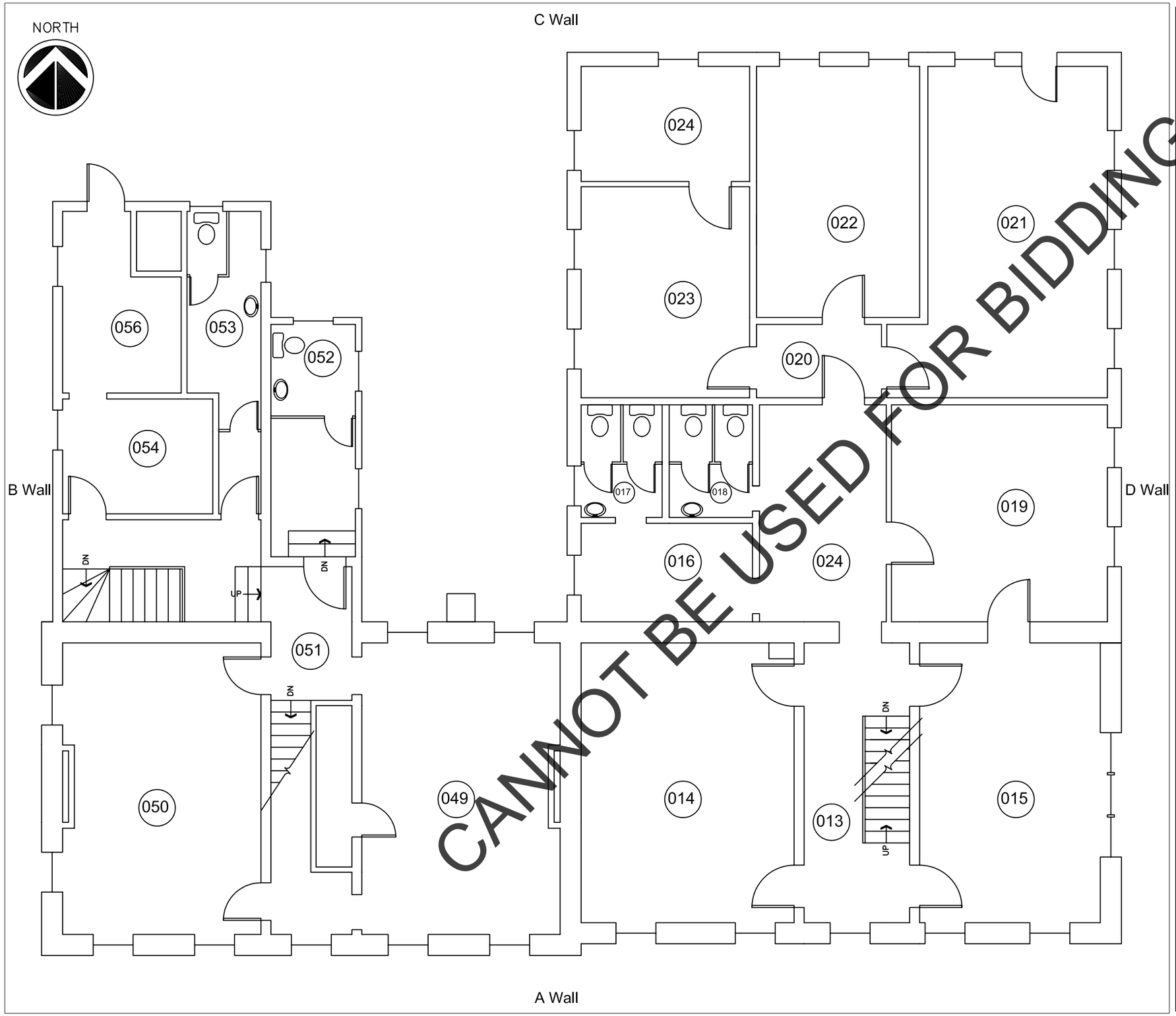
State of Delaware
Division of Facilities Management

Krik Short Building
15-21 The Green
Dover, DE 19901

Rew By: WGM
Dwg By: MPS
11-10-10
PF-8998
DWG 2 of 4

First Floor Lead Paint Inspection

HARVARD Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701
1-302-326-2333



General Notes:

1. Presentation of information is based on best available information. Drawing schematics were provided by Harvard Environmental Inc.
2. Project #8998 involved lead paint inspections of the interior building components and structures within the Kirk Short building. These Drawings are not to be considered to scale and are intended to be used for orientation purposes only and identifying the wall and room locations.

(001) Grid ID

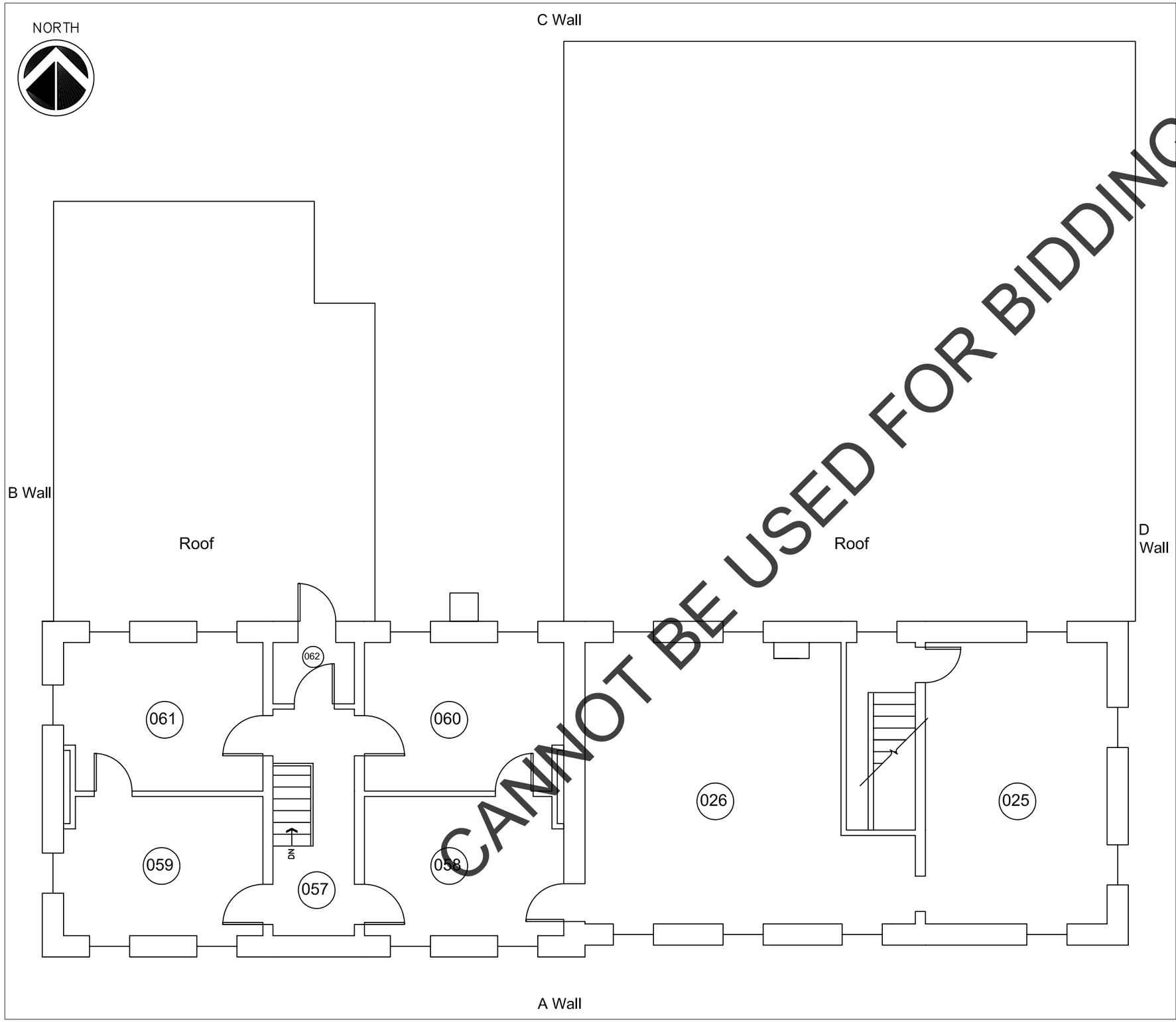
State of Delaware
Division of Facilities Management

Krik Short Building
15-21 The Green
Dover, DE 19901

Rew By: WGM
Dwg By: MPS
11-10-10
PF-8998
DWG 3 of 4

Second Floor
Lead Paint Inspection

HARVARD Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701
1-302-326-2333



General Notes:

1. Presentation of information is based on best available information. Drawing schematics were provided by Harvard Environmental Inc.
2. Project #8998 involved lead paint inspections of the interior building components and structures within the Kirk Short building. These Drawings are not to be considered to scale and are intended to be used for orientation purposes only and identifying the wall and room locations.

(001) Grid ID

State of Delaware
Division of Facilities Management

Krik Short Building
15-21 The Green
Dover, DE 19901

Rew By: WGM
Dwg By: MPS
11-10-10
PF-8998
DWG 4 of 4

Third Floor
Lead Paint Inspection

HARVARD Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701
1-302-326-2333

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. Related Sections include but are not limited to the following:

1. Division 1 Section "References" for applicable industry standards for products specified.
2. Division 1 Section "Closeout Procedures" for submitting warranties for Contract closeout.
3. Other included Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service

performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular from, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.

1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
2. Form: Tabulate information for each product under the following column headings:

   a. Specification Section number and title.
   b. Generic name used in the Contract Documents.
   c. Proprietary name, model number, and similar designations.
   d. Manufacturer's name and address.
   e. Supplier's name and address.
   f. Installer's name and address.
   g. Projected delivery date or time span of delivery period.
   h. Identification of items that require early submittal approval for scheduled delivery date.

3. Initial Submittal: Within 30 days after date of commencement of the Work, submit 3 copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.

   a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.

4. Completed List: Within 60 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
5. Architect's Action: Architect will respond in writing to Contractor within 15 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use CSI Form 13.1A at the end of this section.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

   a. Statement indicating why specified material or product cannot be provided.

b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

   a. Form of Acceptance: Change Order.
   b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

   a. Form of Approval: As specified in Division 1 Section "Submittal Procedures."

b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

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

1.7 PRODUCT WARRANTIES

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

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

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

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

    a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.

10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within **30** days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

Knowledge for Creating and Sustaining the Built Environment

SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase)

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ A/E Project Number: _____

Re: _____ Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Phone: _____

Address: _____

Trade Name: _____ Model No.: _____

Installer: _____ Phone: _____

Address: _____

History: ☐ New product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product:

☐ Point-by-point comparative data attached — REQUIRED BY A/E

Reason for not providing specified item:

Similar Installation:

Project: _____ Architect: _____

Address: _____ Owner: _____

_____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

Savings to Owner for accepting substitution: _____ ($ _____).

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

Page 1 of 2

Form Version: June 2004
CSI Form 13.1A

SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase — Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

Attachments: ☐

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ A/E
☐ Other:

Page 2 of 2

Form Version: June 2004
CSI Form 13.1A

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. Construction layout.
2. General installation of products.
3. Coordination of Owner-installed products.
4. Progress cleaning.
5. Starting and adjusting.
6. Protection of installed construction.
7. Correction of the Work.
8. Project Sign

B. Related Sections include the following:

1. Division 1 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 1 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
3. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
4. Division 02 Section "Selective Demolition" for demolition and removal of selected portions of the building.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and

verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

   a. Description of the Work.
   b. List of detrimental conditions, including substrates.
   c. List of unacceptable installation tolerances.
   d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

C. Building Lines and Levels: Locate and lay out control lines and levels for foundations including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations from two or more locations.

D. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 OWNER-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for Owner's construction forces.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.

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

3.6 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.9 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

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 but are not limited to the following:

1. Division 2 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. Operational Elements: Do not cut and patch the following operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety.

1. Primary operational systems and equipment.
2. Fire-protection systems.
3. Control systems.
4. Communication systems.
5. Electrical wiring systems.

C. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Piping and ductwork.

D. 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.

E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

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.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

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.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

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.

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 or 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 & 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. 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.

4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.

END OF SECTION 017329

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes: Administrative and procedural requirements for construction waste management activities.

1.2 DEFINITIONS

A. Construction, Demolition, and Land clearing (CDL) Waste: Includes all non-hazardous solid wastes resulting from construction, remodeling, alterations, repair, demolition and land clearing. Includes material that is recycled, reused, salvaged or disposed as garbage.

B. Salvage: Recovery of materials for on-site reuse, sale or donation to a third party.

C. Reuse: Making use of a material without altering its form. Materials can be reused on-site or reused on other projects off-site. Examples include, but are not limited to the following: Crushing or grinding of concrete for use as sub-base material. Chipping of land clearing debris for use as mulch.

D. Recycling: The process of sorting, cleaning, treating, and reconstituting materials for the purpose of using the material in the manufacture of a new product.

E. Source-Separated CDL Recycling: The process of separating recyclable materials in separate containers as they are generated on the job-site. The separated materials are hauled directly to a recycling facility or transfer station.

F. Co-mingled CDL Recycling: The process of collecting mixed recyclable materials in one container on-site. The container is taken to a material recovery facility where materials are separated for recycling.

G. Approved Recycling Facility: Any of the following:

1. A facility that can legally accept CDL waste materials for the purpose of processing the materials into an altered form for the manufacture of a new product.

2. Material Recovery Facility: A general term used to describe a waste-sorting facility.

3. Mechanical, hand-separation, or a combination of both procedures, are used to recover recyclable materials.

1.3 SUBMITTALS

A. Contractor shall develop a Waste Management Plan: Submit 3 copies of plan within 14 days of date established for the **Notice to Proceed**.

B. Contractor shall provide Waste Management Report: Concurrent with each Application for Payment, submit **3** copies of report.

1.4 PERFORMANCE REQUIREMENTS

A. General: Divert a minimum of **75%** CDL waste, by weight, from the landfill by one, or a combination of the following activities:

1. Salvage
2. Reuse
3. Source-Separated CDL Recycling
4. Co-mingled CDL Recycling

B. CDL waste materials that can be salvaged, reused or recycled include, but are not limited to, the following:

1. Acoustical ceiling tiles
2. Asphalt
3. Asphalt shingles
4. Cardboard packaging
5. Carpet and carpet pad
6. Concrete
7. Drywall
8. Fluorescent lights and ballasts
9. Land clearing debris (vegetation, stumpage, dirt)
10. Metals
11. Paint (through hazardous waste outlets)
12. Wood
13. Plastic film (sheeting, shrink wrap, packaging)
14. Window glass
15. Wood
16. Field office waste, including office paper, aluminum cans, glass, plastic, and office cardboard.

1.4 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of projects with similar requirements, that employs a LEED Accredited Professional, certified by the USGBC as waste management coordinator.

B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

C. Regulatory Requirements: Conduct construction waste management activities in accordance with hauling and disposal regulations of all authorities having jurisdiction and all other applicable laws and ordinances.

D. Preconstruction Conference: Schedule and conduct meeting at Project site prior to construction activities.

1. Attendees: Inform the following individuals, whose presence is required, of date and time of meeting.

   a. Owner
   b. Architect
   c. Contractor's superintendent d. Major subcontractors
   e. Waste Management Coordinator f. Other concerned parties

2. Agenda Items: Review methods and procedures related to waste management including, but not limited to, the following:

   a. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
   b. Review requirements for documenting quantities of each type of waste and its disposition.
   c. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
   d. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
   e. Review waste management requirements for each trade.

3. Minutes: Record discussion. Distribute meeting minutes to all participants. Note: If there is a Project Architect, they will perform this role.

1.5 WASTE MANAGEMENT PLAN – Contactor shall develop and document the following:

A. Develop a plan to meet the requirements listed in this section at a minimum. Plan shall consist of waste identification, waste reduction plan and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight throughout the plan.

B. Indicate anticipated types and quantities of demolition, site-cleaning and construction waste generated by the project. List all assumptions made for the quantities estimates.

C. List each type of waste and whether it will be salvaged, recycled, or disposed of in an landfill.
The plan should included the following information:

1. Types and estimated quantities, by weight, of CDL waste expected to be generated during demolition and construction.

2. Proposed methods for CDL waste salvage, reuse, recycling and disposal during demolition including, but not limited to, one or more of the following:

a. Contracting with a deconstruction specialist to salvage materials generated, b. Selective salvage as part of demolition contractor's work,
c. Reuse of materials on-site or sale or donation to a third party.

3. Proposed methods for salvage, reuse, recycling and disposal during construction including, but not limited to, one or more of the following:

   a. Requiring subcontractors to take their CDL waste to a recycling facility;
   b. Contracting with a recycling hauler to haul recyclable CDL waste to an approved recycling or material recovery facility;
   c. Processing and reusing materials on-site;
   d. Self-hauling to a recycling or material recovery facility.

4. Name of recycling or material recovery facility receiving the CDL wastes.

5. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on project site where materials separation will be located.

D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Include the following:

1. Total quantity of waste.
2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
3. Total cost of disposal (with no waste management).
4. Revenue from salvaged materials.
5. Revenue from recycled materials.
6. Savings in hauling and tipping fees by donating materials.
7. Savings in hauling and tipping fees that are avoided.
8. Handling and transportation costs. Including cost of collection containers for each type of waste.
9. Net additional cost or net savings from waste management plan.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT, GENERAL

A. Provide containers for CDL waste that is to be recycled clearly labeled as such with a list of acceptable and unacceptable materials. The list of acceptable materials must be the same as the materials recycled at the receiving material recovery facility or recycling processor.

B. The collection containers for recyclable CDL waste must contain no more than 10% non-recyclable material, by volume.

C. Provide containers for CDL waste that is disposed in a landfill clearly labeled as such.

D. Use detailed material estimates to reduce risk of unplanned and potentially wasteful cuts.

E. To the greatest extent possible, include in material purchasing agreements a waste reduction provision requesting that materials and equipment be delivered in packaging made of recyclable material, that they reduce the amount of packaging, that packaging be taken back for reuse or recycling, and to take back all unused product. Insure that subcontractors require the same provisions in their purchase agreements.

F. Conduct regular visual inspections of dumpsters and recycling bins to remove contaminants.

3.2 SOURCE SEPARATION

A. General: Contractor shall separate recyclable materials from CDL waste to the maximum extent possible.

Separate recyclable materials by type.

1. Provide containers, clearly labeled, by type of separated materials or provide other storage method for managing recyclable materials until they are removed from Project site.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water and to minimize pest attraction. Cover to prevent windblown dust.
3. Stockpile materials away from demolition area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from weather.

3.3 CO-MINGLED RECYCLING

A. General: Do not put CDL waste that will be disposed in a landfill into a co-mingled CDL waste recycling container.

3.4 REMOVAL OF CONSTRUCTION WASTE MATERIALS

A. Remove CDL waste materials from project site on a regular basis. Do not allow CDL waste to accumulate on-site.

B. Transport CDL waste materials off Owner's property and legally dispose of

them. C. Burning of CDL waste is not permitted.

END OF CONSTRUCTION WASTE MANAGEMENT

WASTE MANAGEMENT PROGRESS REPORT

MATERIAL CATEGORY	DISPOSED IN MUNICIPAL SOLID WASTE LANDFILL	DIVERTED FROM LANDFILL BY RECYCLING, SALVAGE OR REUSE		
		Recycled	Salvaged	Reused
1. Acoustical Ceiling Tiles				
2. Asphalt				
3. Asphalt Shingles				
4. Cardboard Packaging				
5. Carpet and Carpet Pad				
6. Concrete				
7. Drywall				
8. Fluorescent Lights and Ballasts				
9. Land Clearing Debris (vegetation, stumpage, dirt)				
10. Metals				
11. Paint (through hazardous waste outlets)				
12. Wood				
13. Plastic Film (sheeting, shrink wrap, packaging)				
14. Window Glass				
15. Field Office Waste (office paper, aluminum cans, glass, plastic, and coffee cardboard)				
16. Other (insert description)				
17. Other (insert description)				
Total (In Weight)		(TOTAL OF ALL ABOVE VALUES – IN WEIGHT)		
		Percentage of Waste Diverted	(TOTAL WASTE DIVIDED BY TOTAL DIVERTED)	

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

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

B. Related Requirements:
1. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
2. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 ACTION SUBMITTALS

A. Product Data: For cleaning agents.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest control inspection.

1.5 MAINTENANCE MATERIAL SUBMITTALS

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

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.

   a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section.

5. Submit test/adjust/balance records.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."

6. Advise Owner of changeover in heat and other utilities.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements, including touchup painting.
10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

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

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Submit list of incomplete items in the following format:
   a. PDF electronic file. Architect will return annotated copy.

1.9 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

B. Record Drawings: Maintain and submit one original set of blue- or black-line white prints with two copies of Contract Drawings and Shop Drawings.

1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

   a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
   b. Accurately record information in an understandable drawing technique.
   c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
   d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.

2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
3. Mark important additional information that was either shown schematically or omitted from original Drawings.
4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.

C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders, Record Drawings**,** and Product Data, where applicable.

D. Record Product Data: Submit three copies of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings**,** and Record Specifications, where applicable.

E. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.10 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

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

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials.

Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

k. Remove labels that are not permanent.

l. Wipe surfaces of existing and new mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.

p. Leave Project clean and ready for occupancy.

C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.

2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

   a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

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

END OF SECTION 017700

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SECTION 017823 - MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. Maintenance documentation directory.
2. Maintenance manuals for the care and maintenance of products, and materials.

B. Related Sections include but are not limited to the following:

1. Division 1 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
2. Division 1 Section "Closeout Procedures" for submitting operation and maintenance manuals.
3. Division 1 Section "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals.
4. Divisions 02 through 49 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.3 SUBMITTALS

A. Final Submittal: Submit 1 copy of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Architect's comments. Submit 3 copies of each corrected manual within 15 days of receipt of Architect's comments.

1.4 COORDINATION

A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 MAINTENANCE DOCUMENTATION DIRECTORY

A. Organization: Include a section in the directory for each of the following:

1. List of documents.
2. Table of contents.

B. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

2.2 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of Contractor.
6. Name and address of Architect.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.

b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch, 20-lb/sq. ft. white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

   a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
   b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

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

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to operation and maintenance manuals.

B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.
2. Comply with requirements of newly prepared Record Drawings in Division 1 Section "Project Record Documents."

F. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION 01782

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.

B. Related Sections include but are not limited to the following:

1. Division 1 Section "Closeout Procedures" for general closeout procedures and maintenance manual requirements.
2. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
3. Divisions 02 through 49 Sections for specific requirements for project record documents of the Work in those Sections.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit copies of Record Drawings as follows:

a. Final Submittal: Submit three sets of marked-up Record Prints and one set of record transparencies. Print each Drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit three copies of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit three copies of each Product Data submittal.

1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
   b. Accurately record information in an understandable drawing technique.
   c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:

   a. Dimensional changes to Drawings.
   b. Revisions to details shown on Drawings.
   c. Depths of foundations below first floor.
   d. Locations and depths of underground utilities.
   e. Revisions to routing of piping and conduits.
   f. Revisions to electrical circuitry.
   g. Actual equipment locations.
   h. Duct size and routing.
   i. Locations of concealed internal utilities.
   j. Changes made by Change Order or Construction Change Directive.
   k. Changes made following Architect's written orders.
   l. Details not on the original Contract Drawings.
   m. Field records for variable and concealed conditions.
   n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Transparencies: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.

1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
2. Refer instances of uncertainty to Architect for resolution.
3. Owner will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.
4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.

C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
3. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.
4. Identification: As follows:

   a. Project name.
   b. Date.
   c. Designation "PROJECT RECORD DRAWINGS."
   d. Name of Architect.
   e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of the manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
5. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 017839